

ECONOMICS OF ART MUSEUMS: AN ECONOMETRIC  
ANALYSIS OF MUSEUM MEMBERSHIP IN THE UNITED  
STATES

by

KRISTINA SPEIDEL

A THESIS

Presented to the Department of Economics  
and the Robert D. Clark Honors College  
in partial fulfillment of the requirements for the degree of  
Bachelor of Science

June 2015

## **An Abstract of the Thesis of**

**Kristina Speidel for the degree of Bachelor of Science  
in the Department of Economics to be taken June 2015**

**Title: Economics of Art Museums: An Econometric Analysis of Museum Membership  
in the United States**

Approved: \_\_\_\_\_



**Wesley W. Wilson**

The purpose of this research is to identify the ideal conditions that lead to greater membership levels in fine art museums within the United States. I examine three different categories that impact a museum's success. These are (1) the effects of income and population, (2) the size and longevity of the museum, and (3) the type of organization. Upon forming and analyzing a multiple regression model created from these three segmentations, it is clear that the effects of population, physical size, and charging admission have positive impacts on museum membership levels. The results of this paper will provide museum staff with economic insight on the factors that affect their museum membership rates.

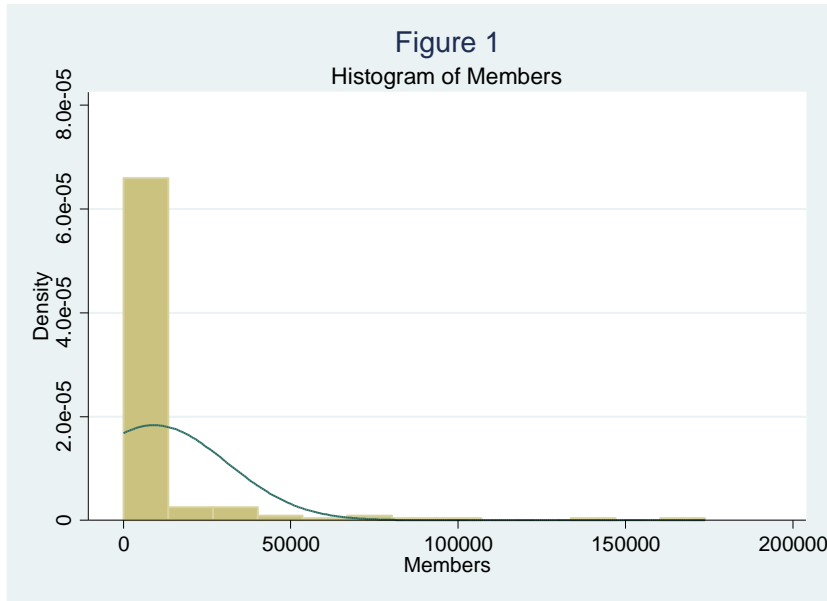
## **Acknowledgements**

I would like to thank Professor Wesley Wilson and Instructor Julie Voelker-Morris, for helping me to fully examine the topic of museum membership through economic analysis. Their constant willingness to assist me in this strenuous project was an incredible help. Furthermore, I would like to express my sincerest gratitude for having the privilege of having excellent professors who are willing to guide me through this demanding but rewarding process. Finally, I would also like to thank my parents, Doug and Karen Speidel, for their tremendous support in encouraging and helping me during this project as well as my whole college career.

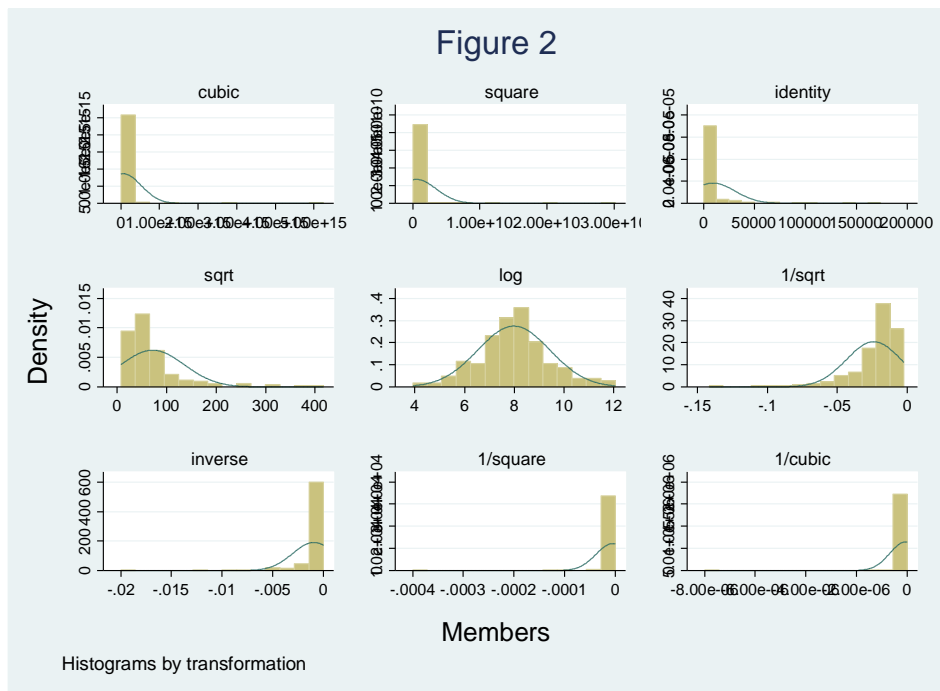
## Table of Contents

1. <i>Introduction</i>	1
2. <i>Background</i>	2
3. <i>The Model</i>	6
5. <i>Empirical Results and Summary</i>	22
6. <i>Conclusion</i>	24
Bibliography	26

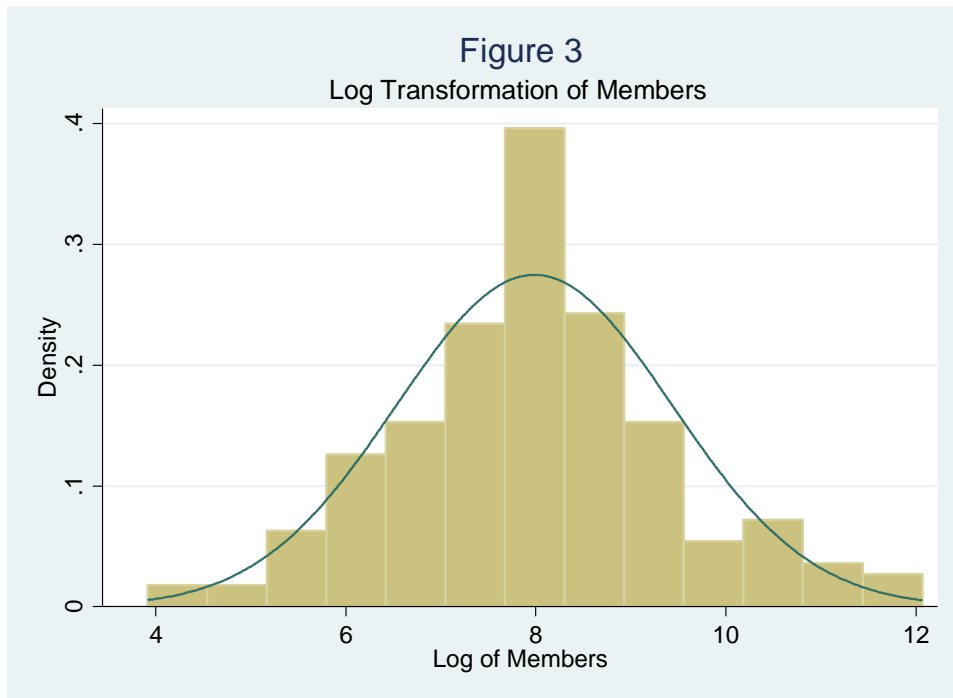
# List of Figures



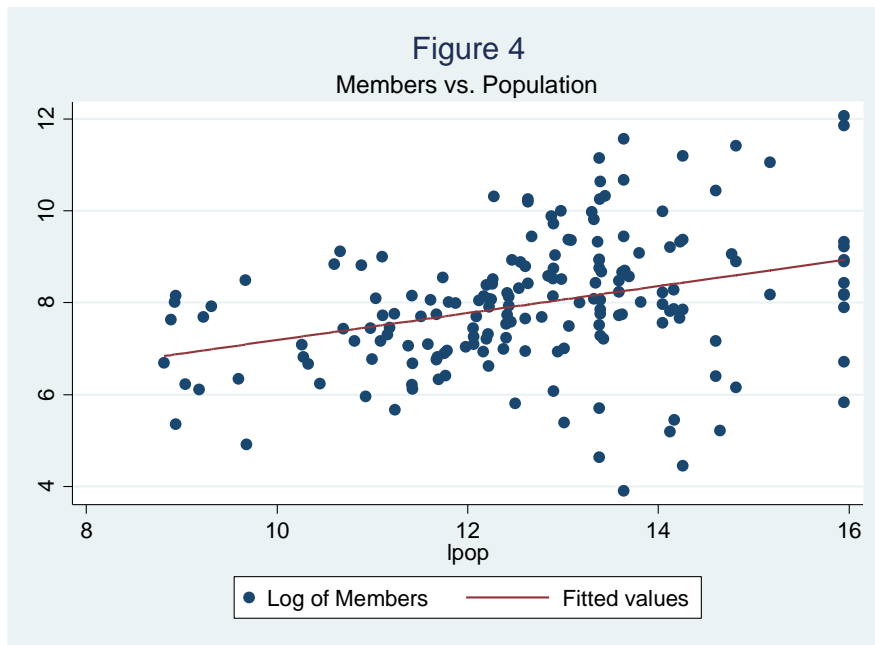
11



12



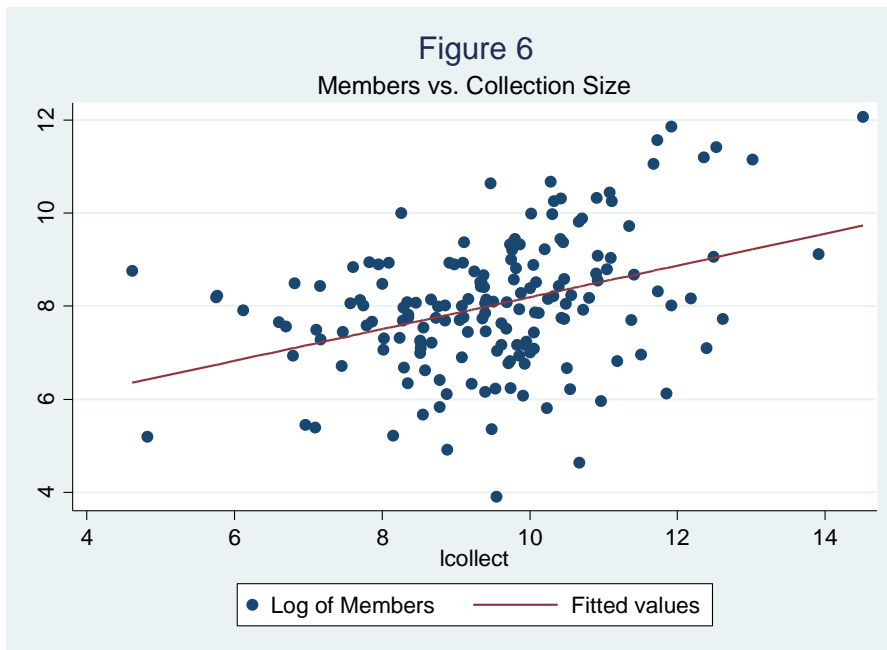
12



19



20



21

## List of Tables

Table 1: Model 1	13
Table 2: Models 1 and 2	15
Table 3: Models 1, 2, and 3	16
Table 4: Models 1, 2, 3, and White Test	18



## ***1. Introduction***

With the economic downturn in the mid 2000's, art museums have struggled to stay afloat amidst the decreasing funds provided by government organizations and private donors. (American Alliance of Museums, 2012) Now, with the slowly recovering economy, museums "must pay particular attention to the services they provide as a means of competing for visitor dollars and time" (Maher, Clark, & Motley 2011, p. 71). Museum membership is a service that can greatly aid to the means of a museum and bolster both the museum's revenue and future donations. Membership programs are tools to connect with their communities and are a way for museums to develop a consistent revenue stream. It is also particularly essential for museums to focus on the rising importance of retaining members as financial support from governments and foundations continue to decrease (Reavey, Howley, Korschun, 2013, p. 90).

This thesis examines three different categories that impact a museum's success. These are the effects of income and population (basic demand factors), the size and longevity of the museum (museum specific continuous factors), and the type of organization (product differentiation factors. e.g. university, art school, government museum, or museum run by a foundation). First, this paper examines how income and population of each museum's surrounding areas affect museum membership. Second, it studies how museum membership is affected by the size and age of the museum itself. Third, it will look at how museum membership is affected by the type of parent organization running the museum. By analyzing these three classifications

and how they determine the success or decline of museum membership, this thesis pinpoints the ideal conditions that lead to greater membership levels.

The thesis is structured as follows. First, the paper summarizes relevant literature that identifies the scope of membership motivation in art museums. Second, the paper describes and discusses a new conceptual model that focuses on museums in the United States along with the segmentation variables that are key to this study. The paper then proceeds to address the empirical model used in this study and, discuss the results from that model. The thesis closes with a final summary and conclusion that describe the limitations of this model along with possible directions for forthcoming research on this topic.

## **2. *Background***

Museum membership is becoming increasingly important to the welfare of museums around the United States. In addition to the lack of funding, the nature of museum attendance and membership is changing as museums are facing “declining enrollments as a result of aging audiences retiring, moving away, or dying” (Bez, et al., 2007, p. 2). With this change in customers, “many museums face the challenge of large numbers of newcomers... who have diverse interests and different need from those audiences previously served” (Bez, et al., 2007, p. 2). Because the profile museum consumer is rapidly changing and the support from government organizations and foundations are waning, understanding what drives museum membership is crucial for museum professionals.

In order to understand the importance of membership for museum, I must first define membership. According to Marianne Bez and Amy Cunningham (2007) in their

article “Membership Matters: Establishing a Vital Membership Program in Your Museum,” membership “is a relationship between an organization and an individual or business, in which tangible benefits are provided in exchange for annual dues (Bez, et al., 2007, p. 2). These tangible benefits can include but are not limited to, “free or discounted admission, publications, members-only events, lectures, parties, museum store discounts, and premiums (such as t-shirts or tote bags)” (Bez, et al., 2007, p. 2).

Benefits are one of the main factors that influence museum attendees to join membership programs, but there are other factors that play into the decision to become a museum member. In the article “Art museum membership and cultural distinction: Relating members' perceptions of prestige to benefit usage,” written by Mary Ann Glynn, C.B. Bhattacharya, and Hayagreeva Rao (1996), the authors conduct an in-depth search into the motivations that cause individuals to become museum members. Glynn, Bhattacharya, and Rao separate the motivations in two categories: aesthetic and nonaesthetic. In order to find the distinctions between these two motivations, the paper lists four hypotheses:

1. Controlling for education and income, art museum members who view membership as a source of prestige will visit the museum more frequently than members who do not view membership as a source of high prestige;
2. Controlling for education and income, art museum members who view membership as a source of high prestige will use special events benefits more frequently than members who do not view membership as a source of high prestige;
3. Art museum members who participate in other ‘highbrow’ art forms will visit the museum more frequently; and
4. Art museum members who participate in other ‘highbrow’ art forms will use special events benefits more frequently (Glynn, et. al, 1996, p. 264).

In their study, the authors used a “pre-eminent art museum of a major southeastern city” with a “membership base of 18,000” (Glynn, et al., 1996, p. 265). Their survey and analysis yielded the results that “museum members who are prestige-oriented tend to be more frequent consumers of the benefits of membership, tending to visit the museum more and attend exclusive special events” (Glynn, et al., 1996, p. 271). The paper also revealed that “members who tend to actively participate in other 'highbrow' art forms more frequently also tend to be more frequent consumers of their membership benefits” (Glynn, et al., 1996, p. 271). These results suggest that prestige-seeking individuals are more likely to be an involved museum member. This information is very valuable to museums, because it gives museum staff a glimpse of the nature of their customer.

To further examine the concept of aesthetic and nonaesthetic motivations for museum membership, Audhesh K. Paswan and Lisa C. Troy (2004) provide a detailed analysis of membership in their article, “Non-profit Organization and Membership Motivation: Exploration in the Museum Industry.” In their research, the authors “identified six dimensions of motivations that are related to altruistic, egoistic, or hedonic reasons for joining” (Paswan, et al., 2004, p. 3). The authors found the two altruistic motivations to be philanthropy (i.e. the desire to help) and preservation (i.e. the desire to save art for the future). Next, they determined that there are three egoistic areas relevant to non-profit membership such as social recognition (i.e. the sense of prestige from belonging to a group), children’s benefits (i.e. joining for children’s programs or so that children can be exposed to art), and tangible member benefits (i.e. joining for the discounts, tax benefits, free merchandise, etc). Lastly, the authors

established that some museum members join for hedonic reasons (i.e. for the love of art) (Paswan, et al., 2004, p. 3).

With the six facets of museum membership set, the authors looked into determining whether there are differences across membership, differences based on demographics with regard to motives for joining museums, and differences based on demographics with regard to levels of museum membership (Paswan, et al., 2004, p. 3). To look into these three questions, the authors conducted the study on a single, large, art museum in a sizeable Southern metropolitan city. Their research resulted in a few important insights into membership motivation. First, “appealing to patrons’ altruistic feelings and feelings of social recognition could stimulate higher membership levels in the organization” (Paswan, et al., 2004, p. 9). Second, the authors determined that income seems to have the strongest relationship with membership levels especially with its relationship to philanthropy motivations (Paswan, et al., 2004, p. 9). Third, gender and age of members seem to have connections to membership motivations. For instance, “women seem to have stronger motivations than men in several categories (e.g. preservation of art, children’s benefits, and hedonic motivations)” ( Paswan, et al., 2004, p. 9). Additionally, age “seems to be strongly associated with tangible benefits, children’s benefit, and somewhat with hedonic motivations” (Paswan, et al., 2004, p. 9). Individuals who are less than 50 years old as well as those who are older than 70 years old have a high score with children’s benefits. Furthermore, tangible benefits ranked low on the importance for those who are older than 70 years of age, but they score much higher on the motivation to preserve the arts (Paswan, et al., 2004, p. 8). These findings

are very useful to museum professionals and can help museums understand the type of demographic they appeal to.

Museum membership demographics are also changing and its importance in the museum world is increasing. Based on the findings discussed above, membership motivation is hinged on specific consumer qualities. Membership appeals more to women than to men, certain types of membership benefits appeal to different age groups, income has a strong connection with philanthropy motivations or social recognition, and high member involvement correlates with the desire for prestige.

The studies are very useful to understand the details of membership motivation, but they do have limitations. Both of the studies only analyze data from one museum. In this thesis, I am going to provide a more comprehensive analysis by examining 189 museums in the United States. I examine membership in terms of income and population for each city corresponding to a museum, the museum type, and the size and age of a museum. The results allow an assessment of how these economically based factors determine membership levels.

### ***3. The Model***

Museum membership follows directly from an economic model of demand. That is, price, income, population, product type, and potentially a wide variety of other factors affect membership. In this thesis, I focus on three primary groups: (1) Income and Population, (2) Size and Age, and (3) Museum Organization Type. All the variables used in this paper's multiple regression model fit into each of those three segments. Section 3.1 Conceptual Model outlines the segmentation variables used in the final regression model and explain the importance of the variables chosen. Section 3.2

Empirical Model provides a visual of the model itself, and the three different regression specifications used in this thesis.

### *3.1 Conceptual Model*

The following variables are used in the multiple regression models for this paper. There are three different specifications using different subsets of the variables explained below.

#### **Income and Population:**

**Income:** The variable for population is found in the United States Census Bureau's figures for per capita income in the past 12 months of each year from 2009-2013 (<http://www.census.gov/quickfacts/table/PST045214/2380740>). It is stated in 2013 dollars. The specific variable used is the income per capita for each city in which the museum is located. Income is an interesting variable to analyze because it could help determine if the local population's disposable income is a main factor in museum membership levels.

**Population:** The variable for population is from the United States Census Bureau's Population Estimates from July 1, 2013. Population is an important variable because membership is a benefit that is long term and would most likely not appeal to tourists visiting the museum. Therefore, there is a reasonable chance that population could indeed have a positive correlation with membership numbers.

#### **Size and Age:**

**Square Feet:** Square feet is the first determinate of museum size. It is taken from the American Association of Museum Directors (AAMD) 2013 Statistical Report.

It is simply the physical square feet of the main museum. This type of measurement of size is valuable because it tests if pure physical size of a building attracts membership.

**Collections:** The second indicator of size is the variable “collections”. This is not the physical size of the museum, but the number of works that each museum holds. The size of a collection could greatly impact the number of members each museum attracts. For instance, a larger collection is expected to positively affect membership numbers (i.e. as the size of the museum, measured by number of works, increases so should membership).

**Age:** This variable is derived from the AAMD 2013 Statistical Report. Subtracting 2013 from the year the museum opened created the variable “age” that is used in this paper. The age of the museum points to the amount of time the museum has been in existence and how that correlates with the number of people that become members.

### **Museum Type:**

This category is divided into four different “dummy” variables. These include: university museums, art schools, government run museums, and museums run by a foundation. Each of these four variables is from the AAMD 2013 Statistical Report. The dummy variables specify the ownership structure of the museum. An examination of membership in relation to each of these categories allows an assessment of whether the organization running each museum factors into the number of museum members.



**Other important variables:**

**No charge:** The variable “no charge” is a dummy variable taken from the AAMD 2013 Statistical Report. This variable specifies if a museum charges for admission or if individuals are allowed to enter the museum for free. This variable is extremely useful to the study because it potentially explains low membership levels in certain museums that offer free admission. To clarify, museum visitors don’t need to become a member and get the benefit of free admission if the admission is already at zero.

*3.2 Empirical Model*

The empirical model section identifies the regression specifications used in this paper. The econometric analysis of this paper was conducted in the program, STATA. In order to combat misrepresentations in the regression, the natural log was taken of the continuous variables to fix for skew and outliers that may negatively affect the model.

**Regression Specifications:**

$$(1) \lnmembers = \beta_1 + \beta_2 \lnccap + \beta_3 \lnpop + \beta_4 \lnage + \beta_5 \lnsquarefeet + \beta_6 \text{dum\_nocharge} + u$$

$$(2) \lnmembers = \beta_1 + \beta_2 \lnccap + \beta_3 \lnpop + \beta_4 \lnage + \beta_5 \lncollections + \beta_6 \text{dum\_nocharge} + u$$

$$(3) \lnmembers = \beta_1 + \beta_2 \lnccap + \beta_3 \lnpop + \beta_4 \lnage + \beta_5 \lnsquarefeet + \beta_6 \text{dum\_nocharge} + \beta_7 \text{dum\_university} + \beta_8 \text{dum\_foundationetc} + \beta_9 \text{dum\_gov} + \beta_{10} \text{dum\_artschool} + u$$

## **Hypotheses:**

The following hypotheses are statements that will be addressed through the analysis of the regression models:

H0: Museums that are in cities with higher income levels have a higher number of members

H1: Museums that are in cities with higher population levels have a higher number of members

H2: Museums that do not charge for admission have a lower number of members.

H3: Museums that have larger physical square feet have a higher number of members.

H4: Museums that have larger collections have higher a higher number of members.

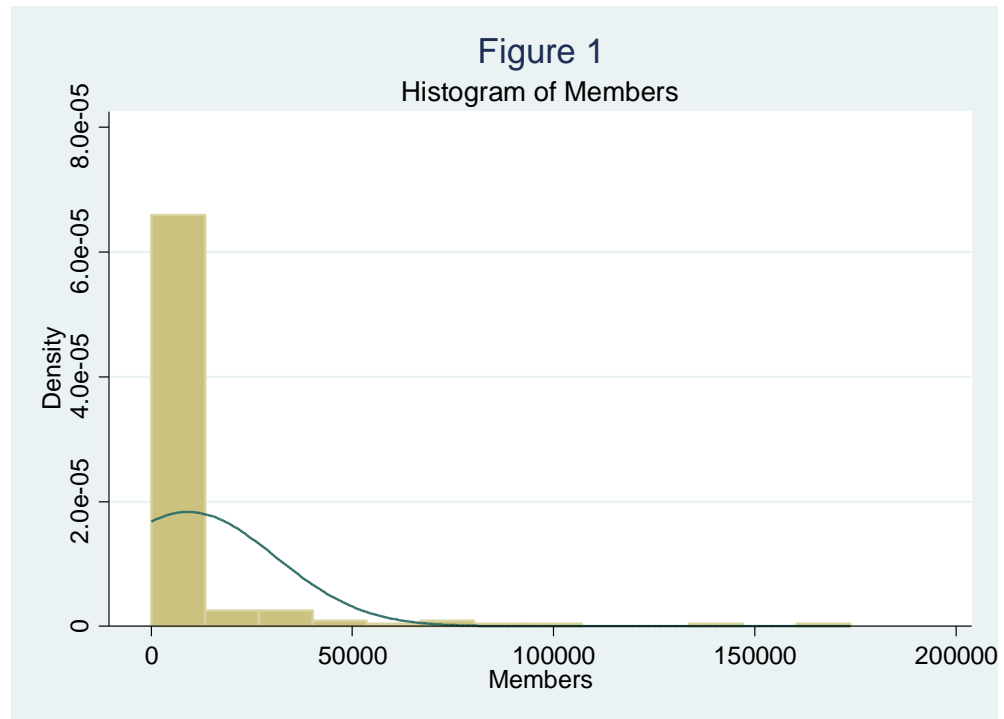
H5: Museums that have been in existence longer have higher a higher number of members.

## **4. Data**

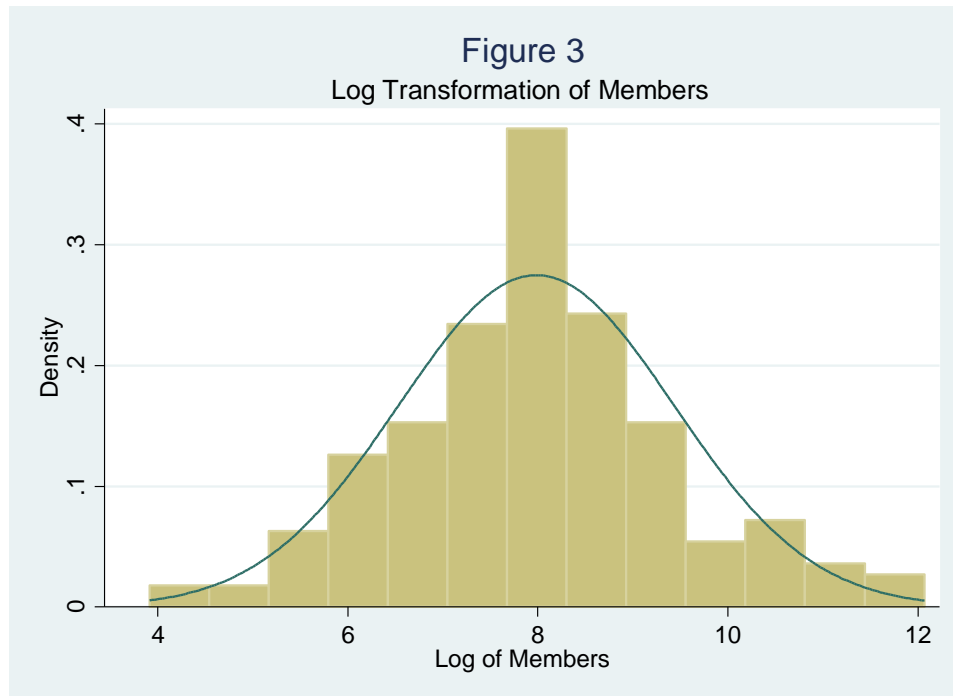
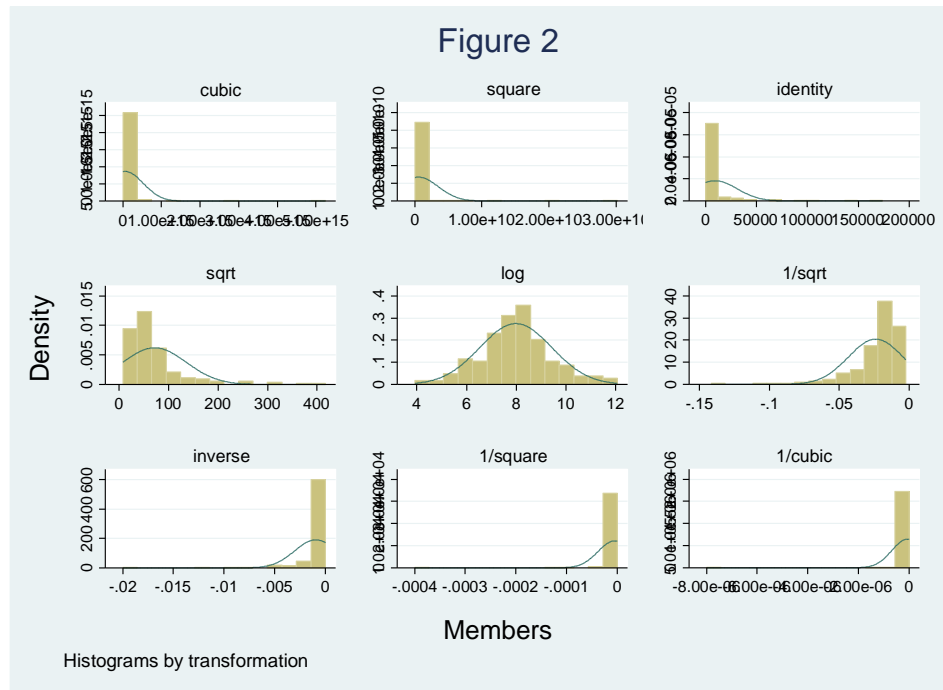
In order to start the process of analyzing membership levels in the United States, I first acquired data from the American Association of Museum Directors' (AAMD) 2013 Statistical Report. This data set held statistics on about 203 fine art museums. To fully complete my data set, I attained data statistics from the United States Census Bureau on income per capita and population for each city from 2013 (<http://www.census.gov/quickfacts/table/PST045214/2380740>). I exported the data into

the data analysis software, STATA, and removed all observations that were not located in the United States making the number of museums equal to 189.

The first step in analyzing the data set was to look at the dependent variable, “members”, and determine if the variable needed to be adjusted in order to provide unbiased results. After viewing the histogram, (Figure 1), it was determined that the dependent variable was skewed to the right and needed to be corrected.



The right way to correct for the skewed variable was determined by looking at the following figure in STATA. (Figure 2) shows the different ways to correct the dependent variable, and it is clear that taking the log of the variable will result in the best distribution.



It is clear from the histogram shown in (Figure 3) that transforming the dependent variable yielded a variable with an approximately normal distribution.

Continuing with the same process, I proceeded to log the remainder of the continuous variables (i.e. income, population, collection, age, and square feet).

The next step in the regression was to determine the discrete variables that were used to delineate different types of museums. The dummy variables that were created are University, foundation, government, art school, and no charge.

Due to the fact that regression outcomes change with every variable added to a model, I decided to develop three different regression models to fully get an understanding of how the variables play into determining membership levels.

The first regression,  $(1) \lnmembers = \beta_1 + \beta_2 \lnccap + \beta_3 \lnpop + \beta_4 \lnage + \beta_5 \lnsquarefeet + \beta_6 \text{dum\_nocharge} + u$ , shows the following results in Table 1:

Table 1: Model 1

VARIABLES	(1) Model 1 lnmembers
lnccap	0.268 (0.2375)
lnpop	0.141*** (0.0441)
lnage	0.003 (0.1086)
lnsqfeet	0.913*** (0.0752)
dum_nocharge	-0.663*** (0.1459)
Observations	176
R-squared	0.596

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

From this first regression, income and age showed little significance in its correlation to membership levels. On the other hand, population, square feet and the dummy variable “no charge” had a great amount of significance. The variable for population (lpop) has a t-value of 3.19 and a p-value of .002, which accompanied by the \*\*\* in the asterisk rating system, indicates that the variable is statistically highly significant. Another variable that is statistically highly significant is square feet (lsqfeet). It has a t-value of 12.14, a p-value of .000, and is also marked with the \*\*\*. Both these variables indicate that they are positively correlated with membership. In other words, a larger population leads to higher membership levels and a larger building correlates to more members. On the other hand, the dummy that indicates free admission is statistically highly significant and correlates negatively with membership. Therefore, museums with free admission tend to have lower membership rates.

The second regression, (2)  $lmembers = \beta_1 + \beta_2 linccap + \beta_3 lpop + \beta_4 lage + \beta_5 lcollections + \beta_6 dum\_nocharge + u$ , shows results in comparison to regression 1 the in Table 2.

Table 2: Models 1 and 2

VARIABLES	(1) Model 1 lmembers	(2) Model 2 lmembers
linccap	0.268 (0.2375)	-0.275 (0.3020)
lpop	0.141*** (0.0441)	0.284*** (0.0559)
lage	0.003 (0.1086)	0.111 (0.1463)
lsqfeet	0.913*** (0.0752)	
dum_nocharge	-0.663*** (0.1459)	-0.790*** (0.1871)
lcollect		0.328*** (0.0624)
Observations	176	169
R-squared	0.596	0.359

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

The key difference in the second regression is changing the size variable from physical size (square feet) to collection size. In this regression, the variables population, collection, and the dummy “no charge” are statistically highly significant which is in line with the previous regression. There are some differences, however, with income per capita becoming less significant than it was previously and population becoming more significant. While the significance of “lcollect” is still statistically highly significant, its 5.26 t-value is much less than the 12.14 t-value of “lsqfeet”. Furthermore, the first

regression fits the data much better with the first regression's  $R^2$  of 0.60 versus the second regression's  $R^2$  of 0.36.

The third regression, (3)  $lmembers = \beta_1 + \beta_2 lincap + \beta_3 lpop + \beta_4 lage + \beta_5 lsquarefeet + \beta_6 dum\_nocharge + \beta_7 dum\_university + \beta_8 dum\_foundationetc + \beta_9 dum\_gov + \beta_{10} dum\_artschool + u$ , shows its results compared to specifications 1 and 2 in Table 3.

Table 3: Models 1, 2, and 3

VARIABLES	(1) Model 1 lmembers	(2) Model 2 lmembers	(3) Model 3 lmembers
lincap	0.268 (0.2375)	-0.275 (0.3020)	0.395* (0.2231)
lpop	0.141*** (0.0441)	0.284*** (0.0559)	0.097** (0.0420)
lage	0.003 (0.1086)	0.111 (0.1463)	-0.013 (0.1008)
lsqfeet	0.913*** (0.0752)		0.894*** (0.0703)
dum_nocharge	-0.663*** (0.1459)	-0.790*** (0.1871)	-0.576*** (0.1366)
dum_university			-0.799*** (0.1629)
dum_foundationetc			0.478 (0.3592)
dum_gov			-1.032** (0.4451)
dum_artschool			0.188 (0.1780)
lcollect		0.328*** (0.0624)	
Observations	176	169	176
R-squared	0.596	0.359	0.665

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1



The third regression is the largest specification and includes the dummy variables, dum\_university, dum\_foundation, dum\_gov, and dum\_artschool. These dummy variables are needed to identify if the type of parent organization of the museum has any correlation to museum membership. Also, due to the high significance of the “square feet” variable in the first regression, the third regression model is using square feet as a size indicator instead of collection size. With this third regression, the models yields the results that square feet, no charge, and university museums are statistically highly significant (\*\*\*) and population and government museums are statistically significant (\*\*).

Table 4: Models 1, 2, 3, and White Test

VARIABLES	(1) Model 1 lmembers	(2) Model 2 lmembers	(3) Model 3 lmembers	(4) Model 3 with White Test lmembers
lincap	0.268 (0.2375)	-0.275 (0.3020)	0.395* (0.2231)	0.395* (0.2355)
lpop	0.141*** (0.0441)	0.284*** (0.0559)	0.097** (0.0420)	0.097** (0.0421)
lage	0.003 (0.1086)	0.111 (0.1463)	-0.013 (0.1008)	-0.013 (0.0922)
lsqfeet	0.913*** (0.0752)		0.894*** (0.0703)	0.894*** (0.1001)
dum_nocharge	-0.663*** (0.1459)	-0.790*** (0.1871)	-0.576*** (0.1366)	-0.576*** (0.1397)
dum_university			-0.799*** (0.1629)	-0.799*** (0.1380)
dum_foundationetc			0.478 (0.3592)	0.478 (0.3699)
dum_gov			-1.032** (0.4451)	-1.032 (1.1331)
dum_artschool			0.188 (0.1780)	0.188 (0.1932)
lcollect		0.328*** (0.0624)		
Observations	176	169	176	176
R-squared	0.596	0.359	0.665	0.665

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 4 simply shows the third regression as a robust regression model. Creating the robust regression corrects for biased estimates of the standard errors and combats heteroskedasticity in the data. Hereroskedasticity is the “circumstance in which the variability of a variable is unequal across the range of values of a second variable that predicts it” (Taylor, 2013).

The scatter plots along with fitted values provides a take a closer look at variables that are statistically significant. Figure 4 displays the relationship between

members and population. As is seen in Figure 4, the data plots show an upward relationship between the two variables. Even though there are a number of museums that show lower members as population increases, the vast majority show an upward trend.



The next crucial statistically significant variable analyzed is the variable that measures physical size of a museum (square feet). The scatter plot in Figure 5 shows the relationship between members and square feet. It is very apparent by looking at the plot that the data points have a strong upward correlation with membership.



The second measurement of size, the collection size, is also a statistically significant variable. As exemplified in Figure 6, there is also an upward trend between members and collections. When comparing square feet in Figure 5 to collections in Figure 6, however, it is clear to see that square feet has a stronger correlation to membership. Although the variable “square feet” is more statistically significant, it is important to understand that both variables are reasons why individuals become members.



Two key dummy variables, dum\_university and dum\_nocharge, showed a strong negative correlation in the third regression. Due to the variables' similarity in figures, Figure 7 was made to discover what percentage of university museums offer free admission. As is seen in Figure 7, 55.32% of university museums offer admittance free of charge.

Figure 7 University Museums vs. No Charge			
dum_university	dum_nocharge		Total
	0	1	
0	89 62.24	54 37.76	143 100.00
1	21 44.68	26 55.32	47 100.00
Total	110 57.89	80 42.11	190 100.00

## 5. *Empirical Results and Summary*

This section summarizes the results of the data in relation with the hypotheses stated in Section 3.

H<sub>0</sub>: Museums that are in cities with higher income levels have a higher number of members

In all three specifications, income shows little significance, and in the case of the second regression, it resulted in a negative coefficient. Due to this lack of information provided by the data, the effect of income on museum membership is inconclusive. Possible reasons for this result could be due to the small sample of museums as well as the lack of time series data. It could be useful for future research to look at income's relationship to membership over time.

H<sub>1</sub>: Museums that are in cities with higher population levels will have a higher number of members.

Population has proven to be statistically significant in relation to museum membership. The results in all three regressions provide strong evidence that population has a positive relationship to museum membership.

H<sub>2</sub>: Museums that do not charge for admission have a lower number of members.

The dummy variable "no charge" is statistically highly significant in all three regressions. This provides strong evidence that museums that offer free admission consequently have a lower membership rates as is stated in H<sub>2</sub>.

H<sub>3</sub>: Museums that have larger physical square feet have a higher number of members.

The regression results for square feet were ultimately the strongest. The variable is statistically highly significant and has a large positive correlation to members. It is clear, by looking at the first and third regressions, that “square feet” has an enormous roll in attracting membership.

H<sub>4</sub>: Museums that have larger collections have higher a higher number of members.

“Collections”, the alternative size variable, is also statistically highly significant. In contrast to “square feet”, however, it is not as highly correlated. Furthermore, the R<sup>2</sup> is stronger in the models using “square feet” instead of “collections”, proving that the models with “square feet” are a better fit and explanation for membership. It could be surmised that members are attracted to the amount of the collection they can see during a single visit. So despite the museums number of works, only the ones that are displayed in the physical space of the museum are reasons for individuals to become members.

H<sub>5</sub>: Museums that have been in existence longer have higher a higher number of members.

The last hypothesis concerns how “age” affects museum membership. According to the regressions, “age” does not have a significant impact on membership. In fact, in the strongest regression (Specification 3), states that age has a slightly negative correlation with members. This result carries no weight and, therefore, there does not appear to be a

relationship between age and museum members. This result is somewhat limited due to the small sample size.

Although there was not a hypothesis listed for museum type, it is still a category that this paper examined. By using the dummy variables for university museums, art schools, museums run by foundations, and government museums, this paper found that university museums have lower membership rates than general museums. When looking for reasons for this trend, it was found that 55.32% of university museums offer free admission, which as we saw in the regression for “no charge”, explains why there are lower membership rates.

## **6. Conclusion**

As time progresses, museum funding is shifting and the importance for better membership programs are increasing. Based on the previous findings of the authors cited in this study, membership appeals more to women than to men, certain types of membership benefits appeal to different age groups, income has a strong connection with philanthropy motivations or social recognition, and high member involvement correlates with the desire for prestige.

This thesis takes another approach in pursuing the museum membership motivation. This paper identifies exterior motivations that contribute to museum membership rates. It looks at museum membership through the lens of income and population for each city corresponding to a museum, the museum type, and the size and age of a museum. By examining 189 museums in the United States in a multiple regression model, this thesis has found that population of the surrounding areas, the



physical size of the museum, and charging admission have an enormous positive impact on membership rates.

With these influential factors in mind, museum professionals, who are seeking to increase membership levels, should consider adding admission charges or increasing admission to a level that encourages membership growth. The other two outcomes, physical size and population, are more difficult to find a solution for in a brief amount of time. However, the factor of time makes these outcomes no less relevant. For some museums, the results point to the need for possible relocation or expansion of the museum building.

By understanding the impact of these economically based variables on museum membership, it is the hope that this paper will give museum staff insight into the economic factors that affect their museum membership rates. Based on the highly significant variables found in this study, museum professionals seeking membership growth will have avenues to remedy their current membership situation.

## Bibliography

- AAMD 2013 Statistical Report. (2013). In *Association of Art Museum Directors*. AAMD.
- America's Museum Reflect Slow Economic Recovery in 2012. (n.d.). Retrieved May 2, 2015, from <http://www.aam-us.org/docs/research/acme-2013-final.pdf?sfvrsn=2>
- Bez, M., & Cunningham, A. (2007). Membership Matters: Establishing a Vital Membership Program in Your Museum. *History News*, 62(1), 1-8.
- Glynn, M., Bhattacharya, C., & Rao, H. (1996). Art museum membership and cultural distinction: Relating members' perceptions of prestige to benefit usage. *Poetics*, 24, 259-274.
- Maher, J., Clark, J., & Gambill Motley, D. (2011). Management Measuring Museum Service Quality in Relationship to Visitor Membership: The Case of a Children's Museum. *International Journal of Arts Management*, 13(2), 29-42.
- Paswan, A., & Troy, L. (2004). Non-Profit Organization and Membership Motivation: An Exploration in the Museum Industry. *Journal of Marketing Theory and Practice*, 12(2).
- Per capita income in past 12 months (in 2013 dollars), 2009-2013. (2013, January 1). Retrieved from <http://www.census.gov/quickfacts/table/INC110213/2380740>.
- Population estimates, July 1, 2013, (V2013). (2013, July 1). Retrieved March 1, 2015, from <http://www.census.gov/quickfacts/table/PST045214/2380740>.
- Reavey, B., Howley Jr., M., & Korchun, D. (2013). An exploratory study of stalled relationships among art museum members. *International Journal of Nonprofit and Voluntary Sector Marketing*, 18(2), 90-100.