Senior Project

Department of Economics

Beyond the Dollar: Quantifying the Effect of Ohio Library Operating Levy Revenue

Kile Byington

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Advisor: Dr. Ali Enami

Abstract

Ohio libraries are unique in that they are classified as political subdivisions, which entitles them to receive monies directly from the State's General Revenue Fund (GRF). They also have the authority to take property tax levy measures to the voters of their service areas. Over the last 20 years, as GRF revenue has decreased, the number of libraries with levies has increased.

Using data collected annually from all Ohio libraries, this paper analyzes the effect of operating levies on the library performance indicators of circulation, program attendance, and annual visitors. Using a two-way, fixed-effect, difference-in-difference model, this paper finds that libraries with a pre-existing levy exhibited statistically significant superior performance indicators when recovering from the 2008/2009 financial crisis. Those outcome differences were maintained at least four years post-recession. This paper contributes to the conversation of public entity funding and provides library administration with data necessary to inform decisions regarding future funding requests. This paper also highlights the need to retain legal language in the Ohio Revised Code that provides Ohio libraries with the authority to take levy issues to the ballot box.

Contents

I. Introduction

Public libraries are the embodiment of the free speech clause in the First Amendment to the United States Constitution. Public libraries offer more than access to information through traditional means such as books and periodicals. They are hubs for accessing information and opportunities through technological means such as free internet access or rental equipment. They offer education with free programming. They make available physical spaces for peaceable assembly and information dissemination. In comparing Ohio to other states, Ohio routinely ranks top in the nation for library card holders per capita and library visits per capita. Ohio greatly surpasses all states regarding support directly from the State (Fleeter, 2021; *Public Libraries Survey,* 2023.).

Public Library Funding (PLF), distributed to the counties from the State of Ohio General Revenue Fund (GRF) for the sole purpose of library allocation, is disbursed monthly. All library systems in Ohio have the power to take funding measures to the ballot box in their districts (*Section 5705.23*). Property tax levies, which are typically disbursed semi-annually, have become an increasingly larger percentage of state-wide operating revenue totals as more levies are passed; libraries in Ohio have a success rate of 80% when putting an operating levy on the ballot (Fleeter, 2017).

In calendar year 2021, PLF and operating levy revenue combined for a total of over $970 million dollars for Ohio Libraries; total operating revenue exceeded $1 billion when including fines, fees, and donations. (State Library of Ohio, 2022). With more than 95% of Ohio library funding deriving directly from tax dollars, and half of that coming from locally approved

measures, a question to answer is how the existence of levy revenue in addition to PLF funds impacts library outcomes.

When the revenue fallout from the 2008 financial crisis was realized in calendar year 2009, PLF revenue decreased by 18%, with a further 6% drop in 2010, combining for over $100 million in reduced revenue over two years (State Library of Ohio, 2022). Did having a levy bear a positive impact on the standard measures of library success, circulation and direct patron interaction metrics including program attendance and general foot traffic? Does a levy impact performance indicators at all? An extensive review of Ohio annual library statistics reports analyzes the effect of voter supported levies on performance indicators.

The remainder of this paper includes the following sections: section II is a review of existing literature; section III is a theoretical discussion; section IV is a description of the data; section V is the methodology of the analysis; section VI is results; and section VII is the conclusion including actionable recommendation based on the findings.

II. Literature Review

Measuring the efficiency of libraries using Data Envelopment Analysis (DEA) constitutes a large body of the current literature. In short, DEA measures efficiency by analyzing similar entities; it uses data from multiple inputs and develops a model evaluating efficiency based on maximum outputs. Inputs for public libraries include revenue, staff size, and collection size; outputs include cardholder numbers, program attendance, and circulation. Libraries overall were found to be inefficient, meaning there was not an optimization of resources, but also that efficiency was largely dependent on population, modernization of physical spaces, and services offered (Del Barrio-Tellado, 2021; Holý, 2021; Guccio, 2018). Patron access to technology and

reliable sources of revenue were also found to be crucial to library success (Adedokun, 2021; Norton, 2021; Pelczar, 2019).

Other governmental entities research has found that revenue diversification can lead to increased spending and less solvency if revenue is derived from similar sources, such multiple taxes coming from the same fund; revenue diversification is important for solvency regarding revenue streams that are separate from the ebbs and flows of sales tax or income tax, such as fines and fees for services (Jimenez, 2021; Carroll, 2009). Local governmental entities are also more prone to negative impacts of the illusion of diversification when reliance is primarily on sales tax, such as PLF, over property tax revenue, such as operating levies (Afonso, 2017).

Public schools, who also receive revenue from multiple tax avenues, fare better on performance indicators when operating expenditures are prioritized (Abbot et al. 2020; Baron, 2022; Enami et al., 2021). Two research projects commissioned by the Institute of Museum and Library Services (IMLS) noted the difficulty of measuring direct economic impact of public libraries or monetizing the library outcomes but showed direct social wellbeing impacts and school effectiveness for communities with library and museum access (Norton, 2016; Norton, 2021). Prior to this study no notable papers have analyzed the effect of property tax revenue on the performance indicators for libraries.

III. Theoretical Discussion

The illusion of diversification theory by Carroll and the overall financial stability theory as studied by Afonso both exhibit a negative impact when there is perceived diversification, such as when public entities receive revenue from a complex taxing system but are significantly impacted in economic downturn as many tax revenue sources are from the same fund. Yet, Afonso also suggests property tax revenue to be less elastic and therefore more reliable than

sales tax revenue (Afonso, 2017; Carroll 2009). The theory that public school success indicators are positively impacted by increased operating revenue agrees with current state library data regarding library success indicators (Abbot et al. 2020; Baron, 2022; Enami et al., 2021; Fleeter, 2021). Using the same outcome variables as much of the DEA literature, I seek to determine whether a secondary, but separate, operating revenue tax source has an impact on library success indicators. I hypothesize that after the financial fallout of 2008/2009, libraries with preexisting levies were better able to retain patron usage than those who did not have a levy.

IV. **Data Description**

The State Library collects data annually on fiscal health, employee statistics, and library usage. The data is submitted to the IMLS, with data dating back to 1996 available online for libraries across the country. While data collection has expanded over time to account for the changing nature of library services, the data analyzed for this paper uses total circulation, annual visits, and program attendance as output variables.

For this paper, total circulation is the total number of physical items circulated by the library each year; program attendance is the aggregate attendance of all planned library programs each year; annual visits are the number of people who utilized the physical buildings for any reason. Total circulation is the most reliable outcome statistic as almost all libraries rely on automation for checking items out to patrons so that inventory can be tracked. Regarding program attendance and annual visits, while some libraries have people counter technology such as motion sensors, many libraries rely on head counts and physical tallies to estimate the attendees and visitors; this can potentially lead to an upward bias if numbers are exaggerated intentionally to sway county funding decisions, or a downward bias if staff is not diligent in noting all visitors or attendees.

The explanatory variables analyzed are physical collection size, PLF, labor expenditure, and materials expenditure. Physical collection size is the aggregate of number of physical books, audiobooks in any physical format, and videos in any physical format. PLF is the amount of revenue received from the State's GRF by way of county allotments restricted to library allocation. Some counties, such as Summit County, use formulas to determine how much each library gets from the county PLF pool; explanatory variables for the funding formulas include but are not limited to circulation, service area population, and number and size of facilities (Bergdorf, 2005). Some counties honor agreements that libraries make with other libraries in that county; some counties determine the allotment at the discretion of the county commissioners. To measure the impact of the types of operating expenditures, indicator variables were created based on the percentage of the total operating expenses used for labor and materials. Using the summary statistics to find the mean, a determination of high library materials expenditure is a 1 if 15% or more of the operating expenditures are materials and a 0 otherwise. Materials is defined as all library circulation materials including the traditional physical materials, periodicals, digital materials, digital subscriptions, databases, and other circulating items. Using the summary statistics again, a determination of high labor expenditure is a 1 if more than 63% of the operating expenditures are spent on the labor costs and a zero otherwise. Labor expenditure includes salaries, benefits and obligatory employer retirement and Medicare expenditures.

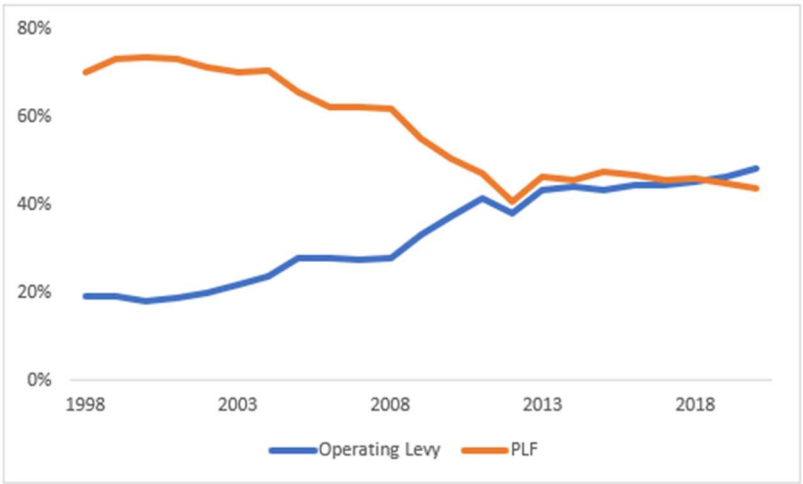
To account for missing explanatory variable datapoints, estimates were made based on the average of the datapoint in any given variable for a specific entity based on the five years preceding and following the missing datapoint. In one case less years were available, in which case the average of all available years was used. One library was removed from the dataset due

to lack of data from which to extrapolate estimations. Any missing datapoints for outcome variable were left intact as not to bias outcome totals. The explanatory variables of collection size and PLF are converted to per capita totals. Labor and materials expenditure impact are converted to indicator variables noting high percentage of operating expenditures for each variable respectively. Outcome variables are also converted to per capita totals based on service area population as reported the annual library statistics.

One noticeable trend between 1998 and 2019 is the changing composition of operating revenue for libraries. As illustrated in Figure 1, as of 2019 operating levies surpassed PLF, becoming the primary source of operating funds for Ohio libraries in aggregate (*Public Libraries Survey*, 2023). As the funding landscape has changed, so too has the usage landscape. Figure 2 represents aggregate circulation, which has been on a downward trend since 2010, while Figure 3 shows both youth program attendance and total program attendance, of which the latter has been tracked since 2006, highlighting the upward trend until the COVID-19 pandemic which drastically affected hours of operation and in-person services (*Public Libraries Survey*, 2023).

Figure 1: **Changing Composition of Ohio Library Operating Revenue**

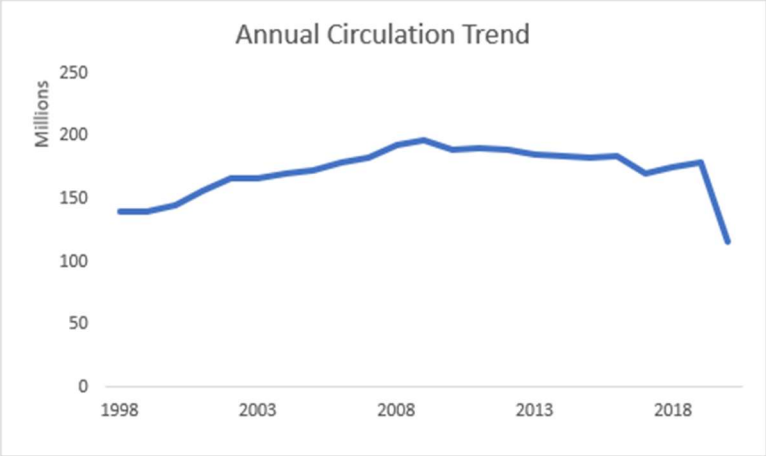
For the first time in recorded history of public library funding in Ohio, voter approved operating levies surpassed the State's PLF distribution as the primary source of revenue in Aggregate.



Source: Institute of Museum and Library Services. *Public Library Statistics*, 1998-2021. Own Calculations

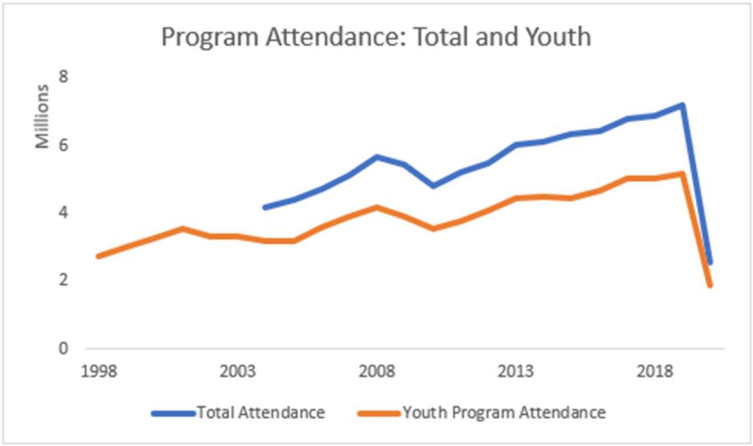
This graph also illustrates the outlier statistics from calendar year 2020 and why it should not currently be included in long term analyses. As data is complete for youth program attendance and runs a parallel trend with total program attendance, it will be used moving forward as a proxy variable for overall program attendance.

Figure 2: **Annual Circulation Trend**
This graph illustrates the reversal of circulation trends post 2009. Although there was an uptick from 2016 to 2019, 2020 saw a sharp decline in hours of operation which drastically affected materials circulation.



Source: Institute of Museum and Library Services. *Public Library Statistics*, 1998-2021. Own Calculations

Figure 3: **Annual Program Attendance Trend, Youth and Total**
This graph highlights the parallel trend in youth and total program attendance as well as the positive trend in attendance over time until COVID-19 pandemic. After March of 2020, all libraries ceased programming for several months, with many not returning to in-person programming until well into 2021.



Source: Institute of Museum and Library Services. *Public Library Statistics*, 1998-2021. Own Calculations

As mentioned previously, library funding has shifted dramatically, with 52 libraries approving operating levies in the five years following the financial crisis, halving the control group (*Public Libraries Survey, 2023*). Statistical summaries were compared between the full dataset and a dataset that excluded libraries who switched their levy status between 2009 and 2013. As Figure 4 indicates, the mean and standard deviation between the sets is quite similar although there may be a small upward bias present with the revised dataset. Assuming a downward bias if using all entities, and based the small size of the change in means between the datasets, this paper works on the assumption that upward bias of the revised set is smaller than the downward bias of the dataset including all entities, therefore closer to the actual impact. Moving forward, only data through 2013 will be modeled with the revised dataset. This represents four years post-recession. Did having an operating levy pre-recession affect performance indicators post-recession; did an operating levy help libraries weather the financial storm?

Figure 4**: Summary Statistics- Complete and Revised Datasets**

This comparison highlights the negligible differences in the dataset after entities were removed if a levy was approved between 2009 and 2013.

Full Dataset Summary Statistics:

Variable	Obs.	Min.	Max.	Mean	STD.
Circulation Per Capita	5492	1.01	202.74	15.44	12.73
Attendance Per Capita	5490	.00	12.23	.47	.54
Annual Visits Per Capita	5493	.38	156.46	7.94	7.95
PLF Per Capita	5493	5.77	577.24	41.72	28.13
Items Per Capita	5471	.31	127.75	6.27	5.81
Materials Exp. % Operating	5493	.00	.45	.15	.05
Labor Exp % Operating	5492	.16	.88	.63	.07

Revised Dataset Summary Statistics:

Variable	Obs.	Min	Max.	Mean	STD
Circulation Per Capita	3821	1.01	202.74	16.66	14.24
Attendance Per Capita	3818	.00	12.23	.51	.59
Annual Visits Per Capita	3821	.38	156.46	8.62	9.10
PLF Per Capita	3821	5.77	577.24	43.21	31.60
Items Per Capita	3821	.31	127.75	6.60	6.48
Materials Exp. % Operating	3821	.00	.42	.15	.05
Labor Exp % Operating	3820	.16	.87	.63	.08

Source: Institute of Museum and Library Services. *Public Library Statistics*, 1998-2019. Own Calculations

V. **Methodology**

The dataset for this causal analysis consists of 198 libraries between the years 1998 and 2013. It is used to create a difference-in-differences model examining the effect of an existing levy on library performance indicators post-recession. The model accounts for fixed effects of time and entity. Explanatory and outcome variables are converted to per capita figures to reduce the bias of larger library systems. Model 1 is the base regression model including time and entity fixed effects, and Model 2 is the regression model with other control variables included.

Model 1:

$$Outcome_{it} = B_0 + B_1 DiD + time_t + Entity_i + error_{it}$$

Model 2:

$$Outcome_{it} = B_0 + B_1 DiD + B_4 Itemspercap_{it} + B_5 PLFpercap_{it} + B_2 HighLaborexp_{it} + B_3 HighMatexp_{it} + time_t + Entity_i + error_{it}$$

The explanatory variables in this model are: DiD, the indicator of having a levy by 2009; number of physically circulating items per capita; PLF revenue per capita; high labor expenditures as a percentage of operating expenses; high materials expenditures as a percentage of operating expenses and time and entity fixed effects. The outcome variables are circulation of library items per capita, program attendance per capita, and annual visits per capita.

To determine the similarity of the treatment and control groups before 2009, the explanatory variables of each group were tested for statistically significant differences. As described in Figure 5, items per capita and PLF per capita were not statistically different between the two groups. Figure 5 also includes the Variance Inflation Factor (VIF) test for multicollinearity between independent variables. The result for the VIF does indicate moderate correlation regarding items per capita and PLF per capita but not enough to warrant corrective measures or elimination of either variable. A correlation matrix was also conducted to look for potentially correlated variables. No results were deemed correlated to the variable of interest, the impact of pre-existing levies.

Figure 5: **Balance of Regressors and Collinearity Test**

This table evidences the statistically insignificant differences between libraries with and without a levy before 2009 regarding the continuous control variables, and it exhibits the results of the test for multicollinearity of the continuous control variables as well.

Balance of Regressors and Variance Inflation Factor

Regressors	With Levy	Without Levy	Dif.	VIF
Items Per Capita	6.14	6.09	0.05	4.09
	(0.11)	(0.25)		
PLF Per Capita	45.34	44.17	1.17	4.05
	(0.84)	(1.16)		

Note: Standard errors are in parenthesis. *, **, and ***indicate 10%, 5%, and 1% significance levels, respectively.

Source: Institute of Museum and Library Services. *Public Library Statistics*, 1998-2019. Own Calculations

To further determine whether a causal interpretation is possible, a regression model was run to determine if the two groups exhibited parallel trends prior to 2009. Model 3 is the model used for the parallel trend test.

Model3:

$$Outcome_{it} = B_0 + B_1 Levy + TY + TY^2 + TY^3 + X_{it} + time_t + Entity_i + error_{it}$$

The interaction variables of having a levy with year are included for nonlinear trends analysis, and the model was restricted to pre-2009. X represents other explanatory variables in the model. As evidenced in Figure 6, there was no statistical significance to the interaction terms, indicating a parallel trend. A full table is located in Appendix A.

Figure 6: **Parallel Trend Test**

This table evidences the parallel trend in the group with and without a levy based on the lack of statistical significance of the interaction terms accounting for non-linear trends.

Parallel Trend Regression Models

Regressors	Circ. Per Cap.	Attend. Per Cap.	Visits Per Cap.	Circ. Per Cap.	Attend. Per Cap.	Visits Per Cap.
Intercept	9.6665***	0.1121***	5.6307***	-1.8936**	-0.0979**	-2.4635**
	(1.06)	(0.04)	(0.69)	(0.82)	(0.04)	(1.12)
Has a Levy	-3.0152	0.0430	-2.3820	-2.4857**	0.0532	-1.9664
	(2.24)	(0.07)	(2.11)	(1.09)	(0.06)	(1.45)
Has a Levy*Year	0.4189	0.0413	-0.4123	0.5020	0.0450	-0.4112
	(1.47)	(0.05)	(1.36)	(0.70)	(0.04)	(0.93)
Has a Levy*Year^2	0.0769	-0.0085	0.2367	-0.0271	-0.0110	0.1782
	(0.27)	(0.01)	(0.25)	(0.13)	(0.01)	(0.17)
Has a Levy*Year^3	-0.0064	0.0004	-0.0164	0.0029	0.0006	-0.0106
	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)
Items Per Capita				0.1956	0.0159***	-0.2689
				(0.17)	(0.00)	(0.19)
PLF Per Capita				0.3575***	0.0052***	0.2946***
				(0.04)	(0.00)	(0.05)
High Labor Exp.				0.4339*	-0.0003	0.6560**
				(0.24)	(0.02)	(0.26)
High Materials Exp				0.1132	-0.0007	-0.0539
				(0.29)	(0.02)	(0.34)
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of Obs.	1,907	1,904	1,907	1,907	1,904	1,907
Adjusted R-Square	0.7542	0.6966	0.6026	0.9181	0.7572	0.7774
Overall Significance	95.36***	37.09***	64.56***	143.33***	51.45***	46.72***

Note: Robust standard errors are in parenthesis. *, **, and ***indicate 10%, 5%, and 1% significance levels, respectively.

Source: Institute of Museum and Library Services. *Public Library Statistics*, 1998-2019. Own Calculations

Based on the outcomes of the balance of regressors test for the continuous explanatory variables and the parallel trend test, which both showed no statistical significance for their respective variables, I conclude that a causal analysis can be constructed to intrepret the effect of having a pre-existing levy on post recession outcomes regarding circulation, program attendance, and annual visits.

VI. **Results**

The first set of models restricted the time period to directly after the recession, fiscal year ending December 31, 2010. The first three models in Figure 7 measure the effects of having a levy by year 2009 on circulation per capita, program attendance per capita, and annual visits per capita, with no other explanatory variables aside from the time and entity fixed effects. This base model exhibits a causal effect of having a levy on circulation, but not on program attendance or annual visits. To create a more explanatory model, the continuous variables of number of items per capita and PLF revenue per capita were added, in addition to the indicator variables high labor expenditure as percentage of total operating expenditure and high materials expenditure as a percentage of total operating expenditure. The impact of the levy, as well as the significance level, increased as variables were added to the model. I hypothesize this is due to the reduced variance of the overall model. Circulation per capita increased by 3 items per person when a levy was present. This number is statistically significant at the 1% level. The R=squared value is high as well, noting a good model that explains a large portion of the circulation per capita statistic. As assumed by the uncertainty of the totals for program attendance and visits per capita, the result is positive and significant, but the model is less complete based on the r-square value. A full table of results for figure 7 is located in Appendix B.

To test for lasting effects of having a levy pre-recession, Figure 8 exhibits the impact of an existing levy two years post-recession, through 2011. These regression models show sustained effect for having a levy as entities recovered from economic uncertainty. Coefficients remained static in year two and standard errors decreased as more data was included. Interesting to note is the increased significance regarding levy effect on program attendance. This increase in the significance could reflect the increase from libraries with levies that were able to pivot to new

programs, or it could be the increased awareness by the public as their needs changed. A full table of results for Figure 8 is located in Appendix C.

A longer-range look examines four years out from the crisis. Regression models run through 2013 examine whether the effects were sustained beyond the recovery period. Figure 9 validates the positive effect that operating levies have on circulation, program attendance, and annual visits. Four years post-recession, having a levy pre-recession still increased circulation more than three checkouts per person at the 1% significance level, holding all else constant. Program attendance and annual visits are both positively correlated at the 5% significance level, holding all else constant. A full table of results for Figure 9 is located in Appendix D.

In order to test for robustness, models were run excluding the Items per Capita due to concerns that it could be affected by having a levy. Figure 10 exhibits the models run without Items per Capita as compared to models using that control variable. There is little change to the variable of interest coefficients or standard errors. One reason why collection size may not be an outcome of having a levy is an entity's propensity to weed the collection, i.e., item disposal. Another factor in determining collection size that may outweigh the revenue factor is the physical constraint of building size and space designation with the entity. The preferred models, therefore, are the ones that include all control variables tested. In summary, the preferred models show, over time, a significant positive impact of having a preexisting levy and performance indicators during financial instability.

Figure 7: **Post Recession Impact, One Year Out**

This table provides the coefficients, robust standard error, and significance for the regressor of interest and other control variables. The first three models test the base model and the next set of models test additional explanatory variables.

2010: Post Recession Impacts

Regressors	Circ. Per Cap.	Prog. Per Cap.	Visits Per Cap.	Circ. Per Cap.	Prog. Per Cap.	Visits Per Cap.
Intercept	8.5580***	0.1605***	4.2432***	-1.9538**	-0.0559**	-2.3237*
	(0.74)	(0.02)	(0.57)	(0.81)	(0.03)	(1.20)
Had a levy as of 2009	2.7145***	0.0444	0.6285	3.2975***	0.0612**	0.9239*
	(0.85)	(0.03)	(0.55)	(0.53)	(0.03)	(0.56)
Items Per Capita				0.1843	0.0207***	-0.4112**
				(0.17)	(0.00)	(0.21)
PLF Per Capita				0.3265***	0.0051***	0.2615***
				(0.04)	(0.00)	(0.05)
High Labor Exp				0.5479**	-0.0108	0.4251*
				(0.23)	(0.01)	(0.26)
High Material Exp				0.5046*	0.0029	0.1772
				(0.28)	(0.02)	(0.30)
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	2,255	2,252	2,255	2,255	2,252	2,255
Adjusted R-Square	0.7448	0.6668	0.6432	0.9102	0.7545	0.7705
Overall Significance	71.76***	37.70***	44.25***	145.23***	53.79***	53.97***

Note: Robust standard errors are in parenthesis. *, **, and ***indicate 10%, 5%, and 1% significance levels, respectively.

Source: Institute of Museum and Library Services. *Public Library Statistics*, 1998-2019. Own Calculations

Figure 8: **Post Recession Impact, Two Years Out**

This table provides the coefficients, robust standard error, and significance for the regressor of interest and other control variables. The first three models test the base model and the next set of models test additional explanatory variables.

2011: Post Recession Impacts

Regressors	Circ. Per Cap.	Prog. Attend Per Cap.	Visits Per Cap.	Circ. Per Cap.	Prog. Attend Per Cap.	Visits Per Cap.
Intercept	8.5022***	0.1518***	4.2599***	-1.7039**	-0.0612**	-1.9118*
	(0.74)	(0.03)	(0.58)	(0.80)	(0.03)	(1.16)
Has a Levy as of 2009	2.6859***	0.0443	0.5711	3.3293***	0.0658***	0.8878*
	(0.66)	(0.03)	(0.45)	(0.44)	(0.02)	(0.46)
Items Per Capita				0.1084	0.0208***	-0.4284**
				(0.18)	(0.00)	(0.21)
PLF Per Capita				0.3232***	0.0051***	0.2524***
				(0.04)	(0.00)	(0.05)
High Labor Exp				0.4767**	-0.0164	0.2684
				(0.23)	(0.01)	(0.25)
High Material Exp				0.5876**	-0.0014	0.1219
				(0.26)	(0.01)	(0.29)
Time and Entity Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of Obs.	2,429	2,426	2,429	2,429	2,426	2,429
Adjusted R-Square	0.7509	0.6650	0.6583	0.9075	0.7562	0.7718
Overall Significance	77.88***	37.74***	47.94***	160.98***	55.47***	58.41***

Note: Robust standard errors are in parenthesis. *, **, and ***indicate 10%, 5%, and 1% significance levels, respectively.

Source: Institute of Museum and Library Services. *Public Library Statistics*, 1998-2019. Own Calculations

Figure 9: **Post-Recession Impact, Four Years Out**

This table provides the coefficients, robust standard error, and significance for the regressor of interest and other control variables. The first three models test the base model and the next set of models test additional explanatory variables.

2013: Post Recovery Impacts

Regressors	Circ. Per Cap.	Prog. Attend Per Cap.	Visits Per Cap.	Circ. Per Cap.	Prog. Attend Per Cap.	Visits Per Cap.
Intercept	8.4728***	0.1470***	4.2669***	-1.1491	-0.0559*	-1.1990
	(0.73)	(0.03)	(0.58)	(0.77)	(0.03)	(1.11)
Has a Levy as of 2009	2.9212***	0.0265	0.6342*	3.6008***	0.0457**	1.0014**
	(0.52)	(0.02)	(0.38)	(0.36)	(0.02)	(0.39)
Items Per Capita				0.0667	0.0192***	-0.3699*
				(0.17)	(0.00)	(0.19)
PLF Per Capita				0.3112***	0.0049***	0.2278***
				(0.04)	(0.00)	(0.05)
High Labor Exp				0.3054	-0.0236*	0.0673
				(0.22)	(0.01)	(0.24)
High Material Exp				0.4813**	0.0051	-0.0511
				(0.24)	(0.01)	(0.27)
Time and Entity Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of Obs.	2,777	2,774	2,777	2,777	2,774	2,777
Adjusted R-Square	0.7602	0.6655	0.6746	0.9020	0.7396	0.7682
Overall Significance	92.79***	38.88***	55.30***	185.35***	55.23***	62.90***

Note: Robust standard errors are in parenthesis. *, **, and ***indicate 10%, 5%, and 1% significance levels, respectively.

Source: Institute of Museum and Library Services. *Public Library Statistics*, 1998-2019. Own Calculations

Figure 10: **Robustness Check**

This table evidences the test of the regression model by eliminating Items per Capita to determine if it is affecting the coefficient of the levy variable. Based on the results, it has negligible effect on the outcome.

Robustness Check on Regression to 2010						
Regressors	**Circ. Per Cap.**	**Prog. Attend Per Cap.**	**Visits Per Cap.**	**Circ. Per Cap.**	**Prog. Attend Per Cap.**	**Visits Per Cap.**
Intercept	-1.9538**	-0.0559**	-2.3237*	-2.1115***	-0.0736***	-1.9721*
	(0.81)	(0.03)	(1.20)	(0.73)	(0.03)	(1.13)
Had a Levy as of 2009	3.2975***	0.0612**	0.9239*	3.2723***	0.0583**	0.9800*
	(0.53)	(0.03)	(0.56)	(0.54)	(0.03)	(0.57)
Items Per Capita	0.1843	0.0207***	-0.4112**			
	(0.17)	(0.00)	(0.21)			
PLF Per Capita	0.3265***	0.0051***	0.2615***	0.3511***	0.0079***	0.2067***
	(0.04)	(0.00)	(0.05)	(0.02)	(0.00)	(0.03)
High Labor Exp %	0.5479**	-0.0108	0.4251*	0.5491**	-0.0106	0.4224*
	(0.23)	(0.01)	(0.26)	(0.23)	(0.01)	(0.26)
High Material Exp %	0.5046*	0.0029	0.1772	0.5066*	0.0031	0.1726
	(0.28)	(0.02)	(0.30)	(0.28)	(0.02)	(0.30)
Time and Entity Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	2255	2252	2255	2,255	2,252	2,255
Adjusted R-Square	0.9102	0.7545	0.7705	0.9099	0.7511	0.7677
Overall Significance	145.23***	53.79***	53.97***	143.70***	53.41***	55.94***

Note: Robust standard errors are in parenthesis. *, **, and ***indicate 10%, 5%, and 1% significance levels, respectively.

Source: Institute of Museum and Library Services. *Public Library Statistics*, 1998-2019. Own Calculations

VII. **Conclusion and Recommendations**

While one study alone cannot definitively prove a causal relationship between operating levies and post-recession success, this study provides a framework and an impetus for further analysis to support the theory of positive impact for Ohio libraries who have this source of income. As hypothesized, there was a statistically significant positive impact from having a levy as of 2009 on performance indicators of circulation, program attendance, and annual visits, not only in the direct recovery period, but also several years beyond.

One unexpected but interesting result is the relationship between program attendance and physical collection size. In addition to further research on operating levy impact on Ohio libraries, the impact of physical materials collections should be further studied as many libraries are adopting digital collections in an effort to meet the perceived changing desires of the population. A question to ask is does this relationship holds true beyond the period in question as we have moved into a more digital age, and what are the impacts of utilizing materials expenditures on the physical versus the digital collections in terms of foot traffic, program attendance or otherwise.

There are two notable limitations to the scope of results and further application for this study. As mentioned previously, many entities still calculate program attendance and annual visitors with manual tallies or estimations. This can bias the results and only a true survey of Ohio libraries that determines the data collection method could estimate this bias. I believe the lower R-squared value and overall significance for the regression models with these outcome variables reinforces this concern. With circulation, the numbers are almost exclusively based on automated data collection, and the higher r-squared value and overall significance points to a more reliable statistic and regression model. Another limitation to this paper is the uniqueness of funding for

Ohio libraries. With such a large percentage of funding coming directly from the State, the impact of having an operating levy would be hard to estimate for other states based on Ohio specific research. A project using IMLS data for all states might yield more definitive results for the United States in aggregate or for other individual states.

Reliable data collection is necessary for reliable results. This paper can serve as indication to libraries in Ohio that their data collection matters and can yield actionable results. This analysis can better inform administrators and trustees of the impact of operating levies on their libraries core performance indicators. This analysis can also serve as a reminder to legislators of the importance of retaining the language in Ohio Revised Code 5705.23 which provides libraries the authority to take levy issues to the ballot box. While this paper provides insight into how levies impact library success, it also highlights the importance of the guaranteed source of income that is the PLF. The PLF was significant at the 1% level in every model. The PLF is what sets Ohio apart from other states in terms of library funding. Further work is also necessary to see how levies directly impact the service areas with job creation, either through direct hiring or training offered through libraries. Voter supported levies are a good faith measure by the community and it is important that public libraries take the time to understand their impact and work toward the optimization of all funds and resources.

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Appendix A:

Parallel Trend Control Group and Test group

Regressors	Circ. Per Cap.	Attend. Per Cap.	Visits Per Cap.	Circ. Per Cap.	Attend. Per Cap.	Visits Per Cap.
Intercept	9.6665***	0.1121***	5.6307***	-1.8936**	-0.0979**	-2.4635**
	(1.06)	(0.04)	(0.69)	(0.82)	(0.04)	(1.12)
Has a Levy	-3.0152	0.0430	-2.3820	-2.4857**	0.0532	-1.9664
	(2.24)	(0.07)	(2.11)	(1.09)	(0.06)	(1.45)
Has a Levy*Year	0.4189	0.0413	-0.4123	0.5020	0.0450	-0.4112
	(1.47)	(0.05)	(1.36)	(0.70)	(0.04)	(0.93)
Has a Levy*Year^2	0.0769	-0.0085	0.2367	-0.0271	-0.0110	0.1782
	(0.27)	(0.01)	(0.25)	(0.13)	(0.01)	(0.17)
Has a Levy*Year*	-0.0064	0.0004	-0.0164	0.0029	0.0006	-0.0106
	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)
Items Per Capita				0.1956	0.0159***	-0.2689
				(0.17)	(0.00)	(0.19)
PLF Per Capita				0.3575***	0.0052***	0.2946***
				(0.04)	(0.00)	(0.05)
High Labor Exp.				0.4339*	-0.0003	0.6560**
				(0.24)	(0.02)	(0.26)
High Materials Exp				0.1132	-0.0007	-0.0539
				(0.29)	(0.02)	(0.34)
ID OH0003	-0.3090	1.4834***	4.4871***	-2.4782***	1.4149***	4.1332***
	(1.30)	(0.22)	(0.70)	(0.72)	(0.22)	(0.84)
ID OH0004	-8.4334***	-0.0739	-3.1189***	-4.8425***	-0.0592	1.1788
	(1.31)	(0.08)	(1.05)	(1.41)	(0.06)	(1.16)
ID OH0006	-0.1712	-0.0801**	-1.4008	1.4442	-0.0415	-0.4572
	(1.54)	(0.04)	(0.88)	(0.95)	(0.04)	(0.53)
ID OH0007	9.7968***	0.0963*	0.7964	7.0407***	0.0430	-0.9930
	(3.24)	(0.06)	(1.00)	(1.15)	(0.05)	(1.04)
ID OH0009	10.0890***	0.3032***	8.5535***	8.7357***	0.2751***	7.6809***
	(0.85)	(0.03)	(0.45)	(0.54)	(0.03)	(0.41)
ID OH0012	-2.8207**	0.0874	-0.2895	-7.2040***	0.0092	-3.2887***
	(1.41)	(0.06)	(1.08)	(1.19)	(0.04)	(0.86)
ID OH0013	-1.4107	0.6274**	1.1940	-1.4379**	0.6240***	1.2763
	(2.56)	(0.26)	(1.37)	(0.65)	(0.21)	(0.89)
ID OH0015	16.1490***	0.8908***	6.8928***	15.6729***	0.8621***	7.1630***
	(1.12)	(0.29)	(0.76)	(1.05)	(0.29)	(0.69)
ID OH0016	-0.4462	-0.1174***	-0.5830	-2.8902***	-0.1549***	-2.5832***
	(1.63)	(0.04)	(0.62)	(0.85)	(0.03)	(0.78)
ID OH0017	3.8180***	0.4051***	-0.1134	-1.2518	0.2952***	-2.9704***
	(1.20)	(0.06)	(0.70)	(1.14)	(0.05)	(1.09)
ID OH0018	-5.0010***	0.0235	-3.2029***	-2.9097***	0.0735*	-2.0216***
	(1.20)	(0.04)	(0.51)	(0.67)	(0.04)	(0.52)
ID OH0019	-5.5656***	-0.0234	-0.4636	-8.2904***	-0.0849**	-1.7949***
	(1.00)	(0.04)	(0.64)	(0.68)	(0.04)	(0.60)
ID OH0020	-8.0459***	-0.1756***	-5.7084***	-1.8387	-0.1002**	0.1239
	(1.53)	(0.04)	(0.69)	(1.29)	(0.04)	(1.56)

ID OH0021	-2.7086***	0.2262***	5.8746***	-2.9787***	0.2260***	5.6717***
	(0.96)	(0.04)	(0.74)	(0.52)	(0.04)	(0.74)
ID OH0022	0.9816	0.2121***	1.4375**	-1.0381	0.1749***	0.1777
	(0.89)	(0.03)	(0.56)	(0.89)	(0.03)	(0.71)
ID OH0023	6.2156***	0.2352**	4.3691***	-5.9310**	-0.0731	-1.1623
	(1.50)	(0.10)	(0.75)	(2.46)	(0.06)	(2.05)
ID OH0025	-2.6246**	-0.0609	-2.4157**	-8.1124***	-0.1597***	-6.3144***
	(1.08)	(0.05)	(1.10)	(0.87)	(0.06)	(1.26)
ID OH0026	-4.6036***	-0.0742	-2.1916***	-4.4546***	-0.1172***	-0.3664
	(1.41)	(0.05)	(0.74)	(1.08)	(0.04)	(1.11)
ID OH0027	0.3597	0.0050	4.0960***	-2.2540***	-0.0499***	2.6065***
	(1.49)	(0.02)	(0.81)	(0.78)	(0.02)	(0.97)
ID OH0028	3.6042***	-0.0123	-3.3904***	-4.2606***	-0.2014***	-7.2835***
	(1.27)	(0.04)	(0.71)	(1.05)	(0.05)	(0.94)
ID OH0030	-0.3198	-0.0947**	-1.9173***	-4.6091***	-0.2010***	-3.8719***
	(1.46)	(0.04)	(0.69)	(1.57)	(0.05)	(1.44)
ID OH0032	1.6988	0.1054**	0.2158	1.7761**	0.1054**	0.2742
	(1.34)	(0.05)	(0.65)	(0.75)	(0.05)	(0.47)
ID OH0033	-7.2010***	-0.1063**	-2.6168***	-4.1861***	-0.0432	-0.6263
	(1.22)	(0.04)	(0.80)	(0.65)	(0.03)	(0.79)
ID OH0034	9.8322***	0.0437*	7.2036***	3.7326***	-0.0954***	3.7870***
	(1.13)	(0.02)	(0.46)	(0.90)	(0.03)	(0.62)
ID OH0036	-3.8577***	-0.1801***	-2.7799***	-1.8247***	-0.1432***	-1.1259*
	(1.05)	(0.04)	(0.71)	(0.68)	(0.04)	(0.68)
ID OH0038	5.9374***	0.4215***	2.2621**	-2.6033*	0.2808***	-4.0665**
	(1.47)	(0.03)	(1.02)	(1.36)	(0.03)	(1.58)
ID OH0039	1.4367	0.3635***	-1.5971**	2.3358***	0.3884***	-1.2567**
	(1.31)	(0.09)	(0.71)	(0.41)	(0.10)	(0.62)
ID OH0040	-5.5833***	0.2344***	-1.6838*	-7.1220***	0.2039***	-2.6540**
	(1.07)	(0.06)	(0.92)	(0.89)	(0.07)	(1.22)
ID OH0042	-2.5571**	0.4073***	-1.8441**	1.8734***	0.4955***	1.1555
	(1.12)	(0.05)	(0.77)	(0.69)	(0.05)	(0.75)
ID OH0044	19.8930***	0.2877**	12.9082***	-5.8855**	-0.1592**	-5.8387*
	(7.25)	(0.12)	(4.73)	(2.52)	(0.07)	(3.30)
ID OH0045	26.0021***	-0.1519***	6.1924***	20.0542***	-0.2836***	2.8361***
	(0.92)	(0.03)	(0.45)	(1.03)	(0.04)	(0.75)
ID OH0046	10.9706***	0.0365	1.1574**	9.1810***	-0.0149	0.5891
	(0.98)	(0.03)	(0.56)	(0.51)	(0.03)	(0.68)
ID OH0047	-2.7233**	0.3086***	-1.5702**	0.5763	0.3758***	0.5786
	(1.15)	(0.05)	(0.63)	(0.55)	(0.04)	(0.61)
ID OH0050	-5.2322***	-0.0176	-2.6536***	-4.0481***	0.0181	-2.1176***
	(1.01)	(0.04)	(0.65)	(0.57)	(0.04)	(0.60)
ID OH0051	-2.0672*	-0.0600***	1.0877**	-8.6783***	-0.1986***	-2.8270***
	(1.06)	(0.02)	(0.53)	(0.81)	(0.02)	(0.59)
ID OH0052	11.8627***	0.1323***	2.6905***	8.3887***	0.0629*	0.4795
	(1.09)	(0.03)	(0.58)	(0.66)	(0.03)	(1.03)
ID OH0053	14.3311***	0.1253*	8.6418***	9.3664***	0.0363	5.0947***
	(1.08)	(0.07)	(0.51)	(0.88)	(0.07)	(0.67)

ID OH0054	-5.6525***	-0.0590***	-3.9956***	-2.0534***	0.0095	-1.4890**
	(1.10)	(0.02)	(0.96)	(0.52)	(0.03)	(0.72)
ID OH0055	8.0008***	0.5028***	1.2215	3.9988***	0.3729***	0.3677
	(1.51)	(0.07)	(0.84)	(1.11)	(0.06)	(1.02)
ID OH0056	18.8980***	0.2095***	9.3207***	7.4563***	0.0115	1.1339
	(4.78)	(0.07)	(1.96)	(2.00)	(0.04)	(1.48)
ID OH0057	8.1797***	0.0529**	4.5626***	8.9622***	0.0707***	5.0299***
	(1.40)	(0.02)	(0.91)	(0.43)	(0.02)	(0.39)
ID OH0058	-2.6807**	0.1124***	4.7329***	-3.4629***	0.1091***	3.8514***
	(1.25)	(0.04)	(0.72)	(1.02)	(0.04)	(0.68)
ID OH0059	2.0617**	-0.0199	-2.1092***	1.8208**	-0.0112	-2.6737***
	(0.96)	(0.03)	(0.72)	(0.71)	(0.04)	(0.66)
ID OH0060	12.7145***	0.0970	-1.9352***	9.1376***	-0.0141	-2.7628***
	(1.90)	(0.07)	(0.69)	(1.37)	(0.07)	(0.95)
ID OH0061	7.4192***	0.3292***	10.5873***	-3.3456***	0.1146**	3.8307***
	(2.73)	(0.07)	(2.59)	(0.90)	(0.05)	(1.40)
ID OH0062	2.3884**	0.0642	-1.0221	2.5266***	0.0750	-1.0766
	(1.07)	(0.05)	(0.75)	(0.78)	(0.05)	(0.98)
ID OH0063	1.1312	-0.0563*	0.4086	-0.4066	-0.0805***	-0.7364
	(1.30)	(0.03)	(0.76)	(0.55)	(0.03)	(0.47)
ID OH0064	-5.7956***	-0.0883**	-2.8600**	-5.8505***	-0.0785**	-3.2192***
	(1.06)	(0.04)	(1.12)	(0.61)	(0.04)	(0.87)
ID OH0066	8.7403***	0.0419*	-1.4747	5.8537***	-0.0471	-2.1925*
	(1.05)	(0.02)	(1.41)	(0.86)	(0.03)	(1.19)
ID OH0067	0.0515	0.1458***	0.6111	0.5999	0.1282***	2.0513**
	(1.79)	(0.05)	(1.49)	(0.77)	(0.04)	(0.92)
ID OH0068	3.3668**	0.1415***	-1.0344	3.9890***	0.1528***	-0.5152
	(1.38)	(0.05)	(1.03)	(1.43)	(0.05)	(1.21)
ID OH0069	1.1559	-0.0748***	7.7997***	-0.4226	-0.1488***	8.1852***
	(1.00)	(0.03)	(0.77)	(0.80)	(0.04)	(1.16)
ID OH0071	-7.3741***	-0.1108***	-3.3460***	-3.6239***	-0.0516	-0.2088
	(1.00)	(0.04)	(0.69)	(0.80)	(0.04)	(0.87)
ID OH0072	1.6227*	0.2982***	1.4182	-3.7359***	0.1894**	-2.1134
	(0.97)	(0.08)	(1.44)	(0.71)	(0.09)	(1.58)
ID OH0074	5.5244***	0.2223***	9.6261***	-3.5944**	0.0622	3.1514**
	(1.92)	(0.07)	(2.50)	(1.52)	(0.05)	(1.51)
ID OH0077	-0.7214	-0.0182	-0.9903	-1.3372***	-0.0424	-0.9437**
	(1.01)	(0.03)	(0.62)	(0.48)	(0.03)	(0.46)
ID OH0078	9.4219***	-0.0888***	3.9809***	7.4133***	-0.1306***	2.8366***
	(0.81)	(0.01)	(1.06)	(0.82)	(0.02)	(0.76)
ID OH0079	5.4745**	0.5103***	3.3255**	-4.8052***	0.2973*	-2.9684**
	(2.42)	(0.18)	(1.33)	(0.90)	(0.16)	(1.27)
ID OH0083	5.3878***	0.1826***	-0.5053	8.4383***	0.2023***	3.0467***
	(1.17)	(0.05)	(0.84)	(0.99)	(0.07)	(1.07)
ID OH0087	4.2803***	0.0252	7.8154***	0.9079	-0.0628	6.5248***
	(1.01)	(0.05)	(1.48)	(0.66)	(0.05)	(1.39)
ID OH0088	-3.0241**	-0.0713***	-2.0704**	-2.9670***	-0.0584**	-2.3619***
	(1.49)	(0.03)	(0.82)	(1.04)	(0.03)	(0.63)

ID OH0089	-3.1058**	0.1018	-3.2695***	-0.0963	0.1671***	-1.4487**
	(1.24)	(0.06)	(0.75)	(0.56)	(0.06)	(0.62)
ID OH0091	5.1661***	0.1161***	1.2901	-6.6801***	-0.0821*	-7.6103***
	(1.72)	(0.04)	(1.43)	(1.54)	(0.05)	(2.64)
ID OH0093	-6.8157***	0.3787***	-2.9147***	-2.4152**	0.4415***	0.8617
	(1.42)	(0.10)	(0.94)	(1.01)	(0.09)	(1.02)
ID OH0095	72.2130***	1.0122***	77.2133***	25.1893***	0.1656	43.7602***
	(18.00)	(0.24)	(19.36)	(8.90)	(0.14)	(13.67)
ID OH0097	-5.9691***	-0.1578***	-2.3334***	-9.7043***	-0.3116***	-1.9353
	(1.38)	(0.03)	(0.77)	(1.88)	(0.08)	(1.43)
ID OH0101	0.8941	0.0769**	-1.7260***	2.2142***	0.1059***	-0.7847
	(0.96)	(0.04)	(0.65)	(0.80)	(0.04)	(0.65)
ID OH0102	-6.4975***	-0.0728	-3.5033***	-10.0375***	-0.2118***	-3.3218***
	(1.33)	(0.06)	(0.69)	(1.44)	(0.07)	(1.20)
ID OH0103	-6.6052***	0.0871	-3.3852***	-4.8275***	0.1089	-1.7153**
	(1.24)	(0.12)	(0.88)	(0.60)	(0.12)	(0.68)
ID OH0105	12.4815***	0.1173**	10.1996***	10.2482***	0.0612	9.0942***
	(1.24)	(0.05)	(2.90)	(1.15)	(0.05)	(3.09)
ID OH0106	0.6197	0.2020***	5.4655***	1.3298***	0.2005***	6.3729***
	(0.91)	(0.04)	(0.77)	(0.48)	(0.03)	(0.73)
ID OH0107	-3.0062***	-0.0718**	-1.4877**	-2.9013***	-0.0518	-1.9934***
	(0.98)	(0.04)	(0.65)	(0.68)	(0.04)	(0.66)
ID OH0108	-3.7842***	0.0383	0.0313	-2.0190***	0.0822*	0.8115
	(1.22)	(0.06)	(0.73)	(0.57)	(0.05)	(0.58)
ID OH0109	7.6301***	0.1058**	5.1357**	0.3614	-0.0721	1.5714
	(2.27)	(0.05)	(2.56)	(0.98)	(0.04)	(2.20)
ID OH0111	4.2802***	0.0085	-1.1332*	-1.1892	-0.0985	-4.5467***
	(1.18)	(0.05)	(0.61)	(0.85)	(0.06)	(1.07)
ID OH0112	-3.5670**	0.1870*	-2.2253***	-2.6433***	0.1749*	-0.6295
	(1.51)	(0.11)	(0.85)	(0.74)	(0.10)	(0.76)
ID OH0114	5.4990***	0.3249***	0.8270	-1.6928	0.1808***	-3.6740***
	(1.43)	(0.06)	(0.70)	(1.77)	(0.06)	(0.90)
ID OH0115	17.3115***	0.6625***	4.2209***	14.7001***	0.5926***	3.1121**
	(1.53)	(0.12)	(1.52)	(1.20)	(0.12)	(1.48)
ID OH0116	-1.0820	-0.0385	-2.1648***	1.2912***	0.0098	-0.4919
	(1.06)	(0.05)	(0.55)	(0.48)	(0.04)	(0.65)
ID OH0118	0.9180	0.0613	-3.2406***	-4.6294***	-0.0317	-7.1956***
	(1.15)	(0.04)	(0.86)	(0.88)	(0.05)	(1.11)
ID OH0121	-2.7712***	-0.1071***	-3.3686***	-4.0534***	-0.1159***	-4.6965***
	(1.05)	(0.04)	(0.81)	(0.59)	(0.04)	(0.82)
ID OH0122	-7.8146***	-0.1272***	-4.6621***	-2.1289***	-0.0257	-0.4667
	(1.64)	(0.05)	(1.01)	(0.81)	(0.03)	(0.92)
ID OH0123	1.8295*	-0.0035	1.8803*	2.6811***	-0.0080	3.3565***
	(1.01)	(0.04)	(1.04)	(0.81)	(0.04)	(1.26)
ID OH0124	-1.9771**	0.1160**	-1.3896*	-2.9018***	0.1165**	-2.5255***
	(0.79)	(0.05)	(0.75)	(0.48)	(0.05)	(0.56)
ID OH0125	-1.1612	-0.1284***	-0.4971	0.4163	-0.1186***	1.0699**
	(1.04)	(0.03)	(0.73)	(0.49)	(0.03)	(0.53)

ID OH0126	1.8675	0.5048***	11.1952***	-7.4699***	0.3572***	3.8941
	(1.80)	(0.10)	(2.62)	(1.35)	(0.08)	(2.48)
ID OH0128	8.6071***	0.0322	0.3473	6.8904***	-0.0175	-0.0776
	(1.35)	(0.04)	(0.68)	(1.42)	(0.03)	(0.63)
ID OH0130	3.8965***	0.1285***	0.7125	2.9802***	0.1112***	0.0658
	(1.08)	(0.02)	(0.52)	(0.51)	(0.03)	(0.61)
ID OH0132	-3.8168***	-0.1127***	-2.5797***	-3.7938***	-0.1080***	-2.6463***
	(1.45)	(0.03)	(0.74)	(0.89)	(0.03)	(0.58)
ID OH0133	-3.3526***	0.0263	-1.1456	-2.8036***	0.0096	0.3417
	(0.98)	(0.04)	(0.72)	(0.98)	(0.04)	(1.03)
ID OH0134	-2.1225*	0.1692***	-0.1700	2.5742***	0.2512***	3.3239***
	(1.26)	(0.06)	(0.84)	(0.74)	(0.05)	(1.14)
ID OH0136	9.6937***	1.0599***	0.4207	5.2621***	0.9822***	-2.7128***
	(1.73)	(0.06)	(0.79)	(1.51)	(0.06)	(0.90)
ID OH0137	-5.9908***	-0.2087***	-4.5728***	-4.6282***	-0.1946***	-3.2469***
	(1.56)	(0.02)	(0.82)	(0.99)	(0.02)	(0.55)
ID OH0138	1.6313	0.1539***	1.5176*	-7.5528***	-0.0508	-3.6849***
	(1.24)	(0.05)	(0.80)	(1.36)	(0.05)	(1.21)
ID OH0141	5.1021***	0.2406***	0.5119	7.7263***	0.2748***	2.9494***
	(1.24)	(0.06)	(0.88)	(0.82)	(0.04)	(0.80)
ID OH0142	3.2414*	-0.0931***	1.1406	4.4244***	-0.0751***	2.1095*
	(1.69)	(0.03)	(1.28)	(0.87)	(0.02)	(1.14)
ID OH0143	-3.8206**	0.5170***	-2.2763***	-6.5954***	0.4554***	-3.7381***
	(1.51)	(0.07)	(0.70)	(1.09)	(0.07)	(0.59)
ID OH0145	5.6613***	0.3294***	-1.5594**	4.3393***	0.2488**	-0.5880
	(1.15)	(0.13)	(0.77)	(1.24)	(0.13)	(1.24)
ID OH0146	2.7286***	0.0832**	-1.6006	4.7536***	0.1238***	-0.2100
	(1.03)	(0.04)	(1.03)	(0.89)	(0.04)	(0.77)
ID OH0147	5.6329***	1.6099***	1.7482*	-1.4420	1.4857***	-3.2901***
	(1.58)	(0.38)	(0.98)	(1.20)	(0.36)	(1.15)
ID OH0148	-0.3571	0.0129	-1.9661**	1.1391	0.0044	0.3571
	(1.37)	(0.05)	(0.86)	(0.78)	(0.04)	(0.96)
ID OH0149	-0.9385	0.0085	-1.0258*	-3.6000***	-0.0652	-1.8734***
	(1.12)	(0.06)	(0.62)	(0.79)	(0.06)	(0.65)
ID OH0151	-5.7379***	-0.0474	-2.9774***	-2.4788***	0.0100	-0.4900
	(1.08)	(0.03)	(0.66)	(0.58)	(0.03)	(0.71)
ID OH0152	-8.3679***	-0.1359***	-4.1937***	-4.8070***	-0.0845**	-1.0766
	(1.04)	(0.04)	(0.70)	(1.01)	(0.03)	(1.06)
ID OH0153	-0.4644	-0.1052***	3.0670***	1.4251*	-0.0764***	4.5310***
	(1.56)	(0.03)	(1.11)	(0.85)	(0.03)	(0.86)
ID OH0154	-2.8480**	1.4228***	-0.6151	-3.1068***	1.3728***	0.6830
	(1.25)	(0.04)	(1.03)	(0.81)	(0.04)	(0.99)
ID OH0155	-2.7720*	-0.2283***	1.2025**	-3.7345**	-0.3138***	2.8742**
	(1.57)	(0.02)	(0.53)	(1.47)	(0.04)	(1.27)
ID OH0156	-2.8484***	0.0849**	-0.6461	-2.3005***	0.0952***	-0.1919
	(1.05)	(0.04)	(0.64)	(0.52)	(0.04)	(0.68)
ID OH0157	15.5996***	0.8061***	0.5511	-3.9185	0.4493***	-13.0569***
	(4.18)	(0.11)	(0.95)	(3.06)	(0.08)	(2.21)

ID OH0158	-0.6289	-0.0218	-2.4498**	0.4318	-0.0054	-1.5650*
	(1.32)	(0.03)	(1.18)	(0.61)	(0.03)	(0.85)
ID OH0159	-2.1748*	0.1380**	-1.4646	-3.4062***	0.0953	-1.5436
	(1.14)	(0.07)	(1.15)	(0.74)	(0.07)	(1.07)
ID OH0161	0.0092	0.0786***	-0.2702	1.4312***	0.1159***	0.2029
	(1.24)	(0.01)	(0.76)	(0.46)	(0.02)	(0.39)
ID OH0162	1.6083	-0.1282***	-3.4276***	3.6680	-0.1468***	0.0311
	(3.89)	(0.05)	(0.80)	(2.56)	(0.04)	(1.26)
ID OH0164	9.3945***	-0.0646***	-1.2488	6.2344***	-0.1430***	-2.6735***
	(1.03)	(0.02)	(1.10)	(0.86)	(0.02)	(0.75)
ID OH0165	1.6392	0.0275	0.1167	-4.2143***	-0.0512	-5.0178***
	(1.81)	(0.05)	(0.59)	(1.17)	(0.04)	(1.45)
ID OH0168	23.8971***	-0.0514**	4.3017***	18.0881***	-0.1409***	-0.2168
	(1.56)	(0.02)	(0.92)	(0.94)	(0.03)	(1.33)
ID OH0169	2.0467	0.0706***	6.1574***	0.4106	0.0388	4.9578***
	(1.79)	(0.02)	(0.92)	(1.49)	(0.02)	(0.87)
ID OH0170	-1.4048	-0.0289	0.9534	-0.4595	-0.0165	1.9695**
	(1.08)	(0.04)	(0.84)	(0.62)	(0.04)	(0.98)
ID OH0171	-5.6033***	-0.0570	-1.4088**	-5.6723***	-0.0605	-1.2866
	(1.02)	(0.04)	(0.65)	(0.66)	(0.04)	(0.79)
ID OH0172	35.2106***	0.3108***	13.4531***	4.8006	-0.2411***	-7.9635*
	(7.45)	(0.09)	(2.94)	(4.20)	(0.07)	(4.26)
ID OH0173	12.3448***	0.2060***	4.8908***	7.4077***	0.0209	4.6978***
	(2.36)	(0.04)	(1.00)	(1.52)	(0.05)	(1.47)
ID OH0174	17.2792***	0.7740***	6.6318***	13.0846***	0.6909***	3.9652***
	(2.52)	(0.07)	(0.89)	(1.78)	(0.06)	(0.98)
ID OH0175	13.8638***	0.0036	14.1399***	7.5368***	-0.2281***	13.7229***
	(2.96)	(0.07)	(2.72)	(2.56)	(0.07)	(3.41)
ID OH0176	-4.8994***	-0.0074	-3.3372**	-4.7768***	-0.0004	-3.4479***
	(1.06)	(0.02)	(1.38)	(0.45)	(0.02)	(1.08)
ID OH0177	1.7845	-0.0583***	0.6290	2.1252***	-0.0437	0.7259*
	(1.67)	(0.02)	(0.86)	(0.71)	(0.03)	(0.39)
ID OH0178	-1.4700	-0.0682*	-4.3993***	-0.1982	-0.0465	-3.3105***
	(0.99)	(0.04)	(0.61)	(0.60)	(0.04)	(0.72)
ID OH0180	-2.0755**	0.4970***	-2.1796***	-4.4823***	0.4356***	-3.1437***
	(1.04)	(0.06)	(0.68)	(0.57)	(0.06)	(0.54)
ID OH0181	5.2914**	0.1651**	0.5993	-13.7188***	-0.1939***	-12.4052***
	(2.57)	(0.07)	(0.80)	(3.00)	(0.05)	(3.53)
ID OH0182	19.3736***	0.5414***	1.3996	9.4350***	0.3373***	-4.9805**
	(5.57)	(0.15)	(0.91)	(2.37)	(0.09)	(2.36)
ID OH0183	11.2172***	0.1441***	7.6122***	5.7963***	0.0584	3.4636***
	(1.45)	(0.04)	(1.27)	(0.84)	(0.04)	(1.07)
ID OH0186	2.6894**	0.0613	-0.3343	0.3628	0.0021	-1.2861*
	(1.10)	(0.05)	(0.67)	(0.59)	(0.04)	(0.78)
ID OH0190	-4.2164***	-0.0116	-0.1679	-6.8413***	-0.0526	-2.1513***
	(0.98)	(0.04)	(0.72)	(0.78)	(0.04)	(0.70)
ID OH0191	-3.0532**	-0.0636	1.1337	-3.7412**	-0.1198*	2.2651**
	(1.32)	(0.05)	(0.92)	(1.49)	(0.06)	(1.07)

ID OH0193	5.3967**	0.8827***	7.3003***	5.2605***	0.8482***	8.4770***
	(2.69)	(0.16)	(2.62)	(0.78)	(0.13)	(1.42)
ID OH0195	26.1189***	0.4489***	8.0991***	23.2262***	0.3762***	6.7391***
	(1.06)	(0.08)	(1.12)	(0.97)	(0.08)	(0.87)
ID OH0196	1.9853**	0.4276***	-1.2136*	-0.5022	0.3748***	-2.6821***
	(0.82)	(0.07)	(0.63)	(0.65)	(0.06)	(0.53)
ID OH0199	2.4441	-0.0108	4.5576***	-0.5314	-0.0684**	2.5880***
	(1.88)	(0.04)	(1.36)	(0.98)	(0.03)	(0.97)
ID OH0200	18.1542***	0.3742***	10.7773***	12.4488***	0.2509***	7.4301***
	(1.19)	(0.07)	(1.90)	(0.97)	(0.07)	(2.01)
ID OH0201	-7.9158***	0.1175***	-1.6453*	-7.4840***	0.1169***	-0.8934
	(1.38)	(0.04)	(0.86)	(0.68)	(0.04)	(0.64)
ID OH0202	-2.7925**	0.2973***	0.1956	-3.2582***	0.2837***	0.2474
	(1.15)	(0.04)	(0.69)	(0.57)	(0.04)	(0.62)
ID OH0203	-3.7829***	0.0475	-1.5597	-3.4065***	0.0632	-1.3828
	(1.02)	(0.03)	(0.99)	(0.56)	(0.04)	(0.85)
ID OH0205	-0.8544	0.2763***	-2.3087***	-0.9935	0.2757***	-2.4251***
	(1.18)	(0.05)	(0.85)	(0.61)	(0.04)	(0.62)
ID OH0207	-4.1113***	-0.0388	2.5767***	-0.9145	0.0086	5.2158***
	(1.01)	(0.03)	(0.70)	(0.67)	(0.04)	(0.99)
ID OH0209	7.6105***	0.3891***	0.8212	6.6392***	0.3881***	-0.3651
	(1.32)	(0.04)	(0.67)	(0.63)	(0.04)	(0.75)
ID OH0211	0.2624	0.3617***	-1.4924**	-1.1381	0.3505***	-3.0112***
	(1.48)	(0.06)	(0.72)	(0.91)	(0.05)	(0.75)
ID OH0215	1.4440	-0.0818***	1.4229*	-0.2402	-0.1252***	0.5635
	(1.33)	(0.03)	(0.75)	(0.73)	(0.03)	(0.52)
ID OH0217	23.1892***	0.5794***	9.4362***	17.1688***	0.4573***	5.7466***
	(2.54)	(0.07)	(1.01)	(1.79)	(0.07)	(1.39)
ID OH0218	26.6432***	0.1978***	20.4227***	10.6904***	-0.1359***	10.5381***
	(4.36)	(0.05)	(3.08)	(1.69)	(0.04)	(1.73)
ID OH0220	-0.2515	-0.0684**	3.8000***	0.6548	-0.0599**	4.7978***
	(1.47)	(0.03)	(0.83)	(0.59)	(0.03)	(1.19)
ID OH0221	4.8738***	0.6367***	5.6195**	6.3219***	0.6335***	7.8024***
	(0.92)	(0.07)	(2.53)	(0.72)	(0.08)	(2.25)
ID OH0222	4.9509***	0.1112***	0.8218	5.3941***	0.1130***	1.4924***
	(1.10)	(0.03)	(0.60)	(0.80)	(0.03)	(0.57)
ID OH0223	2.7878	0.1776*	-0.7693	0.9480	0.1492**	-2.1144**
	(2.24)	(0.09)	(0.64)	(1.06)	(0.07)	(1.03)
ID OH0224	15.5460***	0.1856**	2.7691***	15.0431***	0.1514*	3.2029***
	(1.67)	(0.08)	(0.51)	(1.53)	(0.08)	(0.57)
ID OH0225	-3.4084***	0.2161***	-1.7887**	-3.4452***	0.2060***	-1.2861**
	(1.19)	(0.04)	(0.75)	(0.64)	(0.05)	(0.62)
ID OH0226	-3.6309**	-0.1917***	-0.5867	-2.2058***	-0.1549***	-0.0026
	(1.81)	(0.03)	(1.11)	(0.67)	(0.02)	(0.43)
ID OH0227	-4.4880***	0.1566***	-3.1078***	-3.8138***	0.1947***	-3.5099***
	(1.14)	(0.03)	(0.67)	(0.79)	(0.04)	(0.79)
ID OH0228	-0.1235	0.3509*	0.4182	-0.9962*	0.3289*	-0.0216
	(1.27)	(0.19)	(1.03)	(0.52)	(0.18)	(0.71)

ID OH0230	1.0610	0.1267**	-2.2560***	-3.1884***	0.0309	-4.5414***
	(1.02)	(0.06)	(0.87)	(0.64)	(0.06)	(1.12)
ID OH0232	5.0783	0.4318***	5.9321**	-10.4142***	0.1333**	-4.3945**
	(4.01)	(0.07)	(2.54)	(1.77)	(0.07)	(1.89)
ID OH0233	-5.2664***	0.2428***	-1.0671	-6.2396***	0.2440***	-2.4443**
	(1.14)	(0.05)	(0.94)	(0.83)	(0.06)	(1.03)
ID OH0234	-5.1109***	-0.1092***	-2.0381***	-11.5356***	-0.2166***	-6.6639***
	(1.01)	(0.04)	(0.74)	(1.57)	(0.06)	(1.29)
ID OH0237	6.7438***	0.0417	1.1302	6.4789***	0.0372	1.0629
	(1.01)	(0.03)	(1.08)	(0.64)	(0.04)	(1.01)
ID OH0238	22.9489***	0.1443***	5.4987***	21.2667***	0.0939**	5.0446***
	(2.13)	(0.05)	(0.86)	(1.90)	(0.05)	(0.70)
ID OH0239	-2.5927**	0.0740**	-3.4685***	-4.3574***	0.0276	-4.0651***
	(1.01)	(0.04)	(1.30)	(0.67)	(0.04)	(1.29)
ID OH0240	14.8669***	0.8670***	9.8406***	8.8544***	0.7469***	6.0275***
	(1.49)	(0.12)	(0.71)	(0.63)	(0.10)	(0.72)
ID OH0241	0.9777	0.0380	1.0016	-3.8296***	-0.0474	-2.5012***
	(2.46)	(0.03)	(1.25)	(0.80)	(0.06)	(0.78)
ID OH0242	4.1884***	-0.0509*	2.0361***	5.4927***	-0.0318	3.2590***
	(0.82)	(0.03)	(0.68)	(0.67)	(0.02)	(0.58)
ID OH0244	-2.2534*	-0.1399***	-2.9255***	-2.2646***	-0.1419***	-2.6790***
	(1.20)	(0.04)	(0.83)	(0.68)	(0.03)	(0.65)
ID OH0245	0.5278	-0.0379**	-0.8412	0.6867	-0.0291	-0.8468
	(1.12)	(0.02)	(0.53)	(0.58)	(0.03)	(0.55)
ID OH0246	15.9393***	0.1905***	15.3155***	13.4785***	0.1122***	14.8141***
	(1.45)	(0.03)	(0.75)	(1.52)	(0.03)	(0.97)
ID OH0247	2.3205**	-0.1369***	1.7415**	2.8619***	-0.1201***	1.9835***
	(1.08)	(0.02)	(0.74)	(0.49)	(0.02)	(0.58)
ID OH0248	-5.1593***	-0.0733***	-2.3283***	-5.7474***	-0.0645***	-3.4631***
	(1.30)	(0.02)	(0.68)	(0.73)	(0.02)	(0.54)
ID OH0251	158.4298***	4.4040***	36.1668***	-50.2935***	-0.2063	-84.1276***
	(2.79)	(0.27)	(0.87)	(11.29)	(0.47)	(14.57)
YRCODE 2	-0.1268	0.0044	-0.0194	-1.2333***	-0.0143	-0.8524*
	(0.81)	(0.02)	(0.69)	(0.42)	(0.02)	(0.51)
YRCODE 3	-0.1206	0.0317	0.1774	-2.2401***	-0.0026	-1.4602***
	(0.78)	(0.03)	(0.58)	(0.44)	(0.03)	(0.52)
YRCODE 4	0.5066	0.0681**	0.0273	-1.8903***	0.0290	-1.8250***
	(0.74)	(0.03)	(0.54)	(0.45)	(0.03)	(0.55)
YRCODE 5	2.1029***	0.0930***	0.8944*	0.1520	0.0569**	-0.4936
	(0.71)	(0.03)	(0.48)	(0.41)	(0.02)	(0.46)
YRCODE 6	2.0023***	0.0978***	0.6566	0.1757	0.0645***	-0.7047
	(0.69)	(0.03)	(0.47)	(0.43)	(0.02)	(0.47)
YRCODE 7	3.8827***	0.0916***	1.2988**	0.0531	0.0216	-1.4730**
	(0.73)	(0.03)	(0.56)	(0.54)	(0.02)	(0.63)
YRCODE 8	3.9955***	0.1259***	1.5035***	-0.3489	0.0442*	-1.5638**
	(0.74)	(0.03)	(0.58)	(0.57)	(0.03)	(0.69)
YRCODE 9	4.3766***	0.1640***	1.8451***	0.0025	0.0809**	-1.2301*
	(0.80)	(0.03)	(0.60)	(0.60)	(0.03)	(0.69)

YRCODE 10	4.7832***	0.2040***	2.4217***	-0.0221	0.1123***	-0.9388
	(0.94)	(0.03)	(0.63)	(0.55)	(0.03)	(0.73)
YRCODE 11	5.1522***	0.2450***	3.3323***	-0.0389	0.1427***	-0.2129
	(0.90)	(0.03)	(0.63)	(0.74)	(0.03)	(0.72)
Number of Observations	1,907	1,904	1,907	1,907	1,904	1,907
Adjusted R-Square	0.7542	0.6966	0.6026	0.9181	0.7572	0.7774
Overall Significance	95.36***	37.09***	64.56***	143.33***	51.45***	46.72***

Note: Robust standard errors are in parenthesis. *, **, and ***indicate 10%, 5%, and 1% significance levels, respectively.

Appendix B:

2010: Post Recession Impacts						
Regressors	**Model7**	**Model8**	**Model9**	**Model10**	**Model11**	**Model12**
Intercept	8.5580***	0.1605***	4.2432***	-1.9538**	-0.0559**	-2.3237*
	(0.74)	(0.02)	(0.57)	(0.81)	(0.03)	(1.20)
Had a levy as of 2009	2.7145***	0.0444	0.6285	3.2975***	0.0612**	0.9239*
	(0.85)	(0.03)	(0.55)	(0.53)	(0.03)	(0.56)
Items Per Capita				0.1843	0.0207***	-0.4112**
				(0.17)	(0.00)	(0.21)
PLF Per Capita				0.3265***	0.0051***	0.2615***
				(0.04)	(0.00)	(0.05)
High Labor Exp				0.5479**	-0.0108	0.4251*
				(0.23)	(0.01)	(0.26)
High Material Exp				0.5046*	0.0029	0.1772
				(0.28)	(0.02)	(0.30)
ID OH0003	-1.0499	1.5160***	5.0532***	-3.2842***	1.4274***	5.0793***
	(1.10)	(0.19)	(0.33)	(0.83)	(0.19)	(0.70)
ID OH0004	-9.1385***	-0.1411**	-3.2256***	-5.2462***	-0.1189**	1.0158
	(1.09)	(0.06)	(0.95)	(1.05)	(0.05)	(1.27)
ID OH0006	-0.5975	-0.0147	-1.1933**	0.3954	0.0203	-0.7698
	(1.11)	(0.05)	(0.55)	(0.85)	(0.04)	(0.49)
ID OH0007	13.7491***	0.1140	2.6375**	9.0223***	0.0023	0.0056
	(3.82)	(0.07)	(1.16)	(1.61)	(0.04)	(0.79)
ID OH0009	8.7076***	0.2949***	7.3589***	7.6514***	0.2736***	6.9001***
	(1.23)	(0.04)	(0.90)	(0.95)	(0.04)	(0.84)
ID OH0012	-4.1200***	0.0081	-0.6319	-6.8938***	-0.0450	-2.3810***
	(1.17)	(0.05)	(0.90)	(0.92)	(0.03)	(0.47)
ID OH0013	2.2394	0.9764***	2.4123*	-0.4925	0.9055***	1.2258**
	(3.03)	(0.31)	(1.24)	(0.66)	(0.25)	(0.57)
ID OH0015	16.5287***	0.8429***	7.0292***	16.1325***	0.8069***	7.6853***
	(1.04)	(0.25)	(0.61)	(1.09)	(0.25)	(0.74)
ID OH0016	-1.1162	-0.1793***	-0.0229	-2.8272***	-0.1982***	-1.2419**
	(1.37)	(0.03)	(0.33)	(0.69)	(0.02)	(0.52)
ID OH0017	3.5346***	0.3750***	0.2291	-1.7391	0.2387***	-2.0955**

	(0.74)	(0.05)	(0.39)	(1.07)	(0.04)	(0.86)
ID OH0018	-5.3604***	0.0038	-3.3875***	-3.6046***	0.0629	-2.6468***
	(0.85)	(0.05)	(0.33)	(0.57)	(0.04)	(0.58)
ID OH0019	-5.6896***	-0.0864***	-0.4566	-8.4067***	-0.1611***	-1.3160***
	(0.58)	(0.03)	(0.46)	(0.52)	(0.03)	(0.51)
ID OH0020	-9.0479***	-0.2359***	-5.5344***	-3.0763***	-0.1567***	-0.1526
	(1.39)	(0.03)	(0.50)	(1.05)	(0.04)	(1.38)
ID OH0021	-3.0850***	0.1419***	6.8036***	-3.4698***	0.1417***	6.4881***
	(0.57)	(0.03)	(0.46)	(0.39)	(0.03)	(0.57)
ID OH0022	0.9229	0.2142***	1.2644***	-1.4404**	0.1650***	-0.0903
	(0.58)	(0.03)	(0.31)	(0.66)	(0.04)	(0.54)
ID OH0023	7.2228***	0.2963***	4.7420***	-5.4201***	-0.1003*	0.9563
	(1.43)	(0.08)	(0.73)	(1.86)	(0.05)	(1.62)
ID OH0025	-2.6684***	-0.0662	-2.4817***	-7.7370***	-0.1654***	-5.5712***
	(0.67)	(0.05)	(0.71)	(0.58)	(0.05)	(0.94)
ID OH0026	-5.5604***	-0.1441***	-2.0252***	-5.1181***	-0.1910***	0.2051
	(1.27)	(0.04)	(0.56)	(0.90)	(0.03)	(1.03)
ID OH0027	-0.1783	0.0258	4.7022***	-2.5532***	-0.0369**	3.6496***
	(1.11)	(0.02)	(0.76)	(0.63)	(0.02)	(1.06)
ID OH0028	3.8446***	-0.0910***	-2.9550***	-3.5651***	-0.3116***	-5.5688***
	(0.93)	(0.03)	(0.49)	(0.96)	(0.05)	(0.88)
ID OH0030	-0.6613	-0.1246***	-1.7110***	-5.1406***	-0.2663***	-3.0546***
	(0.91)	(0.03)	(0.38)	(1.28)	(0.04)	(1.11)
ID OH0032	1.2543	0.0399	0.5720	1.4197*	0.0446	0.8675**
	(1.13)	(0.04)	(0.48)	(0.82)	(0.04)	(0.43)
ID OH0033	-7.7996***	-0.1723***	-2.3687***	-4.9002***	-0.1007***	-0.9105*
	(1.02)	(0.03)	(0.60)	(0.39)	(0.02)	(0.55)
ID OH0034	11.1134***	0.0481*	7.5630***	5.4133***	-0.1066***	5.3299***
	(1.20)	(0.03)	(0.39)	(1.17)	(0.03)	(0.68)
ID OH0036	-4.6843***	-0.2438***	-2.7202***	-2.9123***	-0.2038***	-1.5125**
	(0.82)	(0.03)	(0.55)	(0.58)	(0.02)	(0.59)
ID OH0038	8.1106***	0.3939***	3.2462***	0.1948	0.2462***	-2.1078
	(1.63)	(0.03)	(0.69)	(1.72)	(0.03)	(1.30)
ID OH0039	1.0189	0.3661***	-1.7927***	1.8228***	0.4043***	-1.4866**
	(0.88)	(0.08)	(0.44)	(0.43)	(0.09)	(0.61)
ID OH0040	-6.1230***	0.1690***	-1.1461*	-7.3281***	0.1443***	-1.7271**
	(0.81)	(0.05)	(0.59)	(0.66)	(0.05)	(0.86)
ID OH0042	-2.9852***	0.3712***	-1.5416***	0.9021	0.4705***	0.8191
	(0.88)	(0.04)	(0.56)	(0.58)	(0.03)	(0.65)
ID OH0044	22.8261***	0.3015***	16.6092***	-3.9720*	-0.2390***	-0.5857
	(6.25)	(0.11)	(4.41)	(2.11)	(0.07)	(3.15)
ID OH0045	26.9128***	-0.1116***	6.5078***	21.4272***	-0.2484***	4.2636***
	(0.89)	(0.03)	(0.28)	(1.23)	(0.04)	(0.77)
ID OH0046	10.7361***	0.0344	1.0633***	8.9578***	-0.0210	1.0451
	(0.64)	(0.03)	(0.40)	(0.55)	(0.03)	(0.70)

ID OH0047	-3.6172***	0.2410***	-1.2264***	-0.5278	0.3222***	0.4552
	(1.00)	(0.04)	(0.39)	(0.57)	(0.02)	(0.46)
ID OH0050	-5.5829***	-0.0860***	-2.4246***	-4.5304***	-0.0390	-2.2065***
	(0.69)	(0.03)	(0.41)	(0.42)	(0.02)	(0.44)
ID OH0051	-1.8401***	-0.0536**	0.9760***	-8.1983***	-0.2127***	-2.0401***
	(0.60)	(0.02)	(0.24)	(0.58)	(0.03)	(0.54)
ID OH0052	12.9237***	0.1301***	3.0180***	9.7059***	0.0632*	1.4675
	(0.93)	(0.04)	(0.58)	(1.04)	(0.03)	(1.01)
ID OH0053	14.7742***	0.1256*	9.0026***	10.1167***	0.0394	6.1986***
	(0.78)	(0.07)	(0.41)	(0.84)	(0.06)	(0.71)
ID OH0054	-5.7979***	-0.0421*	-4.4890***	-2.6963***	0.0286	-2.6522***
	(0.69)	(0.02)	(0.70)	(0.49)	(0.02)	(0.69)
ID OH0055	7.8521***	0.5118***	2.1400***	3.7330***	0.3458***	2.2362**
	(0.95)	(0.07)	(0.50)	(1.03)	(0.06)	(1.05)
ID OH0056	21.5020***	0.1772***	10.7909***	8.8932***	-0.0771**	2.5851*
	(4.23)	(0.06)	(1.61)	(1.88)	(0.03)	(1.40)
ID OH0057	7.3029***	0.0551*	3.9148***	8.1899***	0.0870***	4.3446***
	(1.19)	(0.03)	(0.72)	(0.64)	(0.02)	(0.54)
ID OH0058	-3.4610***	0.0817***	4.3346***	-4.2588***	0.0849***	3.5749***
	(0.97)	(0.03)	(0.57)	(0.97)	(0.03)	(0.67)
ID OH0059	1.4867**	-0.0616***	-1.8510***	1.2854***	-0.0381	-2.3000***
	(0.60)	(0.02)	(0.50)	(0.40)	(0.03)	(0.50)
ID OH0060	13.2826***	0.0837	-1.6027***	9.6261***	-0.0571	-1.6283*
	(1.38)	(0.06)	(0.44)	(1.17)	(0.06)	(0.97)
ID OH0061	5.8663***	0.2362***	9.6777***	-2.9776***	0.0238	5.0306***
	(2.18)	(0.06)	(2.21)	(0.70)	(0.04)	(1.23)
ID OH0062	2.4834***	0.0090	-0.5693	2.8432***	0.0311	-0.4923
	(0.73)	(0.04)	(0.40)	(0.61)	(0.04)	(0.64)
ID OH0063	1.0840	-0.0416	0.3135	-0.4642	-0.0581**	-0.6114
	(0.82)	(0.03)	(0.41)	(0.41)	(0.03)	(0.43)
ID OH0064	-6.4583***	-0.1368***	-3.1235***	-6.3139***	-0.1158***	-3.5013***
	(0.78)	(0.03)	(1.06)	(0.47)	(0.02)	(0.94)
ID OH0066	8.6987***	0.0586**	-2.2125**	5.9959***	-0.0441*	-2.3069**
	(0.68)	(0.02)	(1.11)	(0.78)	(0.03)	(1.07)
ID OH0067	0.6127	0.1532***	0.5935	0.1699	0.1022***	1.8323**
	(1.32)	(0.05)	(1.06)	(0.77)	(0.04)	(0.90)
ID OH0068	4.3706***	0.0971***	-0.3185	4.8899***	0.1121***	0.3195
	(1.18)	(0.03)	(0.68)	(1.35)	(0.04)	(0.89)
ID OH0069	1.3896**	-0.0874**	9.0669***	-0.2135	-0.1715***	10.1085***
	(0.57)	(0.04)	(1.11)	(0.72)	(0.04)	(1.41)
ID OH0071	-7.8224***	-0.1373***	-2.9078***	-4.4770***	-0.0810**	-0.2665
	(0.67)	(0.03)	(0.45)	(0.58)	(0.03)	(0.77)
ID OH0072	0.3912	0.2670***	1.3652	-4.3975***	0.1550*	-1.1494
	(1.18)	(0.08)	(1.06)	(1.07)	(0.08)	(1.29)
ID OH0074	5.7019***	0.2284***	9.7296***	-3.8552***	0.0404	3.7608**
	(1.35)	(0.07)	(1.97)	(1.34)	(0.05)	(1.51)
ID OH0077	-0.2031	-0.0666***	-0.5824	-0.6449	-0.0890***	-0.1984
	(0.56)	(0.02)	(0.41)	(0.46)	(0.03)	(0.47)

ID OH0078	10.1573***	-0.0815***	3.7984***	8.0203***	-0.1255***	2.9384***
	(0.72)	(0.02)	(0.72)	(0.95)	(0.02)	(0.62)
ID OH0079	6.8493***	0.4409***	5.3928***	-3.5360***	0.1914	0.4208
	(2.04)	(0.15)	(1.45)	(0.72)	(0.14)	(1.33)
ID OH0083	5.1090***	0.1146**	-0.2358	7.7118***	0.1214**	3.0283***
	(0.91)	(0.04)	(0.68)	(0.90)	(0.06)	(1.13)
ID OH0087	4.1860***	0.0571	8.0732***	0.4517	-0.0609	7.1641***
	(0.50)	(0.06)	(1.03)	(0.64)	(0.06)	(1.12)
ID OH0088	-3.7598***	-0.0892***	-2.3836***	-4.0303***	-0.0689**	-2.8280***
	(1.30)	(0.03)	(0.65)	(1.08)	(0.03)	(0.65)
ID OH0089	-3.9760***	0.0202	-3.2487***	-1.0458**	0.1030**	-1.7266***
	(1.08)	(0.05)	(0.63)	(0.45)	(0.05)	(0.52)
ID OH0091	5.1191***	0.0584**	3.1821**	-5.8846***	-0.1423***	-4.2953*
	(1.16)	(0.03)	(1.47)	(1.25)	(0.04)	(2.34)
ID OH0093	-7.7509***	0.2824***	-2.8230***	-3.2081***	0.3590***	0.8044
	(1.26)	(0.09)	(0.79)	(0.69)	(0.07)	(0.87)
ID OH0095	74.1023***	1.0465***	81.3728***	29.3357***	0.1194	52.8619***
	(15.35)	(0.20)	(16.69)	(8.62)	(0.13)	(13.77)
ID OH0097	-5.5417***	-0.2074***	-1.4721***	-10.2539***	-0.4511***	0.1585
	(1.02)	(0.02)	(0.51)	(1.95)	(0.08)	(1.75)
ID OH0101	0.7461	0.0155	-1.4418***	1.8340***	0.0512**	-0.6965
	(0.50)	(0.03)	(0.42)	(0.49)	(0.02)	(0.45)
ID OH0102	-6.8930***	-0.1465***	-3.3964***	-10.2199***	-0.3107***	-2.4206*
	(1.10)	(0.05)	(0.47)	(1.37)	(0.06)	(1.26)
ID OH0103	-1.4756	0.1182	-1.4625	-7.0488***	-0.0420	-3.1637**
	(3.78)	(0.11)	(1.18)	(1.09)	(0.12)	(1.33)
ID OH0105	14.0159***	0.1782***	12.5382***	11.7348***	0.1116**	11.7896***
	(1.40)	(0.05)	(3.00)	(1.43)	(0.05)	(3.12)
ID OH0106	0.4816	0.2328***	5.4204***	0.9577*	0.2248***	6.4214***
	(0.62)	(0.04)	(0.68)	(0.56)	(0.03)	(0.83)
ID OH0107	-3.5275***	-0.1347***	-1.2613***	-3.3993***	-0.1003***	-1.6588***
	(0.62)	(0.02)	(0.41)	(0.40)	(0.02)	(0.45)
ID OH0108	-4.4583***	-0.0402	0.7052	-2.6118***	0.0224	1.4502***
	(1.03)	(0.05)	(0.62)	(0.51)	(0.04)	(0.55)
ID OH0109	7.8466***	0.0948*	5.9246***	1.2263	-0.1042**	3.7062*
	(1.98)	(0.05)	(2.29)	(0.87)	(0.05)	(2.07)
ID OH0111	4.6133***	-0.0317	-0.2651	-1.0324	-0.1565***	-3.3417***
	(0.76)	(0.03)	(0.37)	(0.79)	(0.05)	(0.86)
ID OH0112	-2.9885***	0.2391**	-1.2086*	-2.5443***	0.2108**	0.4192
	(1.13)	(0.11)	(0.63)	(0.73)	(0.11)	(0.73)
ID OH0114	4.9591***	0.2931***	1.0394***	-2.0765	0.1285***	-2.6745***
	(1.15)	(0.05)	(0.33)	(1.61)	(0.05)	(0.80)
ID OH0115	17.2593***	0.6944***	5.6569***	14.6390***	0.6131***	5.3366***
	(1.10)	(0.10)	(1.74)	(0.93)	(0.10)	(1.86)
ID OH0116	-1.2477	-0.1038***	-1.7349***	0.9620*	-0.0481*	-0.4941
	(0.80)	(0.04)	(0.32)	(0.53)	(0.03)	(0.53)
ID OH0118	0.7655	-0.0184	-2.0290***	-4.9548***	-0.1335***	-5.7000***

	(0.62)	(0.04)	(0.74)	(0.80)	(0.05)	(0.99)
ID OH0121	-3.6439***	-0.1752***	-3.0944***	-4.7190***	-0.1683***	-4.1234***
	(0.86)	(0.03)	(0.59)	(0.49)	(0.02)	(0.63)
ID OH0122	-8.8065***	-0.1980***	-4.7130***	-3.0656***	-0.0780***	-0.9973
	(1.51)	(0.04)	(0.92)	(0.53)	(0.02)	(0.79)
ID OH0123	1.4072**	-0.0593***	4.2650***	2.0971***	-0.0728***	5.7175***
	(0.59)	(0.02)	(1.47)	(0.59)	(0.02)	(1.69)
ID OH0124	-1.8765***	0.1184**	-1.6564***	-2.8277***	0.1295***	-2.8179***
	(0.49)	(0.05)	(0.46)	(0.54)	(0.04)	(0.51)
ID OH0125	-0.7944	-0.1281***	-0.7784*	0.4210	-0.1174***	0.5064
	(0.61)	(0.04)	(0.44)	(0.52)	(0.03)	(0.57)
ID OH0126	2.4827*	0.4332***	11.3602***	-6.4090***	0.2782***	4.8854**
	(1.33)	(0.09)	(2.07)	(1.16)	(0.07)	(2.14)
ID OH0128	9.7885***	-0.0075	1.0156**	8.1408***	-0.0656**	0.9274
	(1.03)	(0.03)	(0.50)	(1.32)	(0.03)	(0.59)
ID OH0130	3.7053***	0.1335***	0.6489	2.7934***	0.1173***	0.2951
	(0.69)	(0.03)	(0.49)	(0.39)	(0.03)	(0.71)
ID OH0132	-4.6691***	-0.1561***	-2.5144***	-4.5991***	-0.1412***	-2.4886***
	(1.24)	(0.02)	(0.61)	(0.83)	(0.02)	(0.52)
ID OH0133	-3.6389***	-0.0236	-0.3079	-3.1425***	-0.0466	1.2401
	(0.59)	(0.03)	(0.50)	(0.68)	(0.03)	(0.91)
ID OH0134	-0.3944	0.1390***	1.2596*	3.4828***	0.2213***	4.0380***
	(1.13)	(0.04)	(0.67)	(0.90)	(0.03)	(1.00)
ID OH0136	10.4033***	1.0426***	0.3864	6.5477***	0.9745***	-1.9999***
	(1.26)	(0.05)	(0.63)	(1.32)	(0.06)	(0.76)
ID OH0137	-6.8025***	-0.2086***	-4.8584***	-5.6793***	-0.1974***	-3.5040***
	(1.25)	(0.03)	(0.51)	(0.94)	(0.03)	(0.51)
ID OH0138	1.4035**	0.1676***	2.0975***	-7.5901***	-0.0694	-1.6825*
	(0.70)	(0.06)	(0.41)	(1.17)	(0.05)	(0.99)
ID OH0141	5.3044***	0.2117***	0.2514	7.5971***	0.2484***	2.2770***
	(0.82)	(0.06)	(0.59)	(0.78)	(0.05)	(0.75)
ID OH0142	3.2074***	-0.0962**	0.6913	4.3369***	-0.0710***	1.7048
	(1.22)	(0.04)	(1.08)	(0.72)	(0.03)	(1.09)
ID OH0143	-4.8453***	0.4937***	-1.9861***	-7.1559***	0.4337***	-2.9922***
	(1.39)	(0.06)	(0.50)	(1.03)	(0.07)	(0.45)
ID OH0145	5.8261***	0.4869***	-1.0318*	4.1345***	0.3784***	0.4213
	(0.96)	(0.15)	(0.56)	(1.12)	(0.14)	(1.10)
ID OH0146	2.5959***	0.0038	-1.7828*	4.4674***	0.0561*	-0.6158
	(0.56)	(0.03)	(0.94)	(0.57)	(0.03)	(0.82)
ID OH0147	5.6681***	1.5553***	2.0365***	-1.2042	1.4197***	-2.1396**
	(1.02)	(0.32)	(0.61)	(0.94)	(0.31)	(0.94)
ID OH0148	-1.4104	-0.0414	-2.2457***	0.1577	-0.0592**	0.3381
	(1.25)	(0.03)	(0.82)	(0.88)	(0.03)	(1.02)
ID OH0149	-1.1751	-0.0747	-0.5630*	-3.5755***	-0.1604***	-0.8839
	(0.84)	(0.05)	(0.33)	(0.71)	(0.05)	(0.54)
ID OH0151	-6.3003***	-0.0891***	-2.8325***	-3.1754***	-0.0267	-0.7425
	(0.83)	(0.02)	(0.45)	(0.44)	(0.02)	(0.57)

ID OH0152	-9.0242***	-0.1864***	-4.1772***	-5.6322***	-0.1295***	-1.3509
	(0.77)	(0.02)	(0.52)	(0.68)	(0.02)	(0.87)
ID OH0153	-1.5446	-0.1181***	2.0071*	0.1535	-0.0820**	3.5824***
	(1.41)	(0.04)	(1.12)	(1.00)	(0.03)	(1.04)
ID OH0154	-3.4459***	1.4053***	-1.2026	-3.5159***	1.3364***	0.6985
	(0.96)	(0.05)	(0.79)	(0.87)	(0.05)	(1.03)
ID OH0155	-3.5189***	-0.2258***	0.8927**	-4.7027***	-0.3354***	3.2832**
	(1.23)	(0.03)	(0.36)	(1.40)	(0.04)	(1.36)
ID OH0156	-3.6395***	0.0152	-0.4946	-3.1290***	0.0327	0.0534
	(0.83)	(0.03)	(0.33)	(0.45)	(0.02)	(0.46)
ID OH0157	17.7219***	0.7992***	1.5865**	-0.5350	0.3975***	-8.9749***
	(3.63)	(0.10)	(0.65)	(2.87)	(0.07)	(1.93)
ID OH0158	-1.5930	-0.0240	-2.7642***	-0.4951	-0.0038	-1.9848***
	(1.16)	(0.04)	(0.85)	(0.73)	(0.03)	(0.70)
ID OH0159	-2.1556**	0.0714	-1.2190	-3.3344***	0.0251	-1.1129
	(0.88)	(0.06)	(0.99)	(0.71)	(0.06)	(1.02)
ID OH0161	-0.2393	0.0816***	-0.5997	1.2489***	0.1374***	-0.0648
	(0.82)	(0.02)	(0.49)	(0.38)	(0.02)	(0.43)
ID OH0162	1.9493	-0.1307***	-1.5271	-1.3264	-0.2767***	-1.1657
	(3.44)	(0.05)	(1.13)	(3.73)	(0.06)	(1.62)
ID OH0164	9.6081***	-0.0696***	-1.5598*	6.6914***	-0.1594***	-2.4144***
	(0.74)	(0.02)	(0.80)	(0.79)	(0.02)	(0.64)
ID OH0165	2.8951	0.0402	0.4159	-3.0903***	-0.0424	-4.2928***
	(1.77)	(0.04)	(0.49)	(1.17)	(0.03)	(1.17)
ID OH0168	23.3584***	-0.0115	3.7986***	17.8586***	-0.1000***	-0.1166
	(1.42)	(0.03)	(0.92)	(1.01)	(0.03)	(1.22)
ID OH0169	0.4554	0.0686**	5.2042***	-0.8552	0.0459*	4.6406***
	(1.77)	(0.03)	(0.89)	(1.47)	(0.03)	(0.85)
ID OH0170	-2.0405**	-0.1014***	1.1491**	-1.0812***	-0.0873***	2.1371***
	(0.79)	(0.03)	(0.52)	(0.36)	(0.02)	(0.68)
ID OH0171	-6.1325***	-0.1302***	-0.5855	-5.9617***	-0.1382***	-0.2172
	(0.72)	(0.03)	(0.46)	(0.40)	(0.03)	(0.71)
ID OH0172	34.4308***	0.3497***	12.8824***	5.1818	-0.2612***	-5.1222
	(6.42)	(0.07)	(2.60)	(3.77)	(0.07)	(3.53)
ID OH0173	14.4415***	0.2428***	5.7750***	9.3743***	0.0011	7.0496***
	(2.46)	(0.04)	(1.04)	(2.03)	(0.05)	(1.86)
ID OH0174	19.3051***	0.8254***	6.3483***	14.9454***	0.7294***	3.9937***
	(2.58)	(0.06)	(0.84)	(2.05)	(0.05)	(0.93)
ID OH0175	13.8910***	-0.0247	14.8413***	7.5083***	-0.3232***	16.0477***
	(2.27)	(0.06)	(2.27)	(2.33)	(0.07)	(3.18)
ID OH0176	-6.1285***	-0.0215	-3.9753***	-5.9222***	0.0049	-4.0474***
	(0.90)	(0.03)	(1.03)	(0.49)	(0.02)	(0.90)
ID OH0177	1.2688	-0.0402*	0.5169	1.3806**	-0.0212	0.3795
	(1.23)	(0.02)	(0.52)	(0.67)	(0.02)	(0.42)
ID OH0178	-1.8598***	-0.1325***	-3.8459***	-0.8596*	-0.1017***	-2.8677***
	(0.64)	(0.03)	(0.19)	(0.44)	(0.02)	(0.51)

ID OH0180	-2.1932***	0.4374***	-1.9220***	-4.3177***	0.3711***	-2.2392***
	(0.66)	(0.05)	(0.47)	(0.48)	(0.05)	(0.50)
ID OH0181	8.1031***	0.2106**	1.8693***	-12.6201***	-0.2696***	-10.1486***
	(2.61)	(0.08)	(0.61)	(2.36)	(0.05)	(2.89)
ID OH0182	19.1390***	0.5278***	1.4728**	10.9908***	0.3274***	-2.5201
	(4.78)	(0.13)	(0.75)	(2.30)	(0.07)	(1.65)
ID OH0183	13.3929***	0.1089***	8.6673***	7.9293***	0.0163	4.9362***
	(1.56)	(0.04)	(0.96)	(1.19)	(0.03)	(0.92)
ID OH0186	2.3909***	-0.0147	0.2580	0.3931	-0.0822**	-0.0899
	(0.74)	(0.04)	(0.32)	(0.50)	(0.03)	(0.62)
ID OH0190	-3.0906***	-0.0477	0.7754*	-5.6349***	-0.0971***	-0.9770*
	(0.67)	(0.03)	(0.46)	(0.68)	(0.03)	(0.59)
ID OH0191	-4.4039***	-0.1431***	2.2602***	-5.1415***	-0.2188***	3.7493***
	(1.30)	(0.04)	(0.72)	(1.59)	(0.05)	(1.11)
ID OH0193	6.9009***	1.0334***	10.4530***	5.0663***	0.9436***	11.0339***
	(2.50)	(0.19)	(2.86)	(0.83)	(0.16)	(1.99)
ID OH0195	26.4085***	0.4702***	8.5648***	23.7058***	0.3914***	8.0903***
	(0.73)	(0.07)	(0.88)	(0.92)	(0.07)	(0.89)
ID OH0196	2.7356***	0.3591***	-0.0573	0.3751	0.3039***	-1.0506*
	(0.46)	(0.06)	(0.48)	(0.60)	(0.05)	(0.59)
ID OH0199	1.4380	-0.0240	3.5740***	-1.0460	-0.0751**	2.0406**
	(1.57)	(0.04)	(1.20)	(0.87)	(0.03)	(1.01)
ID OH0200	19.1982***	0.4144***	10.5518***	13.6685***	0.2776***	8.1426***
	(1.19)	(0.06)	(1.73)	(1.17)	(0.06)	(1.81)
ID OH0201	-8.4526***	0.0548*	-1.8481**	-7.8612***	0.0580***	-1.1196
	(1.18)	(0.03)	(0.82)	(0.64)	(0.02)	(0.68)
ID OH0202	-3.3018***	0.2495***	0.3131	-3.8566***	0.2351***	0.2635
	(0.90)	(0.03)	(0.49)	(0.53)	(0.03)	(0.52)
ID OH0203	-4.1755***	0.0086	-0.7850	-3.9059***	0.0313	-0.8535
	(0.71)	(0.02)	(0.82)	(0.37)	(0.03)	(0.75)
ID OH0205	-1.5645	0.1951***	-2.1341***	-1.4591***	0.2043***	-2.1313***
	(0.96)	(0.04)	(0.70)	(0.37)	(0.03)	(0.52)
ID OH0207	-4.5828***	0.0085	4.8873***	-2.7158***	0.0306	6.8310***
	(0.76)	(0.06)	(1.73)	(0.79)	(0.04)	(1.59)
ID OH0209	7.2426***	0.3313***	1.1131***	6.6906***	0.3470***	0.2054
	(1.01)	(0.03)	(0.43)	(0.47)	(0.02)	(0.52)
ID OH0211	-1.1628	0.2856***	-1.3232***	-2.0603**	0.2908***	-2.3077***
	(1.48)	(0.05)	(0.50)	(1.00)	(0.04)	(0.50)
ID OH0215	1.1974	-0.0744**	1.0303**	-0.3051	-0.1168***	0.6913
	(0.89)	(0.03)	(0.51)	(0.52)	(0.03)	(0.52)
ID OH0217	26.1336***	0.6072***	8.9417***	20.0931***	0.4648***	5.8135***
	(2.95)	(0.06)	(0.89)	(2.47)	(0.06)	(1.17)
ID OH0218	29.7314***	0.2290***	20.9823***	14.8630***	-0.1374***	13.6025***
	(4.32)	(0.05)	(2.78)	(2.56)	(0.04)	(1.98)
ID OH0220	-1.2186	-0.0860**	3.2880***	-0.1359	-0.0698**	4.3785***
	(1.26)	(0.04)	(0.84)	(0.62)	(0.03)	(1.14)
ID OH0221	6.0328***	0.8144***	6.6826***	6.9268***	0.7858***	8.8806***
	(0.74)	(0.16)	(2.17)	(0.84)	(0.16)	(2.11)

ID OH0222	4.8355***	0.1206***	1.0422***	4.6740***	0.1136***	1.2729**
	(0.69)	(0.03)	(0.38)	(0.67)	(0.03)	(0.51)
ID OH0223	2.7181	0.1571**	-0.8835*	0.4846	0.1201**	-2.4675**
	(1.67)	(0.08)	(0.50)	(0.93)	(0.06)	(0.99)
ID OH0224	15.3130***	0.2133***	2.3691***	14.7174***	0.1711**	3.1621***
	(1.52)	(0.07)	(0.50)	(1.52)	(0.07)	(0.72)
ID OH0225	-3.8921***	0.2110***	-1.5718***	-3.9752***	0.1983***	-1.1285**
	(0.97)	(0.04)	(0.59)	(0.61)	(0.05)	(0.57)
ID OH0226	-4.2361***	-0.1887***	-1.1180	-2.8558***	-0.1365***	-0.5375
	(1.39)	(0.03)	(0.82)	(0.60)	(0.02)	(0.51)
ID OH0227	-5.3099***	0.1005***	-2.4974***	-4.6207***	0.1592***	-2.9874***
	(0.95)	(0.02)	(0.44)	(0.73)	(0.03)	(0.65)
ID OH0228	-0.6766	0.2782	0.2229	-1.4014**	0.2597	0.0557
	(0.98)	(0.17)	(0.67)	(0.59)	(0.16)	(0.55)
ID OH0230	1.0704**	0.0528	-2.0842***	-2.8529***	-0.0502	-3.6358***
	(0.54)	(0.05)	(0.71)	(0.54)	(0.04)	(1.00)
ID OH0232	2.9051	0.3919***	4.9191**	-9.1253***	0.1196*	-1.8870
	(3.73)	(0.06)	(2.44)	(1.01)	(0.07)	(1.19)
ID OH0233	-5.7534***	0.2105***	-1.1580	-6.5936***	0.2264***	-2.3442**
	(0.89)	(0.04)	(0.86)	(0.76)	(0.05)	(0.98)
ID OH0234	-4.8804***	-0.1504***	-1.2638***	-11.6379***	-0.2832***	-5.7106***
	(0.60)	(0.02)	(0.43)	(1.38)	(0.04)	(1.04)
ID OH0237	8.2208***	0.0205	2.6677***	7.6452***	0.0057	2.4396**
	(0.80)	(0.03)	(0.90)	(0.75)	(0.04)	(0.95)
ID OH0238	24.5959***	0.1784***	5.8799***	22.5798***	0.1143***	5.7499***
	(2.14)	(0.04)	(0.75)	(2.03)	(0.04)	(0.79)
ID OH0239	-2.9584***	-0.0059	-3.6354***	-4.6325***	-0.0526**	-4.0230***
	(0.64)	(0.03)	(1.19)	(0.43)	(0.03)	(1.31)
ID OH0240	16.3087***	1.0068***	9.9730***	10.0082***	0.8667***	6.9632***
	(1.57)	(0.13)	(0.59)	(0.95)	(0.11)	(0.64)
ID OH0241	0.0548	0.0580**	0.6567	-3.5512***	-0.0081	-1.5959**
	(2.11)	(0.03)	(0.98)	(0.74)	(0.05)	(0.65)
ID OH0242	4.5133***	-0.0465	1.7875***	5.4837***	-0.0271	2.6530***
	(0.56)	(0.03)	(0.48)	(0.74)	(0.03)	(0.61)
ID OH0244	-2.5910***	-0.2008***	-2.8038***	-2.7189***	-0.2049***	-2.7010***
	(0.96)	(0.02)	(0.70)	(0.67)	(0.02)	(0.61)
ID OH0245	0.7930	-0.0240	-0.9550***	0.8843	-0.0085	-0.9224
	(0.68)	(0.02)	(0.33)	(0.66)	(0.03)	(0.56)
ID OH0246	17.8050***	0.2238***	15.9222***	15.3697***	0.1283***	16.0347***
	(1.74)	(0.03)	(0.84)	(1.95)	(0.03)	(1.15)
ID OH0247	2.6560***	-0.1168***	1.4375***	2.9459***	-0.0930***	1.6218***
	(0.63)	(0.02)	(0.51)	(0.49)	(0.02)	(0.54)
ID OH0248	-5.5508***	-0.0709***	-2.5962***	-6.1611***	-0.0500**	-3.6896***
	(0.91)	(0.03)	(0.40)	(0.63)	(0.02)	(0.57)
ID OH0251	129.9102***	3.4360***	33.6271***	-28.5215***	-0.9396**	-34.3254*
	(16.48)	(0.59)	(1.57)	(9.28)	(0.38)	(18.89)
YRCODE 2	0.0992	0.0132	0.0282	-0.9511**	-0.0072	-0.7308
	(0.89)	(0.02)	(0.80)	(0.48)	(0.02)	(0.59)

YRCODE 3	0.3931	0.0434	0.4191	-1.7050***	0.0055	-1.0935*
	(0.88)	(0.03)	(0.78)	(0.49)	(0.02)	(0.60)
YRCODE 4	1.3303	0.0777***	0.5536	-1.1195**	0.0325	-1.1829*
	(0.86)	(0.03)	(0.78)	(0.48)	(0.02)	(0.62)
YRCODE 5	3.2235***	0.0993***	1.7127***	1.0984***	0.0535**	0.4029
	(0.76)	(0.03)	(0.63)	(0.41)	(0.02)	(0.47)
YRCODE 6	3.4171***	0.0998***	1.7686***	1.3478***	0.0566***	0.4991
	(0.75)	(0.02)	(0.63)	(0.42)	(0.02)	(0.48)
YRCODE 7	5.5650***	0.0878***	2.6658***	1.6496***	0.0042	0.2395
	(0.74)	(0.02)	(0.72)	(0.47)	(0.02)	(0.58)
YRCODE 8	6.1408***	0.1240***	3.0960***	1.5863***	0.0224	0.3726
	(0.78)	(0.03)	(0.71)	(0.46)	(0.02)	(0.61)
YRCODE 9	6.7359***	0.1586***	3.4930***	2.3060***	0.0583**	0.8801
	(0.83)	(0.03)	(0.72)	(0.48)	(0.03)	(0.58)
YRCODE 10	7.2573***	0.1978***	3.9086***	2.7385***	0.0948***	1.2701**
	(1.02)	(0.03)	(0.72)	(0.59)	(0.03)	(0.58)
YRCODE 11	7.6503***	0.2431***	4.3739***	3.2954***	0.1399***	1.9528***
	(0.79)	(0.03)	(0.74)	(0.50)	(0.03)	(0.59)
YRCODE 12	6.2492***	0.1959***	4.1768***	4.1364***	0.1243***	3.7066***
	(1.01)	(0.03)	(0.71)	(0.64)	(0.03)	(0.75)
YRCODE 13	5.4503***	0.1672***	3.7197***	4.2310***	0.1130***	3.8520***
	(0.99)	(0.03)	(0.69)	(0.68)	(0.03)	(0.75)
Number of Obs	2,255	2,252	2,255	2,255	2,252	2,255
Adjusted R-Square	0.7448	0.6668	0.6432	0.9102	0.7545	0.7705
Overall Significance	71.76***	37.70***	44.25***	145.23***	53.79***	53.97***

Appendix C:

Effect of Levy Post Recession 2 Years Out						
Regressors	**Circ. Per Cap.**	**Prog. Attend Per Cap.**	**Visits Per Cap.**	**Circ. Per Cap.**	**Prog. Attend Per Cap.**	**Visits Per Cap.**
Intercept	8.5022***	0.1518***	4.2599***	-1.7039**	-0.0612**	-1.9118*
	(0.74)	(0.03)	(0.58)	(0.80)	(0.03)	(1.16)
Has a Levy as of 2009	2.6859***	0.0443	0.5711	3.3293***	0.0658***	0.8878*
	(0.66)	(0.03)	(0.45)	(0.44)	(0.02)	(0.46)
Items Per Capita				0.1084	0.0208***	-0.4284**
				(0.18)	(0.00)	(0.21)
PLF Per Capita				0.3232***	0.0051***	0.2524***
				(0.04)	(0.00)	(0.05)
High Labor Exp				0.4767**	-0.0164	0.2684
				(0.23)	(0.01)	(0.25)
High Material Exp				0.5876**	-0.0014	0.1219
				(0.26)	(0.01)	(0.29)

ID OH0003	-1.2205	1.5468***	4.9253***	-3.2161***	1.4620***	5.0531***
	(1.05)	(0.18)	(0.33)	(0.81)	(0.18)	(0.67)
ID OH0004	-9.2055***	-0.1428**	-3.4795***	-5.0372***	-0.1118**	0.6194
	(1.03)	(0.06)	(0.91)	(0.95)	(0.05)	(1.27)
ID OH0006	-0.9445	0.0105	-1.3448**	-0.0845	0.0481	-0.9683**
	(1.11)	(0.05)	(0.52)	(0.90)	(0.04)	(0.48)
ID OH0007	13.8775***	0.1397**	2.7600**	9.0400***	0.0206	0.1030
	(3.54)	(0.07)	(1.09)	(1.60)	(0.04)	(0.72)
ID OH0009	8.1146***	0.2789***	6.8353***	7.2354***	0.2624***	6.4843***
	(1.30)	(0.05)	(0.98)	(1.05)	(0.04)	(0.91)
ID OH0012	-4.4134***	0.0080	-0.9322	-6.6093***	-0.0308	-2.2829***
	(1.14)	(0.05)	(0.89)	(0.82)	(0.03)	(0.40)
ID OH0013	3.9397	1.0584***	2.9539**	0.2487	0.9565***	1.3357***
	(3.26)	(0.30)	(1.28)	(0.86)	(0.24)	(0.49)
ID OH0015	16.2006***	0.8083***	6.9023***	16.1337***	0.7763***	7.7004***
	(1.03)	(0.24)	(0.58)	(1.03)	(0.24)	(0.70)
ID OH0016	-1.3576	-0.1752***	0.0049	-2.8580***	-0.1866***	-1.0638**
	(1.31)	(0.03)	(0.31)	(0.69)	(0.02)	(0.48)
ID OH0017	3.5792***	0.3933***	0.1625	-1.4939	0.2577***	-2.0039***
	(0.69)	(0.05)	(0.37)	(0.95)	(0.04)	(0.75)
ID OH0018	-5.4966***	-0.0010	-3.4888***	-3.8453***	0.0631	-2.7899***
	(0.82)	(0.05)	(0.32)	(0.55)	(0.04)	(0.53)
ID OH0019	-5.8616***	-0.0939***	-0.6941	-8.4626***	-0.1681***	-1.3943***
	(0.58)	(0.03)	(0.48)	(0.56)	(0.03)	(0.50)
ID OH0020	-9.2101***	-0.2297***	-5.6227***	-3.1077***	-0.1424***	-0.3449
	(1.31)	(0.03)	(0.47)	(1.01)	(0.03)	(1.36)
ID OH0021	-3.0661***	0.1429***	6.9783***	-3.4792***	0.1450***	6.6796***
	(0.54)	(0.03)	(0.47)	(0.36)	(0.03)	(0.56)
ID OH0022	0.8585	0.2219***	1.1677***	-1.5664**	0.1735***	-0.1990
	(0.55)	(0.03)	(0.30)	(0.64)	(0.04)	(0.51)
ID OH0023	7.9628***	0.3210***	5.1763***	-4.5864***	-0.0975*	1.5111
	(1.50)	(0.08)	(0.81)	(1.71)	(0.05)	(1.48)
ID OH0025	-2.5992***	-0.0639	-2.4852***	-7.5423***	-0.1613***	-5.3446***
	(0.62)	(0.05)	(0.66)	(0.54)	(0.05)	(0.86)
ID OH0026	-4.9050***	-0.1173***	-1.6090**	-5.3133***	-0.1946***	0.2883
	(1.33)	(0.04)	(0.68)	(0.98)	(0.03)	(1.06)
ID OH0027	-0.4180	0.0369*	4.7530***	-2.5990***	-0.0226	3.8352***
	(1.07)	(0.02)	(0.71)	(0.61)	(0.02)	(0.98)
ID OH0028	4.1305***	-0.0987***	-2.9553***	-2.7572***	-0.3195***	-5.2814***
	(0.90)	(0.04)	(0.46)	(0.96)	(0.05)	(0.79)
ID OH0030	-0.5606	-0.0993***	-1.8022***	-4.9719***	-0.2486***	-3.1146***
	(0.85)	(0.04)	(0.36)	(1.18)	(0.04)	(1.01)
ID OH0032	0.9433	0.0388	0.4337	1.1793	0.0457	0.7650*
	(1.11)	(0.04)	(0.46)	(0.85)	(0.04)	(0.41)
ID OH0033	-7.8512***	-0.1685***	-2.4300***	-5.0310***	-0.0938***	-1.0864**
	(0.95)	(0.03)	(0.56)	(0.37)	(0.02)	(0.50)
ID OH0034	11.5880***	0.0510*	7.6769***	6.2974***	-0.1033***	5.7034***
	(1.20)	(0.03)	(0.39)	(1.18)	(0.03)	(0.62)
ID OH0036	-4.9814***	-0.2408***	-2.8825***	-3.2502***	-0.1951***	-1.7364***
	(0.83)	(0.03)	(0.53)	(0.60)	(0.02)	(0.56)

ID OH0038	8.0880***	0.3920***	2.9979***	0.6886	0.2552***	-1.8923
	(1.51)	(0.03)	(0.68)	(1.64)	(0.02)	(1.21)
ID OH0039	0.8919	0.3652***	-1.8767***	1.6900***	0.4084***	-1.5454***
	(0.84)	(0.08)	(0.41)	(0.43)	(0.08)	(0.55)
ID OH0040	-6.2708***	0.1610***	-1.1321**	-7.2882***	0.1396***	-1.5988**
	(0.78)	(0.05)	(0.55)	(0.62)	(0.05)	(0.79)
ID OH0042	-3.0930***	0.3888***	-1.5989***	0.6949	0.4951***	0.6849
	(0.84)	(0.04)	(0.53)	(0.55)	(0.03)	(0.60)
ID OH0044	23.4137***	0.3386***	17.1739***	-2.9887	-0.2059***	0.6820
	(5.81)	(0.10)	(4.12)	(2.00)	(0.07)	(3.04)
ID OH0045	26.8711***	-0.0953***	6.4480***	21.9113***	-0.2216***	4.5498***
	(0.83)	(0.03)	(0.27)	(1.13)	(0.04)	(0.67)
ID OH0046	10.4685***	0.0315	0.9109**	8.9875***	-0.0155	1.1166*
	(0.67)	(0.03)	(0.39)	(0.55)	(0.03)	(0.66)
ID OH0047	-3.9385***	0.2404***	-1.3422***	-0.8901	0.3281***	0.2649
	(1.00)	(0.04)	(0.38)	(0.61)	(0.02)	(0.43)
ID OH0050	-5.5246***	-0.0853***	-2.5379***	-4.5047***	-0.0311	-2.3116***
	(0.65)	(0.03)	(0.40)	(0.42)	(0.02)	(0.41)
ID OH0051	-1.5788***	-0.0524**	0.9565***	-7.7954***	-0.2128***	-1.8961***
	(0.61)	(0.03)	(0.22)	(0.55)	(0.03)	(0.48)
ID OH0052	13.3706***	0.1293***	3.0708***	10.4580***	0.0722**	1.7760*
	(0.95)	(0.04)	(0.54)	(1.09)	(0.03)	(0.93)
ID OH0053	14.8825***	0.1172*	9.1016***	10.4571***	0.0369	6.5327***
	(0.73)	(0.07)	(0.40)	(0.78)	(0.06)	(0.67)
ID OH0054	-5.8052***	-0.0417*	-4.6386***	-2.8757***	0.0301	-2.9516***
	(0.64)	(0.02)	(0.66)	(0.46)	(0.02)	(0.65)
ID OH0055	7.8733***	0.5300***	2.2016***	4.1350***	0.3623***	2.4749**
	(0.89)	(0.07)	(0.47)	(1.02)	(0.06)	(1.02)
ID OH0056	22.2468***	0.1857***	10.7805***	9.4362***	-0.0762**	2.6141*
	(3.98)	(0.05)	(1.49)	(1.85)	(0.03)	(1.41)
ID OH0057	6.9348***	0.0556*	3.6493***	7.9319***	0.0937***	4.1236***
	(1.18)	(0.03)	(0.71)	(0.65)	(0.02)	(0.54)
ID OH0058	-3.4420***	0.1125***	4.2104***	-4.1900***	0.1193***	3.5689***
	(0.91)	(0.04)	(0.55)	(0.89)	(0.03)	(0.62)
ID OH0059	1.2733**	-0.0547**	-1.7855***	1.1747***	-0.0227	-2.1173***
	(0.62)	(0.02)	(0.48)	(0.41)	(0.03)	(0.49)
ID OH0060	13.9422***	0.0976*	-1.6252***	10.5835***	-0.0435	-1.4854
	(1.42)	(0.06)	(0.42)	(1.27)	(0.05)	(0.92)
ID OH0061	5.4835***	0.2275***	9.1017***	-2.5364***	0.0277	5.0028***
	(2.06)	(0.06)	(2.12)	(0.66)	(0.04)	(1.19)
ID OH0062	2.6031***	0.0168	-0.5716	2.9232***	0.0447	-0.4705
	(0.69)	(0.04)	(0.37)	(0.57)	(0.04)	(0.58)
ID OH0063	1.0238	-0.0315	0.2512	-0.4051	-0.0399	-0.5511
	(0.77)	(0.03)	(0.38)	(0.39)	(0.03)	(0.40)
ID OH0064	-6.5646***	-0.1247***	-3.3651***	-6.4262***	-0.1020***	-3.7540***
	(0.74)	(0.03)	(1.00)	(0.47)	(0.02)	(0.91)
ID OH0066	8.5997***	0.0656***	-2.5030**	6.2233***	-0.0349	-2.4553**
	(0.65)	(0.02)	(1.06)	(0.74)	(0.03)	(1.04)
ID OH0067	0.4992	0.1590***	0.5308	-0.0406	0.1003***	1.7713**
	(1.23)	(0.04)	(0.98)	(0.86)	(0.04)	(0.90)

ID OH0068	5.2073***	0.1084***	-0.2760	5.8234***	0.1258***	0.4788
	(1.36)	(0.03)	(0.63)	(1.52)	(0.04)	(0.83)
ID OH0069	1.5844***	-0.0938**	9.6947***	0.3128	-0.1733***	10.8592***
	(0.56)	(0.04)	(1.22)	(0.72)	(0.04)	(1.43)
ID OH0071	-7.8669***	-0.1150***	-2.8048***	-4.5932***	-0.0579*	-0.2655
	(0.63)	(0.03)	(0.44)	(0.55)	(0.03)	(0.75)
ID OH0072	-0.3774	0.2385***	1.8275*	-5.1915***	0.1174	-0.6390
	(1.36)	(0.09)	(1.10)	(1.51)	(0.09)	(1.23)
ID OH0074	6.0654***	0.2542***	9.2445***	-3.5702***	0.0650	3.4019**
	(1.29)	(0.06)	(1.89)	(1.23)	(0.04)	(1.60)
ID OH0077	-0.0097	-0.0581**	-0.7028*	-0.3374	-0.0772***	-0.2830
	(0.55)	(0.02)	(0.40)	(0.45)	(0.03)	(0.45)
ID OH0078	10.3772***	-0.0777***	3.6765***	8.3425***	-0.1153***	2.9556***
	(0.69)	(0.02)	(0.67)	(0.89)	(0.02)	(0.58)
ID OH0079	7.3186***	0.4495***	6.4044***	-2.8748***	0.1965	1.6932
	(1.94)	(0.14)	(1.69)	(0.70)	(0.13)	(1.48)
ID OH0083	4.7910***	0.1120**	-0.4160	7.4854***	0.1228**	2.7602**
	(0.92)	(0.04)	(0.66)	(0.93)	(0.05)	(1.12)
ID OH0087	4.2337***	0.1127	7.8592***	0.6067	-0.0080	7.0630***
	(0.47)	(0.08)	(0.98)	(0.62)	(0.07)	(1.07)
ID OH0088	-4.0821***	-0.0855***	-2.5754***	-4.3746***	-0.0594*	-2.9519***
	(1.26)	(0.03)	(0.63)	(1.07)	(0.03)	(0.63)
ID OH0089	-4.2157***	0.0152	-3.4725***	-1.2611***	0.1059**	-1.9554***
	(1.05)	(0.05)	(0.62)	(0.46)	(0.05)	(0.50)
ID OH0091	5.0275***	0.0612**	3.4631**	-5.4231***	-0.1293***	-3.4811
	(1.08)	(0.03)	(1.39)	(1.17)	(0.03)	(2.20)
ID OH0093	-7.8861***	0.2634***	-2.9376***	-3.1811***	0.3492***	0.6484
	(1.19)	(0.09)	(0.74)	(0.64)	(0.07)	(0.84)
ID OH0095	75.4946***	1.0672***	82.4882***	31.3966***	0.1258	54.9653***
	(14.27)	(0.19)	(15.49)	(8.37)	(0.12)	(13.28)
ID OH0097	-5.2521***	-0.2023***	-1.5120***	-9.6147***	-0.4637***	0.3725
	(0.98)	(0.02)	(0.47)	(1.89)	(0.08)	(1.80)
ID OH0101	0.8133*	0.0198	-1.5469***	1.9299***	0.0622***	-0.7336*
	(0.48)	(0.03)	(0.40)	(0.46)	(0.02)	(0.41)
ID OH0102	-6.8354***	-0.1465***	-3.5039***	-9.6995***	-0.3051***	-2.4748**
	(1.03)	(0.05)	(0.45)	(1.30)	(0.05)	(1.21)
ID OH0103	-0.6365	0.1498	-1.1351	-8.3113***	-0.0759	-3.7456***
	(3.59)	(0.11)	(1.15)	(1.79)	(0.12)	(1.40)
ID OH0105	15.0620***	0.2253***	13.8059***	12.8912***	0.1558***	13.1170***
	(1.64)	(0.06)	(3.06)	(1.62)	(0.06)	(3.14)
ID OH0106	0.3267	0.2378***	5.0673***	0.8529	0.2311***	6.0509***
	(0.61)	(0.03)	(0.71)	(0.59)	(0.03)	(0.87)
ID OH0107	-3.5248***	-0.1334***	-1.3837***	-3.3463***	-0.0927***	-1.6586***
	(0.58)	(0.03)	(0.40)	(0.39)	(0.02)	(0.42)
ID OH0108	-4.5442***	-0.0415	1.0514	-2.6497***	0.0272	1.8178***
	(0.97)	(0.05)	(0.68)	(0.50)	(0.04)	(0.64)
ID OH0109	8.2093***	0.0814	6.2916***	2.0124**	-0.1179**	4.3394**
	(1.86)	(0.05)	(2.16)	(0.89)	(0.05)	(1.96)
ID OH0111	4.4367***	-0.0284	-0.3239	-0.6435	-0.1403***	-2.9577***
	(0.73)	(0.03)	(0.35)	(0.73)	(0.04)	(0.78)

ID OH0112	-2.8141***	0.2970**	-1.0857*	-2.3071***	0.2675**	0.4882
	(1.06)	(0.12)	(0.60)	(0.69)	(0.11)	(0.68)
ID OH0114	4.8392***	0.2930***	0.9745***	-2.0472	0.1287***	-2.6021***
	(1.08)	(0.05)	(0.31)	(1.52)	(0.04)	(0.73)
ID OH0115	17.0202***	0.6994***	5.8125***	14.6422***	0.6183***	5.7817***
	(1.06)	(0.09)	(1.62)	(0.94)	(0.09)	(1.75)
ID OH0116	-1.4239*	-0.1088***	-1.9435***	0.6579	-0.0495*	-0.8113
	(0.78)	(0.04)	(0.35)	(0.52)	(0.03)	(0.51)
ID OH0118	0.8021	-0.0248	-0.6499	-4.7046***	-0.1393***	-4.0432**
	(0.58)	(0.04)	(1.55)	(0.73)	(0.05)	(1.77)
ID OH0121	-3.7945***	-0.1740***	-3.2445***	-4.7252***	-0.1601***	-4.1002***
	(0.83)	(0.03)	(0.57)	(0.47)	(0.02)	(0.60)
ID OH0122	-8.9918***	-0.1975***	-4.9080***	-3.2252***	-0.0688***	-1.3019*
	(1.42)	(0.03)	(0.87)	(0.50)	(0.02)	(0.75)
ID OH0123	1.3801**	-0.0536**	4.9108***	2.1523***	-0.0639***	6.3773***
	(0.56)	(0.02)	(1.51)	(0.57)	(0.02)	(1.73)
ID OH0124	-1.7458***	0.1189***	-1.9224***	-2.6680***	0.1372***	-2.9934***
	(0.47)	(0.05)	(0.50)	(0.55)	(0.04)	(0.54)
ID OH0125	-0.5818	-0.1276***	-0.8559**	0.5487	-0.1129***	0.3698
	(0.60)	(0.04)	(0.41)	(0.50)	(0.03)	(0.54)
ID OH0126	3.2390**	0.4473***	11.2361***	-5.7629***	0.2873***	4.8636**
	(1.42)	(0.08)	(1.92)	(1.19)	(0.07)	(2.05)
ID OH0128	10.2111***	-0.0063	0.9825**	8.7306***	-0.0601**	0.9831*
	(1.03)	(0.03)	(0.46)	(1.29)	(0.03)	(0.55)
ID OH0130	3.6296***	0.1367***	0.5734	2.8356***	0.1250***	0.2937
	(0.66)	(0.03)	(0.46)	(0.37)	(0.02)	(0.66)
ID OH0132	-4.6240***	-0.1488***	-2.6652***	-4.4426***	-0.1253***	-2.5890***
	(1.16)	(0.02)	(0.58)	(0.78)	(0.02)	(0.51)
ID OH0133	-3.5733***	-0.0221	-0.2021	-2.9007***	-0.0398	1.3983
	(0.56)	(0.03)	(0.49)	(0.66)	(0.03)	(0.90)
ID OH0134	0.1096	0.1482***	1.4115**	3.7961***	0.2332***	4.0598***
	(1.15)	(0.04)	(0.64)	(0.92)	(0.03)	(0.93)
ID OH0136	10.7192***	1.0699***	0.3283	7.0548***	1.0082***	-1.8568***
	(1.20)	(0.05)	(0.58)	(1.26)	(0.06)	(0.70)
ID OH0137	-7.1122***	-0.2075***	-4.9514***	-5.9202***	-0.1937***	-3.5801***
	(1.22)	(0.03)	(0.48)	(0.93)	(0.03)	(0.49)
ID OH0138	1.3581**	0.1986***	2.0317***	-7.2317***	-0.0398	-1.4332*
	(0.66)	(0.06)	(0.38)	(1.10)	(0.05)	(0.87)
ID OH0141	5.3319***	0.2063***	0.1297	7.6157***	0.2488***	2.0578***
	(0.77)	(0.06)	(0.56)	(0.70)	(0.05)	(0.70)
ID OH0142	3.4829***	-0.0953***	0.5615	4.6150***	-0.0665**	1.5825
	(1.16)	(0.04)	(1.01)	(0.74)	(0.03)	(1.02)
ID OH0143	-5.0282***	0.5036***	-2.0798***	-7.0204***	0.4490***	-2.9103***
	(1.31)	(0.05)	(0.47)	(0.97)	(0.06)	(0.42)
ID OH0145	5.9350***	0.4840***	-0.8166	4.5841***	0.3783***	0.6901
	(0.89)	(0.14)	(0.57)	(1.07)	(0.13)	(1.05)
ID OH0146	2.7674***	-0.0043	-2.0297**	4.6680***	0.0560*	-0.8753
	(0.55)	(0.04)	(0.90)	(0.57)	(0.03)	(0.80)
ID OH0147	5.8743***	1.5593***	1.9647***	-0.8468	1.4251***	-1.9649**
	(0.96)	(0.30)	(0.57)	(0.89)	(0.29)	(0.88)

ID OH0148	-1.3772	-0.0373	-2.4850***	0.4484	-0.0543**	0.1399
	(1.17)	(0.03)	(0.80)	(0.87)	(0.03)	(1.02)
ID OH0149	-1.0758	-0.0765	-0.4769	-3.2317***	-0.1621***	-0.6451
	(0.79)	(0.05)	(0.33)	(0.69)	(0.05)	(0.56)
ID OH0151	-6.2099***	-0.0768***	-2.9539***	-3.2697***	-0.0160	-1.0388*
	(0.78)	(0.02)	(0.43)	(0.42)	(0.02)	(0.55)
ID OH0152	-9.0490***	-0.1806***	-4.3226***	-5.5869***	-0.1166***	-1.5262*
	(0.73)	(0.02)	(0.50)	(0.64)	(0.02)	(0.83)
ID OH0153	-1.8681	-0.1221***	1.6275	-0.0710	-0.0809**	3.3142***
	(1.36)	(0.04)	(1.10)	(0.99)	(0.04)	(1.02)
ID OH0154	-3.7085***	1.3753***	-1.4205*	-3.4299***	1.3048***	0.5540
	(0.95)	(0.06)	(0.76)	(0.89)	(0.06)	(1.03)
ID OH0155	-3.8675***	-0.2194***	0.4736	-4.6668***	-0.3242***	2.9955**
	(1.21)	(0.03)	(0.52)	(1.43)	(0.03)	(1.40)
ID OH0156	-3.7518***	0.0146	-0.5925*	-3.1241***	0.0382	0.0651
	(0.79)	(0.03)	(0.32)	(0.43)	(0.02)	(0.43)
ID OH0157	19.0733***	0.8305***	1.8831***	1.5817	0.4251***	-7.7570***
	(3.61)	(0.09)	(0.68)	(3.06)	(0.06)	(1.82)
ID OH0158	-1.7800	-0.0198	-2.8618***	-0.6350	0.0032	-2.1263***
	(1.10)	(0.04)	(0.79)	(0.71)	(0.03)	(0.66)
ID OH0159	-2.0573**	0.0679	-1.3390	-2.9793***	0.0274	-1.1581
	(0.83)	(0.05)	(0.93)	(0.69)	(0.05)	(0.96)
ID OH0161	-0.0500	0.0881***	-0.6239	1.3932***	0.1474***	-0.1174
	(0.78)	(0.02)	(0.45)	(0.39)	(0.02)	(0.41)
ID OH0162	2.3568	-0.0775	-1.4959	-2.8103	-0.2767***	-2.3442
	(3.22)	(0.06)	(1.05)	(3.88)	(0.05)	(1.87)
ID OH0164	9.6900***	-0.0694***	-1.7149**	6.9645***	-0.1582***	-2.4474***
	(0.69)	(0.02)	(0.75)	(0.73)	(0.02)	(0.60)
ID OH0165	3.1379*	0.0655	0.5839	-2.9488***	-0.0191	-4.0025***
	(1.65)	(0.04)	(0.49)	(1.12)	(0.03)	(1.14)
ID OH0168	22.9955***	0.0067	3.5287***	17.6982***	-0.0753**	-0.0989
	(1.38)	(0.03)	(0.89)	(0.99)	(0.03)	(1.14)
ID OH0169	-0.2252	0.0618*	4.7207***	-1.2883	0.0451*	4.3294***
	(1.79)	(0.03)	(0.95)	(1.51)	(0.03)	(0.90)
ID OH0170	-2.0808***	-0.1035***	0.9724*	-1.0226***	-0.0844***	2.0309***
	(0.75)	(0.03)	(0.51)	(0.35)	(0.02)	(0.64)
ID OH0171	-6.2326***	-0.1302***	-0.5591	-5.9115***	-0.1376***	-0.1153
	(0.69)	(0.03)	(0.43)	(0.39)	(0.03)	(0.68)
ID OH0172	33.9211***	0.3473***	12.6031***	5.4038	-0.2639***	-4.5034
	(5.97)	(0.07)	(2.42)	(3.63)	(0.07)	(3.30)
ID OH0173	14.3897***	0.2469***	5.8621***	10.2652***	0.0082	7.6566***
	(2.28)	(0.04)	(0.97)	(2.06)	(0.05)	(1.90)
ID OH0174	20.2441***	0.8390***	6.1922***	15.8814***	0.7428***	3.8787***
	(2.55)	(0.06)	(0.79)	(2.05)	(0.05)	(0.89)
ID OH0175	13.5653***	-0.0129	14.8062***	8.0139***	-0.3108***	16.2464***
	(2.14)	(0.05)	(2.10)	(2.29)	(0.06)	(2.98)
ID OH0176	-6.1754***	-0.0124	-4.0666***	-5.8761***	0.0208	-4.0365***
	(0.85)	(0.03)	(0.96)	(0.48)	(0.02)	(0.85)
ID OH0177	0.9533	-0.0364*	0.5176	1.0539	-0.0104	0.4395
	(1.20)	(0.02)	(0.48)	(0.69)	(0.02)	(0.39)

ID OH0178	-2.0730***	-0.1286***	-3.8603***	-0.9715**	-0.0871***	-2.7720***
	(0.65)	(0.03)	(0.18)	(0.45)	(0.02)	(0.48)
ID OH0180	-2.0078***	0.4429***	-1.8976***	-3.9171***	0.3789***	-2.0091***
	(0.64)	(0.05)	(0.44)	(0.51)	(0.05)	(0.50)
ID OH0181	8.5418***	0.2565***	1.8124***	-12.0526***	-0.2460***	-9.9359***
	(2.45)	(0.09)	(0.57)	(2.13)	(0.05)	(2.64)
ID OH0182	18.7162***	0.5232***	1.3473*	11.4633***	0.3335***	-2.0615
	(4.44)	(0.12)	(0.70)	(2.19)	(0.06)	(1.43)
ID OH0183	13.7871***	0.1053***	8.5781***	8.5382***	0.0188	5.1100***
	(1.49)	(0.04)	(0.90)	(1.20)	(0.03)	(0.88)
ID OH0186	2.3300***	-0.0199	0.1620	0.6214	-0.0844**	0.0042
	(0.70)	(0.04)	(0.31)	(0.48)	(0.03)	(0.59)
ID OH0190	-2.7682***	-0.0408	0.8544**	-5.3298***	-0.0930***	-0.8604
	(0.69)	(0.03)	(0.43)	(0.68)	(0.03)	(0.55)
ID OH0191	-4.7103***	-0.1452***	2.7641***	-5.2351***	-0.2218***	4.2800***
	(1.26)	(0.04)	(0.85)	(1.53)	(0.05)	(1.19)
ID OH0193	6.6574***	1.0968***	10.7629***	4.5924***	0.9956***	11.2037***
	(2.33)	(0.19)	(2.67)	(1.10)	(0.15)	(1.91)
ID OH0195	26.4423***	0.4821***	8.7150***	24.1407***	0.4091***	8.5599***
	(0.68)	(0.07)	(0.83)	(0.87)	(0.06)	(0.87)
ID OH0196	2.9845***	0.3490***	0.2041	0.7741	0.2965***	-0.6598
	(0.48)	(0.06)	(0.52)	(0.56)	(0.05)	(0.62)
ID OH0199	1.0376	-0.0303	3.1494***	-1.2618	-0.0753**	1.6803
	(1.52)	(0.04)	(1.18)	(0.90)	(0.03)	(1.04)
ID OH0200	19.5718***	0.4197***	10.4036***	14.3886***	0.2872***	8.2588***
	(1.15)	(0.05)	(1.61)	(1.15)	(0.06)	(1.68)
ID OH0201	-8.5138***	0.0609**	-2.0963***	-7.8286***	0.0687***	-1.3915**
	(1.11)	(0.03)	(0.80)	(0.61)	(0.02)	(0.68)
ID OH0202	-3.0481***	0.2648***	0.2219	-3.5896***	0.2547***	0.1766
	(0.87)	(0.03)	(0.46)	(0.55)	(0.03)	(0.48)
ID OH0203	-4.1202***	0.0211	-0.7572	-3.8206***	0.0498*	-0.7856
	(0.67)	(0.02)	(0.76)	(0.38)	(0.03)	(0.70)
ID OH0205	-1.6763*	0.1907***	-2.2527***	-1.3643***	0.2084***	-2.1643***
	(0.91)	(0.04)	(0.66)	(0.36)	(0.03)	(0.49)
ID OH0207	-4.0375***	0.0786	6.6785***	-2.4872***	0.0904	8.4395***
	(0.88)	(0.08)	(2.42)	(0.74)	(0.06)	(2.23)
ID OH0209	7.0496***	0.3361***	0.9528**	6.6283***	0.3587***	0.1948
	(0.97)	(0.03)	(0.42)	(0.45)	(0.02)	(0.48)
ID OH0211	-1.5748	0.2859***	-1.5320***	-2.3268**	0.2956***	-2.3528***
	(1.45)	(0.05)	(0.50)	(1.01)	(0.04)	(0.48)
ID OH0215	1.1961	-0.0715**	0.8052	-0.0549	-0.1110***	0.5884
	(0.84)	(0.03)	(0.51)	(0.50)	(0.02)	(0.50)
ID OH0217	26.8611***	0.6166***	8.6650***	21.1627***	0.4789***	5.8266***
	(2.82)	(0.06)	(0.86)	(2.44)	(0.05)	(1.07)
ID OH0218	30.7875***	0.2374***	21.0160***	16.5923***	-0.1279***	14.1622***
	(4.12)	(0.04)	(2.58)	(2.60)	(0.04)	(1.86)
ID OH0220	-1.6185	-0.0907**	3.0272***	-0.3499	-0.0690**	4.1994***
	(1.25)	(0.04)	(0.81)	(0.64)	(0.03)	(1.06)
ID OH0221	6.5821***	0.9389***	7.0609***	7.4981***	0.9054***	9.2635***
	(0.86)	(0.19)	(2.05)	(0.94)	(0.18)	(2.04)

ID OH0222	4.4620***	0.1183***	0.9260**	4.3454***	0.1175***	1.1528**
	(0.77)	(0.03)	(0.36)	(0.71)	(0.03)	(0.47)
ID OH0223	3.3908**	0.2047**	-1.1323**	1.0023	0.1657**	-2.8082***
	(1.67)	(0.08)	(0.52)	(0.99)	(0.07)	(0.98)
ID OH0224	14.9509***	0.2356***	1.9231***	14.5374***	0.1956***	2.7666***
	(1.46)	(0.06)	(0.63)	(1.49)	(0.06)	(0.81)
ID OH0225	-3.8679***	0.2269***	-1.6828***	-3.8953***	0.2188***	-1.2321**
	(0.90)	(0.04)	(0.55)	(0.59)	(0.05)	(0.55)
ID OH0226	-4.4545***	-0.1853***	-1.2721*	-3.0189***	-0.1271***	-0.6239
	(1.32)	(0.03)	(0.77)	(0.60)	(0.02)	(0.48)
ID OH0227	-5.4610***	0.1073***	-2.4903***	-4.7784***	0.1731***	-2.9215***
	(0.91)	(0.02)	(0.41)	(0.72)	(0.03)	(0.63)
ID OH0228	-0.9989	0.2547	0.3605	-1.5423**	0.2426	0.2435
	(0.98)	(0.17)	(0.64)	(0.62)	(0.15)	(0.53)
ID OH0230	1.2230**	0.0514	-2.2316***	-2.3921***	-0.0458	-3.6103***
	(0.52)	(0.04)	(0.68)	(0.54)	(0.04)	(0.90)
ID OH0232	2.2110	0.4029***	4.2665*	-8.4758***	0.1524**	-1.6429
	(3.53)	(0.05)	(2.34)	(0.85)	(0.07)	(1.02)
ID OH0233	-5.7816***	0.2174***	-1.4254*	-6.6545***	0.2363***	-2.5631***
	(0.84)	(0.04)	(0.84)	(0.74)	(0.04)	(0.97)
ID OH0234	-4.5602***	-0.1363***	-1.0342**	-11.6752***	-0.2794***	-5.5191***
	(0.63)	(0.02)	(0.47)	(1.27)	(0.04)	(0.96)
ID OH0237	8.5520***	0.0258	2.9089***	7.8464***	0.0111	2.5687***
	(0.80)	(0.03)	(0.87)	(0.72)	(0.03)	(0.88)
ID OH0238	24.7809***	0.1908***	5.8959***	22.9701***	0.1326***	5.9086***
	(1.98)	(0.04)	(0.69)	(1.91)	(0.04)	(0.74)
ID OH0239	-2.9797***	-0.0105	-3.8875***	-4.4285***	-0.0497*	-4.1369***
	(0.60)	(0.03)	(1.13)	(0.42)	(0.03)	(1.24)
ID OH0240	16.8880***	1.0985***	10.0492***	10.6476***	0.9590***	7.2452***
	(1.54)	(0.14)	(0.56)	(0.96)	(0.13)	(0.59)
ID OH0241	-0.6092	0.0535*	0.3134	-3.6044***	0.0015	-1.5206***
	(2.08)	(0.03)	(0.96)	(0.75)	(0.05)	(0.58)
ID OH0242	4.7689***	-0.0397	1.6523***	5.6387***	-0.0160	2.4602***
	(0.57)	(0.03)	(0.46)	(0.70)	(0.02)	(0.58)
ID OH0244	-2.5595***	-0.1967***	-2.9429***	-2.6818***	-0.1968***	-2.8487***
	(0.90)	(0.02)	(0.66)	(0.63)	(0.02)	(0.58)
ID OH0245	1.0208	-0.0092	-0.9912***	1.1422*	0.0118	-0.8908*
	(0.67)	(0.02)	(0.30)	(0.65)	(0.03)	(0.50)
ID OH0246	17.8941***	0.2360***	15.7961***	15.8730***	0.1481***	16.1149***
	(1.61)	(0.03)	(0.79)	(1.82)	(0.03)	(1.08)
ID OH0247	2.8637***	-0.1061***	1.3058***	3.1337***	-0.0750***	1.5633***
	(0.62)	(0.02)	(0.49)	(0.49)	(0.02)	(0.51)
ID OH0248	-5.6959***	-0.0685***	-2.7050***	-6.3217***	-0.0437**	-3.7448***
	(0.87)	(0.03)	(0.38)	(0.64)	(0.02)	(0.56)
ID OH0251	122.9326***	3.1907***	32.8527***	-16.7527*	-0.9474***	-24.8562*
	(15.64)	(0.56)	(1.53)	(8.71)	(0.30)	(14.45)
YRCODE 2	0.0992	0.0132	0.0282	-0.9291*	-0.0076	-0.7073
	(0.91)	(0.03)	(0.81)	(0.51)	(0.02)	(0.60)
YRCODE 3	0.3931	0.0434	0.4191	-1.6602***	0.0057	-1.0282*
	(0.90)	(0.03)	(0.79)	(0.51)	(0.02)	(0.62)

YRCODE 4	1.3303	0.0777***	0.5536	-1.0551**	0.0326	-1.1035*
	(0.88)	(0.03)	(0.79)	(0.51)	(0.03)	(0.63)
YRCODE 5	3.2235***	0.0993***	1.7127***	1.1930***	0.0534**	0.4780
	(0.78)	(0.03)	(0.64)	(0.44)	(0.02)	(0.48)
YRCODE 6	3.4171***	0.0998***	1.7686***	1.4683***	0.0568**	0.5912
	(0.77)	(0.03)	(0.64)	(0.44)	(0.02)	(0.48)
YRCODE 7	5.5650***	0.0878***	2.6658***	1.8350***	0.0041	0.3842
	(0.75)	(0.02)	(0.73)	(0.48)	(0.02)	(0.58)
YRCODE 8	6.1812***	0.1254***	3.1003***	1.7913***	0.0220	0.5115
	(0.80)	(0.03)	(0.72)	(0.46)	(0.02)	(0.61)
YRCODE 9	6.7763***	0.1600***	3.4974***	2.5149***	0.0578**	1.0156*
	(0.85)	(0.03)	(0.72)	(0.49)	(0.03)	(0.57)
YRCODE 10	7.2977***	0.1992***	3.9130***	2.9585***	0.0942***	1.4096**
	(1.02)	(0.03)	(0.72)	(0.61)	(0.03)	(0.57)
YRCODE 11	7.6907***	0.2446***	4.3782***	3.5331***	0.1393***	2.0919***
	(0.80)	(0.03)	(0.74)	(0.50)	(0.03)	(0.58)
YRCODE 12	6.3055***	0.1974***	4.2132***	4.3797***	0.1214***	3.8235***
	(0.92)	(0.03)	(0.69)	(0.61)	(0.03)	(0.67)
YRCODE 13	5.5065***	0.1687***	3.7557***	4.4455***	0.1102***	3.9384***
	(0.91)	(0.03)	(0.66)	(0.64)	(0.03)	(0.67)
YRCODE 14	4.5693***	0.1690***	3.3660***	3.1388***	0.1024***	3.2452***
	(0.85)	(0.03)	(0.66)	(0.65)	(0.03)	(0.69)
Number of Obs.	2,429	2,426	2,429	2,429	2,426	2,429
Adjusted R-Square	0.7509	0.6650	0.6583	0.9075	0.7562	0.7718
Overall Significance	77.88***	37.74***	47.94***	160.98***	55.47***	58.41***

Note: Robust standard errors are in parenthesis. *, **, and ***indicate 10%, 5%, and 1% significance levels, respectively.

Source: Institute of Museum and Library Services. *Public Library Statistics*, 1998-2019. Own Calculations

Appendix D:

Regression Analysis: Four Years Out						
Regressors	**Circ. Per Cap.**	**Prog. Attend Per Cap.**	**Visits Per Cap.**	**Circ. Per Cap.**	**Prog. Attend Per Cap.**	**Visits Per Cap.**
Intercept	8.4728***	0.1470***	4.2669***	-1.1491	-0.0559*	-1.1990
	(0.73)	(0.03)	(0.58)	(0.77)	(0.03)	(1.11)
Has a Levy as of 2009	2.9212***	0.0265	0.6342*	3.6008***	0.0457**	1.0014**
	(0.52)	(0.02)	(0.38)	(0.36)	(0.02)	(0.39)
Items Per Capita				0.0667	0.0192***	-0.3699*
				(0.17)	(0.00)	(0.19)
PLF Per Capita				0.3112***	0.0049***	0.2278***
				(0.04)	(0.00)	(0.05)
High Labor Exp				0.3054	-0.0236*	0.0673
				(0.22)	(0.01)	(0.24)

High Material Exp				0.4813**	0.0051	-0.0511
				(0.24)	(0.01)	(0.27)
ID OH0003	-1.4644	1.5370***	4.8119***	-3.2016***	1.4550***	4.9624***
	(0.95)	(0.16)	(0.31)	(0.75)	(0.16)	(0.60)
ID OH0004	-9.2108***	-0.1591***	-3.7391***	-4.9022***	-0.1194***	-0.1348
	(0.91)	(0.05)	(0.82)	(0.81)	(0.04)	(1.15)
ID OH0006	-1.5727	0.0153	-1.5385***	-0.7676	0.0440	-1.1543***
	(1.06)	(0.04)	(0.47)	(0.92)	(0.04)	(0.45)
ID OH0007	12.2659***	0.1282**	2.2298**	8.4409***	0.0358	0.1919
	(3.28)	(0.06)	(1.02)	(1.61)	(0.04)	(0.58)
ID OH0009	6.9879***	0.2501***	6.0647***	6.3271***	0.2413***	5.7976***
	(1.38)	(0.05)	(1.00)	(1.16)	(0.04)	(0.93)
ID OH0012	-4.7630***	0.0002	-1.2810	-6.2072***	-0.0237	-2.1260***
	(1.03)	(0.04)	(0.81)	(0.67)	(0.03)	(0.31)
ID OH0013	6.7247**	1.3279***	4.1271***	1.6225	1.1893***	1.7624***
	(3.42)	(0.32)	(1.38)	(1.14)	(0.26)	(0.52)
ID OH0015	15.7102***	0.7445***	6.6719***	15.8015***	0.7200***	7.3810***
	(0.95)	(0.21)	(0.53)	(0.95)	(0.21)	(0.63)
ID OH0016	-1.5131	-0.1725***	0.1555	-2.7171***	-0.1729***	-0.6972
	(1.16)	(0.02)	(0.29)	(0.64)	(0.02)	(0.44)
ID OH0017	3.4507***	0.4135***	-0.1185	-1.3667*	0.2803***	-2.0866***
	(0.64)	(0.05)	(0.38)	(0.82)	(0.04)	(0.65)
ID OH0018	-5.6074***	-0.0198	-3.5782***	-3.9735***	0.0415	-2.8756***
	(0.73)	(0.04)	(0.29)	(0.49)	(0.04)	(0.46)
ID OH0019	-6.1076***	-0.1133***	-0.6235	-8.4994***	-0.1890***	-1.1753***
	(0.56)	(0.03)	(0.43)	(0.55)	(0.03)	(0.45)
ID OH0020	-9.3543***	-0.2372***	-5.5836***	-3.1905***	-0.1538***	-0.6950
	(1.16)	(0.03)	(0.42)	(0.93)	(0.03)	(1.28)
ID OH0021	-2.9001***	0.1409***	7.0999***	-3.2692***	0.1420***	6.8566***
	(0.52)	(0.03)	(0.43)	(0.36)	(0.03)	(0.50)
ID OH0022	0.6126	0.1939***	0.9409***	-1.7775***	0.1417***	-0.3726
	(0.52)	(0.04)	(0.30)	(0.60)	(0.04)	(0.48)
ID OH0023	8.1543***	0.3456***	5.3530***	-4.6224***	-0.0934	1.5160
	(1.33)	(0.07)	(0.76)	(1.66)	(0.06)	(1.34)
ID OH0025	-2.5209***	-0.0738*	-2.4254***	-7.1606***	-0.1675***	-4.8915***
	(0.56)	(0.04)	(0.58)	(0.47)	(0.05)	(0.75)
ID OH0026	-3.8679***	-0.0949**	-0.5835	-5.5053***	-0.2145***	0.4612
	(1.36)	(0.04)	(0.92)	(0.95)	(0.03)	(0.98)
ID OH0027	-0.8993	0.0282	4.7809***	-2.7730***	-0.0273	4.0490***
	(1.00)	(0.03)	(0.62)	(0.59)	(0.02)	(0.83)
ID OH0028	4.6260***	-0.1297***	-2.9012***	-1.7352*	-0.3408***	-5.0491***
	(0.87)	(0.04)	(0.41)	(0.93)	(0.05)	(0.68)
ID OH0030	-0.5960	-0.0732**	-1.8291***	-5.1893***	-0.2313***	-3.3337***
	(0.76)	(0.04)	(0.33)	(1.07)	(0.04)	(0.86)
ID OH0032	0.4247	0.0271	0.2380	0.7007	0.0374	0.5495
	(1.04)	(0.04)	(0.42)	(0.83)	(0.03)	(0.37)
ID OH0033	-7.8265***	-0.1777***	-2.4700***	-5.0817***	-0.1092***	-1.2403***
	(0.85)	(0.03)	(0.49)	(0.35)	(0.02)	(0.44)
ID OH0034	12.2926***	0.0412	7.8358***	7.4049***	-0.1030***	6.0075***
	(1.15)	(0.03)	(0.35)	(1.13)	(0.03)	(0.52)

ID OH0036	-5.2996***	-0.2543***	-3.1354***	-3.5412***	-0.2108***	-2.0398***
	(0.78)	(0.03)	(0.50)	(0.55)	(0.02)	(0.51)
ID OH0038	7.6739***	0.3648***	2.5603***	1.1917	0.2439***	-1.4986
	(1.37)	(0.04)	(0.66)	(1.46)	(0.03)	(1.05)
ID OH0039	0.7138	0.3452***	-1.9033***	1.5670***	0.3906***	-1.5378***
	(0.75)	(0.07)	(0.36)	(0.40)	(0.07)	(0.46)
ID OH0040	-6.0628***	0.1365***	-0.9530*	-6.8472***	0.1191**	-1.3417**
	(0.71)	(0.05)	(0.51)	(0.59)	(0.05)	(0.68)
ID OH0042	-3.2135***	0.4177***	-1.4487***	0.5059	0.5201***	0.7331
	(0.75)	(0.04)	(0.49)	(0.50)	(0.04)	(0.56)
ID OH0044	23.8671***	0.4584***	14.7618***	-1.7645	-0.0756	-0.3576
	(5.08)	(0.12)	(3.95)	(1.87)	(0.09)	(3.35)
ID OH0045	26.7190***	-0.0794***	6.3465***	22.4600***	-0.1882***	4.7971***
	(0.73)	(0.03)	(0.24)	(0.96)	(0.04)	(0.54)
ID OH0046	10.2571***	0.0184	0.7015*	9.1814***	-0.0257	1.0799*
	(0.63)	(0.03)	(0.37)	(0.51)	(0.03)	(0.57)
ID OH0047	-4.4311***	0.2215***	-1.4086***	-1.3939**	0.3089***	0.1040
	(0.95)	(0.04)	(0.34)	(0.61)	(0.02)	(0.38)
ID OH0050	-5.4090***	-0.0997***	-2.6342***	-4.2862***	-0.0463*	-2.2885***
	(0.59)	(0.03)	(0.36)	(0.40)	(0.02)	(0.36)
ID OH0051	-1.1116*	-0.0523**	0.9805***	-7.1225***	-0.2125***	-1.6667***
	(0.63)	(0.02)	(0.19)	(0.53)	(0.03)	(0.42)
ID OH0052	13.8978***	0.1218***	3.3175***	11.5285***	0.0767***	2.3484***
	(0.91)	(0.03)	(0.50)	(1.08)	(0.03)	(0.82)
ID OH0053	15.0343***	0.1336**	9.3783***	11.0068***	0.0622	7.1574***
	(0.65)	(0.06)	(0.40)	(0.69)	(0.05)	(0.63)
ID OH0054	-5.7734***	-0.0449**	-4.7412***	-3.1191***	0.0199	-3.2356***
	(0.57)	(0.02)	(0.58)	(0.41)	(0.02)	(0.58)
ID OH0055	7.1215***	0.5112***	1.9538***	4.2450***	0.3685***	2.3203***
	(0.95)	(0.06)	(0.45)	(0.95)	(0.05)	(0.88)
ID OH0056	23.2102***	0.1776***	10.7736***	10.1244***	-0.0928**	2.8395**
	(3.53)	(0.05)	(1.31)	(1.79)	(0.04)	(1.43)
ID OH0057	6.3246***	0.0467*	3.2526***	7.4873***	0.0886***	3.7496***
	(1.12)	(0.03)	(0.68)	(0.66)	(0.02)	(0.54)
ID OH0058	-3.3823***	0.1584***	4.2264***	-3.9936***	0.1672***	3.7572***
	(0.81)	(0.04)	(0.48)	(0.77)	(0.04)	(0.53)
ID OH0059	0.9593	-0.0616***	-1.7002***	1.0961***	-0.0236	-1.8412***
	(0.60)	(0.02)	(0.43)	(0.40)	(0.02)	(0.44)
ID OH0060	15.0569***	0.1000**	-1.5619***	11.9794***	-0.0386	-1.4448*
	(1.45)	(0.05)	(0.37)	(1.35)	(0.05)	(0.82)
ID OH0061	4.5547**	0.1955***	8.2466***	-2.2780***	0.0141	4.9506***
	(1.92)	(0.06)	(1.94)	(0.63)	(0.04)	(1.12)
ID OH0062	2.8152***	0.0202	-0.4927	3.2394***	0.0430	-0.2646
	(0.63)	(0.03)	(0.33)	(0.53)	(0.03)	(0.51)
ID OH0063	0.7305	-0.0246	0.1936	-0.4198	-0.0266	-0.4399
	(0.71)	(0.03)	(0.34)	(0.37)	(0.02)	(0.35)
ID OH0064	-6.8033***	-0.1187***	-3.6694***	-6.6520***	-0.0976***	-4.0402***
	(0.68)	(0.02)	(0.90)	(0.45)	(0.02)	(0.84)
ID OH0066	8.3076***	0.0738***	-2.8113***	6.2175***	-0.0237	-2.7534***
	(0.63)	(0.02)	(0.95)	(0.70)	(0.02)	(0.95)

ID OH0067	0.1137	0.1525***	0.4817	-0.5843	0.0841**	1.4954*
	(1.11)	(0.04)	(0.86)	(0.92)	(0.04)	(0.83)
ID OH0068	6.3605***	0.1238***	-0.1577	7.1291***	0.1399***	0.6218
	(1.42)	(0.03)	(0.57)	(1.55)	(0.03)	(0.73)
ID OH0069	1.9258***	-0.1147***	10.9296***	0.8513	-0.1880***	11.9340***
	(0.56)	(0.04)	(1.36)	(0.68)	(0.04)	(1.47)
ID OH0071	-7.7168***	-0.0920***	-2.4309***	-4.5506***	-0.0460	-0.1053
	(0.59)	(0.03)	(0.47)	(0.53)	(0.03)	(0.75)
ID OH0072	-1.2755	0.1720*	2.0141**	-6.2959***	0.0509	-0.5546
	(1.35)	(0.09)	(0.97)	(1.63)	(0.10)	(1.08)
ID OH0074	6.6470***	0.2890***	8.3202***	-3.0052***	0.0960**	2.8132*
	(1.20)	(0.06)	(1.76)	(1.06)	(0.04)	(1.69)
ID OH0077	0.2680	-0.0681***	-0.7987**	0.1683	-0.0809***	-0.3535
	(0.53)	(0.02)	(0.35)	(0.47)	(0.03)	(0.38)
ID OH0078	10.5047***	-0.0835***	3.5808***	8.7538***	-0.1168***	3.0231***
	(0.62)	(0.02)	(0.59)	(0.78)	(0.02)	(0.50)
ID OH0079	8.1329***	0.4172***	7.0422***	-1.6889**	0.1691	2.6625*
	(1.77)	(0.12)	(1.63)	(0.71)	(0.12)	(1.44)
ID OH0083	4.5041***	0.0994**	-0.4649	7.0379***	0.1025**	2.2686**
	(0.85)	(0.04)	(0.58)	(0.90)	(0.05)	(1.02)
ID OH0087	4.2805***	0.1883**	7.7688***	0.7817	0.0667	6.9603***
	(0.44)	(0.08)	(0.86)	(0.55)	(0.08)	(0.94)
ID OH0088	-4.6482***	-0.0873***	-2.7956***	-4.8472***	-0.0631**	-3.0271***
	(1.18)	(0.03)	(0.57)	(1.02)	(0.03)	(0.57)
ID OH0089	-4.5525***	-0.0083	-3.6945***	-1.5204***	0.0856**	-2.1838***
	(0.96)	(0.05)	(0.57)	(0.44)	(0.04)	(0.46)
ID OH0091	4.6283***	0.0791**	2.9458**	-4.8553***	-0.0900**	-3.0371
	(1.00)	(0.03)	(1.27)	(1.04)	(0.04)	(1.92)
ID OH0093	-7.3834***	0.3001***	-2.4717***	-3.3702***	0.3637***	0.6153
	(1.21)	(0.09)	(0.87)	(0.59)	(0.07)	(0.85)
ID OH0095	75.0618***	1.0685***	82.7180***	32.5698***	0.1613	57.4581***
	(12.45)	(0.17)	(13.49)	(7.63)	(0.12)	(12.13)
ID OH0097	-4.6280***	-0.1936***	-1.4923***	-8.9265***	-0.4720***	0.1285
	(0.96)	(0.02)	(0.43)	(1.82)	(0.08)	(1.77)
ID OH0101	0.7824*	0.0046	-1.6811***	2.0550***	0.0462**	-0.7700**
	(0.44)	(0.03)	(0.37)	(0.40)	(0.02)	(0.37)
ID OH0102	-6.7288***	-0.1657***	-3.5702***	-9.2381***	-0.3231***	-2.6967**
	(0.91)	(0.05)	(0.40)	(1.20)	(0.05)	(1.09)
ID OH0103	-0.2311	0.1357	-0.5985	-10.9401***	-0.1728	-4.7045***
	(3.16)	(0.10)	(1.07)	(2.52)	(0.13)	(1.44)
ID OH0105	17.5295***	0.2951***	16.3408***	15.3649***	0.2220***	15.6252***
	(2.23)	(0.07)	(3.19)	(2.12)	(0.06)	(3.22)
ID OH0106	0.3615	0.2263***	4.8492***	0.8755	0.2194***	5.7010***
	(0.56)	(0.03)	(0.65)	(0.54)	(0.03)	(0.79)
ID OH0107	-3.6238***	-0.1485***	-1.5404***	-3.2789***	-0.1056***	-1.5952***
	(0.53)	(0.03)	(0.37)	(0.34)	(0.02)	(0.37)
ID OH0108	-4.6818***	-0.0669	1.5714**	-2.7369***	0.0073	2.3539***
	(0.87)	(0.05)	(0.70)	(0.46)	(0.04)	(0.68)
ID OH0109	8.8250***	0.1164**	7.2744***	3.1553***	-0.0683	5.4035***
	(1.70)	(0.05)	(2.00)	(0.94)	(0.05)	(1.82)

ID OH0111	3.9875***	-0.0367	-0.2964	-0.2918	-0.1363***	-2.3854***
	(0.73)	(0.03)	(0.32)	(0.61)	(0.04)	(0.65)
ID OH0112	-2.5448***	0.3926***	-0.8379	-2.1282***	0.3672***	0.3768
	(0.95)	(0.12)	(0.55)	(0.60)	(0.11)	(0.57)
ID OH0114	4.6288***	0.2800***	0.8511***	-1.9707	0.1207***	-2.4831***
	(0.96)	(0.04)	(0.29)	(1.32)	(0.04)	(0.65)
ID OH0115	16.7463***	0.6774***	6.1038***	14.6664***	0.6013***	6.2075***
	(0.95)	(0.08)	(1.42)	(0.87)	(0.09)	(1.55)
ID OH0116	-1.7669**	-0.1253***	-2.2676***	0.2620	-0.0729**	-1.2330**
	(0.73)	(0.04)	(0.37)	(0.49)	(0.03)	(0.48)
ID OH0118	0.9453*	-0.0356	2.6565	-4.1226***	-0.1516***	-0.2522
	(0.53)	(0.04)	(2.63)	(0.65)	(0.04)	(2.82)
ID OH0121	-3.9395***	-0.1902***	-3.2789***	-4.6070***	-0.1706***	-3.8973***
	(0.75)	(0.03)	(0.50)	(0.44)	(0.02)	(0.53)
ID OH0122	-9.1977***	-0.2152***	-5.1062***	-3.3656***	-0.0875***	-1.7083**
	(1.26)	(0.03)	(0.78)	(0.46)	(0.02)	(0.72)
ID OH0123	1.2258**	-0.0660***	5.4456***	2.1109***	-0.0820***	6.8443***
	(0.52)	(0.02)	(1.37)	(0.54)	(0.02)	(1.59)
ID OH0124	-1.5272***	0.1080***	-1.9920***	-2.2333***	0.1286***	-2.8124***
	(0.45)	(0.04)	(0.48)	(0.54)	(0.04)	(0.53)
ID OH0125	-0.2694	-0.1418***	-0.9232**	0.8337*	-0.1292***	0.1646
	(0.58)	(0.03)	(0.36)	(0.46)	(0.03)	(0.45)
ID OH0126	3.8749***	0.4628***	11.0057***	-5.1260***	0.3032***	5.0206***
	(1.32)	(0.07)	(1.69)	(1.12)	(0.06)	(1.89)
ID OH0128	11.0898***	-0.0027	1.0252**	9.8529***	-0.0556**	1.0830**
	(1.08)	(0.03)	(0.41)	(1.30)	(0.03)	(0.49)
ID OH0130	3.4041***	0.1359***	0.4748	2.7706***	0.1298***	0.2555
	(0.60)	(0.02)	(0.41)	(0.34)	(0.02)	(0.57)
ID OH0132	-4.4985***	-0.1624***	-2.7829***	-4.1211***	-0.1317***	-2.6452***
	(1.02)	(0.02)	(0.52)	(0.71)	(0.02)	(0.46)
ID OH0133	-3.7277***	-0.0380	-0.7200	-2.7766***	-0.0577**	0.8273
	(0.54)	(0.03)	(0.56)	(0.61)	(0.03)	(0.87)
ID OH0134	0.7148	0.1613***	1.7562***	4.1555***	0.2386***	4.1757***
	(1.08)	(0.04)	(0.61)	(0.87)	(0.03)	(0.85)
ID OH0136	11.4586***	1.0960***	0.5612	8.1690***	1.0377***	-1.3137**
	(1.16)	(0.05)	(0.54)	(1.24)	(0.05)	(0.63)
ID OH0137	-7.5845***	-0.2188***	-5.0330***	-6.3480***	-0.2029***	-3.7848***
	(1.12)	(0.03)	(0.42)	(0.88)	(0.02)	(0.42)
ID OH0138	1.2163**	0.2526***	2.0638***	-6.9400***	0.0280	-1.2600*
	(0.60)	(0.06)	(0.35)	(0.95)	(0.06)	(0.70)
ID OH0141	5.2910***	0.1981***	-0.0271	7.5618***	0.2392***	1.6912***
	(0.68)	(0.05)	(0.50)	(0.59)	(0.04)	(0.62)
ID OH0142	3.8818***	-0.1017***	0.4242	5.0433***	-0.0779***	1.4273
	(1.06)	(0.03)	(0.88)	(0.72)	(0.03)	(0.90)
ID OH0143	-5.3132***	0.4891***	-2.1428***	-6.8998***	0.4390***	-2.7716***
	(1.18)	(0.05)	(0.42)	(0.86)	(0.05)	(0.38)
ID OH0145	5.9889***	0.4920***	-0.1168	4.8667***	0.3933***	1.1141
	(0.80)	(0.12)	(0.70)	(0.97)	(0.12)	(1.02)
ID OH0146	2.7597***	-0.0368	-2.2715***	4.7418***	0.0263	-1.1444
	(0.56)	(0.04)	(0.81)	(0.55)	(0.04)	(0.72)

ID OH0147	6.1284***	1.5668***	1.9944***	-0.3063	1.4365***	-1.5298**
	(0.86)	(0.26)	(0.50)	(0.79)	(0.25)	(0.78)
ID OH0148	-1.9098*	-0.0564*	-2.6980***	0.0449	-0.0698**	-0.3527
	(1.11)	(0.03)	(0.71)	(0.87)	(0.03)	(0.94)
ID OH0149	-0.8247	-0.0785*	-0.2513	-2.6885***	-0.1646***	-0.3697
	(0.72)	(0.05)	(0.34)	(0.66)	(0.04)	(0.54)
ID OH0151	-5.9767***	-0.0544**	-3.0511***	-3.3138***	-0.0041	-1.4408***
	(0.71)	(0.02)	(0.39)	(0.38)	(0.02)	(0.51)
ID OH0152	-8.9690***	-0.1931***	-4.4561***	-5.3842***	-0.1318***	-1.7719**
	(0.65)	(0.02)	(0.45)	(0.60)	(0.02)	(0.75)
ID OH0153	-2.4450*	-0.1371***	1.0717	-0.5122	-0.0958***	2.8017***
	(1.26)	(0.04)	(1.03)	(0.96)	(0.03)	(0.96)
ID OH0154	-4.1569***	1.3235***	-1.7673**	-3.6907***	1.2552***	-0.0174
	(0.89)	(0.06)	(0.70)	(0.88)	(0.07)	(0.97)
ID OH0155	-4.3446***	-0.2147***	-0.0971	-4.7589***	-0.3085***	2.1207
	(1.12)	(0.02)	(0.60)	(1.31)	(0.03)	(1.29)
ID OH0156	-3.8529***	0.0043	-0.6374**	-3.0286***	0.0300	0.1351
	(0.71)	(0.03)	(0.29)	(0.38)	(0.02)	(0.38)
ID OH0157	20.2218***	0.8692***	2.6259***	3.9528	0.4818***	-5.7723***
	(3.26)	(0.09)	(0.79)	(2.89)	(0.07)	(1.70)
ID OH0158	-2.2101**	-0.0193	-2.9937***	-1.0753	0.0011	-2.3300***
	(1.02)	(0.03)	(0.70)	(0.71)	(0.03)	(0.61)
ID OH0159	-2.0742***	0.0500	-1.4345*	-2.7253***	0.0155	-1.2689
	(0.75)	(0.05)	(0.82)	(0.62)	(0.05)	(0.83)
ID OH0161	-0.1468	0.0828***	-0.7333*	1.3965***	0.1488***	-0.1717
	(0.69)	(0.02)	(0.40)	(0.36)	(0.02)	(0.35)
ID OH0162	2.6552	-0.0281	-1.5940*	-5.4499	-0.2976***	-4.3712**
	(2.83)	(0.06)	(0.92)	(3.85)	(0.05)	(1.95)
ID OH0164	7.9059***	-0.0760***	-1.5762**	5.4652***	-0.1596***	-2.2781***
	(1.47)	(0.02)	(0.67)	(1.46)	(0.02)	(0.53)
ID OH0165	3.2399**	0.0922**	1.1246**	-2.8385***	0.0077	-3.1044***
	(1.43)	(0.04)	(0.57)	(1.04)	(0.03)	(1.08)
ID OH0168	22.3080***	0.0431	3.2145***	17.4793***	-0.0371	0.1446
	(1.29)	(0.03)	(0.80)	(0.96)	(0.04)	(1.00)
ID OH0169	-1.1310	0.0423	3.5796***	-1.8828	0.0395	3.2706***
	(1.69)	(0.03)	(1.13)	(1.44)	(0.03)	(1.11)
ID OH0170	-2.1261***	-0.1158***	0.7402	-0.8846***	-0.0987***	1.8994***
	(0.67)	(0.03)	(0.48)	(0.34)	(0.02)	(0.58)
ID OH0171	-6.3073***	-0.1513***	-0.7361*	-5.8414***	-0.1600***	-0.2308
	(0.62)	(0.03)	(0.41)	(0.35)	(0.03)	(0.58)
ID OH0172	32.6633***	0.3447***	12.3183***	5.4778	-0.2359***	-3.2750
	(5.27)	(0.06)	(2.11)	(3.39)	(0.07)	(3.00)
ID OH0173	14.2464***	0.2499***	6.0521***	11.1002***	0.0309	7.8858***
	(1.98)	(0.03)	(0.86)	(1.97)	(0.05)	(1.79)
ID OH0174	21.9475***	0.8704***	5.8634***	17.6330***	0.7705***	3.6500***
	(2.50)	(0.05)	(0.73)	(2.07)	(0.05)	(0.83)
ID OH0175	11.6779***	-0.0421	13.0007***	8.0494***	-0.2812***	14.4718***
	(2.28)	(0.05)	(2.21)	(2.06)	(0.05)	(2.73)
ID OH0176	-6.1345***	-0.0169	-4.0781***	-5.6627***	0.0216	-3.9200***
	(0.75)	(0.03)	(0.84)	(0.44)	(0.02)	(0.76)

ID OH0177	0.3519	-0.0453**	0.3459	0.6095	-0.0209	0.4645
	(1.13)	(0.02)	(0.43)	(0.69)	(0.02)	(0.34)
ID OH0178	-2.3799***	-0.1339***	-3.7792***	-1.0153**	-0.0889***	-2.5705***
	(0.62)	(0.02)	(0.17)	(0.41)	(0.02)	(0.43)
ID OH0180	-1.8056***	0.4398***	-1.4800***	-3.3918***	0.3776***	-1.4098**
	(0.60)	(0.04)	(0.49)	(0.52)	(0.04)	(0.60)
ID OH0181	9.5067***	0.2935***	1.8666***	-10.9385***	-0.2093***	-9.3035***
	(2.23)	(0.08)	(0.50)	(1.76)	(0.05)	(2.27)
ID OH0182	17.9276***	0.5105***	1.2376**	11.7627***	0.3517***	-1.5342
	(3.90)	(0.11)	(0.62)	(1.97)	(0.06)	(1.12)
ID OH0183	14.2957***	0.0902***	8.4148***	9.4574***	0.0096	5.4226***
	(1.34)	(0.03)	(0.79)	(1.13)	(0.03)	(0.81)
ID OH0186	2.1728***	-0.0358	0.0376	0.7979*	-0.0972***	0.0464
	(0.63)	(0.04)	(0.28)	(0.44)	(0.03)	(0.52)
ID OH0190	-2.2027***	-0.0390	1.0608***	-4.7415***	-0.0978***	-0.5316
	(0.72)	(0.03)	(0.41)	(0.69)	(0.03)	(0.49)
ID OH0191	-5.0347***	-0.1552***	4.0238***	-5.4286***	-0.2284***	5.1878***
	(1.13)	(0.04)	(1.14)	(1.34)	(0.04)	(1.29)
ID OH0193	6.9261***	1.4397***	11.6351***	4.4265***	1.3209***	11.6686***
	(2.05)	(0.28)	(2.41)	(1.06)	(0.26)	(1.78)
ID OH0195	26.5053***	0.4652***	8.9249***	24.6929***	0.4011***	9.0172***
	(0.60)	(0.06)	(0.74)	(0.78)	(0.06)	(0.79)
ID OH0196	3.3709***	0.3134***	0.6188	1.3408**	0.2608***	-0.1176
	(0.52)	(0.06)	(0.54)	(0.53)	(0.06)	(0.61)
ID OH0199	0.7492	-0.0492	2.5587**	-1.2802	-0.0835***	1.2064
	(1.35)	(0.04)	(1.11)	(0.83)	(0.03)	(0.99)
ID OH0200	19.9768***	0.4213***	10.1875***	15.2580***	0.3002***	8.2807***
	(1.04)	(0.05)	(1.41)	(1.04)	(0.05)	(1.48)
ID OH0201	-8.4467***	0.0515*	-2.3490***	-7.6969***	0.0574***	-1.6944***
	(0.98)	(0.03)	(0.72)	(0.56)	(0.02)	(0.64)
ID OH0202	-2.0869**	0.2483***	0.0391	-2.5199***	0.2370***	-0.0013
	(1.00)	(0.03)	(0.43)	(0.81)	(0.03)	(0.44)
ID OH0203	-3.9813***	0.0192	-0.6161	-3.5046***	0.0436	-0.5062
	(0.61)	(0.02)	(0.68)	(0.39)	(0.03)	(0.64)
ID OH0205	-2.1484**	0.1760***	-2.2789***	-1.5441***	0.2025***	-2.0551***
	(0.89)	(0.04)	(0.58)	(0.38)	(0.03)	(0.44)
ID OH0207	-3.8014***	0.1481	7.0892***	-2.8076***	0.1418*	8.4018***
	(0.79)	(0.09)	(2.42)	(0.68)	(0.07)	(2.26)
ID OH0209	6.8412***	0.3495***	0.7724**	6.6930***	0.3755***	0.3015
	(0.87)	(0.03)	(0.39)	(0.42)	(0.02)	(0.40)
ID OH0211	-2.3518*	0.2726***	-1.7950***	-2.6868***	0.2887***	-2.2633***
	(1.38)	(0.04)	(0.47)	(0.94)	(0.04)	(0.38)
ID OH0215	0.9374	-0.0770***	0.5539	-0.1226	-0.1064***	0.3174
	(0.76)	(0.03)	(0.48)	(0.46)	(0.02)	(0.46)
ID OH0217	28.0650***	0.6005***	8.6346***	22.8539***	0.4659***	6.1740***
	(2.58)	(0.05)	(0.75)	(2.33)	(0.05)	(0.91)
ID OH0218	32.2665***	0.2609***	21.0948***	18.9143***	-0.0804**	14.8071***
	(3.73)	(0.04)	(2.25)	(2.53)	(0.04)	(1.70)
ID OH0220	-2.2549*	-0.0995***	2.6976***	-0.7951	-0.0787***	3.9170***
	(1.18)	(0.04)	(0.74)	(0.66)	(0.03)	(0.93)

ID OH0221	7.7050***	1.1818***	7.8689***	8.5444***	1.1342***	9.8611***
	(1.08)	(0.23)	(1.87)	(1.11)	(0.22)	(1.91)
ID OH0222	3.8669***	0.1086***	0.7948**	3.9630***	0.1079***	1.0747***
	(0.79)	(0.03)	(0.33)	(0.68)	(0.02)	(0.39)
ID OH0223	3.8624**	0.2787***	-1.5629***	1.3370	0.2340***	-3.1903***
	(1.54)	(0.09)	(0.55)	(0.98)	(0.07)	(0.92)
ID OH0224	14.2253***	0.2788***	1.2891*	13.9234***	0.2423***	2.0517**
	(1.36)	(0.06)	(0.70)	(1.41)	(0.06)	(0.82)
ID OH0225	-3.7714***	0.2488***	-1.6628***	-3.6073***	0.2393***	-1.2378***
	(0.81)	(0.04)	(0.49)	(0.54)	(0.05)	(0.48)
ID OH0226	-4.7990***	-0.1905***	-1.5531**	-3.2507***	-0.1287***	-0.8264*
	(1.18)	(0.03)	(0.70)	(0.57)	(0.02)	(0.45)
ID OH0227	-5.5801***	0.0956***	-2.4038***	-4.7985***	0.1653***	-2.6540***
	(0.81)	(0.02)	(0.37)	(0.66)	(0.02)	(0.57)
ID OH0228	0.1340	0.2062	1.2358	-0.2057	0.2032	1.1344
	(1.18)	(0.15)	(0.83)	(1.03)	(0.14)	(0.75)
ID OH0230	1.6829***	0.0233	-2.3622***	-1.5127**	-0.0659	-3.4971***
	(0.56)	(0.05)	(0.60)	(0.60)	(0.04)	(0.75)
ID OH0232	1.1310	0.3891***	3.2843	-7.6098***	0.1843***	-1.3366
	(3.17)	(0.05)	(2.15)	(0.65)	(0.06)	(0.83)
ID OH0233	-5.8387***	0.2266***	-1.6836**	-6.6572***	0.2494***	-2.6627***
	(0.75)	(0.04)	(0.76)	(0.68)	(0.04)	(0.88)
ID OH0234	-3.8878***	-0.1190***	-0.5329	-11.4166***	-0.2845***	-4.8495***
	(0.72)	(0.02)	(0.54)	(1.08)	(0.04)	(0.86)
ID OH0237	8.6705***	0.0278	3.0866***	8.1998***	0.0156	2.7924***
	(0.70)	(0.03)	(0.77)	(0.65)	(0.03)	(0.76)
ID OH0238	24.9280***	0.2111***	6.0520***	23.4669***	0.1566***	6.1616***
	(1.72)	(0.04)	(0.61)	(1.68)	(0.04)	(0.66)
ID OH0239	-2.7247***	-0.0478	-4.1765***	-3.7871***	-0.0814**	-4.2423***
	(0.57)	(0.04)	(1.00)	(0.48)	(0.03)	(1.07)
ID OH0240	17.6742***	1.2340***	9.8205***	11.6033***	1.0957***	7.2107***
	(1.45)	(0.16)	(0.51)	(0.91)	(0.14)	(0.62)
ID OH0241	-1.6918	0.0438	0.1287	-3.8042***	0.0142	-1.1415**
	(1.96)	(0.03)	(0.87)	(0.76)	(0.04)	(0.53)
ID OH0242	5.1325***	-0.0472	1.5899***	6.0003***	-0.0313	2.3678***
	(0.56)	(0.03)	(0.41)	(0.65)	(0.02)	(0.50)
ID OH0244	-2.1153**	-0.2077***	-3.0581***	-2.0790***	-0.2082***	-2.8645***
	(0.85)	(0.02)	(0.59)	(0.66)	(0.02)	(0.51)
ID OH0245	1.4992**	0.0187	-0.9825***	1.7662***	0.0363	-0.7576*
	(0.68)	(0.02)	(0.27)	(0.66)	(0.03)	(0.41)
ID OH0246	19.2845***	0.2762***	16.2051***	17.4778***	0.1880***	16.5040***
	(1.71)	(0.04)	(0.75)	(1.85)	(0.04)	(0.99)
ID OH0247	3.1910***	-0.0992***	1.1042**	3.6184***	-0.0708***	1.5171***
	(0.59)	(0.02)	(0.45)	(0.50)	(0.02)	(0.46)
ID OH0248	-6.0560***	-0.0757***	-2.7555***	-6.6237***	-0.0479**	-3.6398***
	(0.81)	(0.02)	(0.34)	(0.63)	(0.02)	(0.51)
ID OH0251	113.2260***	3.1894***	32.0316***	-5.1245	-0.3921	-15.4455
	(13.67)	(0.45)	(1.31)	(7.00)	(0.51)	(9.56)
YRCODE 2	0.0992	0.0132	0.0282	-0.8944*	-0.0068	-0.6510
	(0.92)	(0.03)	(0.82)	(0.54)	(0.02)	(0.62)

YRCODE 3	0.3931	0.0434	0.4191	-1.5690***	0.0077	-0.8880
	(0.92)	(0.03)	(0.80)	(0.55)	(0.03)	(0.63)
YRCODE 4	1.3303	0.0777**	0.5536	-0.9459*	0.0357	-0.9473
	(0.90)	(0.03)	(0.79)	(0.54)	(0.03)	(0.65)
YRCODE 5	3.2235***	0.0991***	1.7127***	1.2991***	0.0573**	0.5796
	(0.80)	(0.03)	(0.65)	(0.47)	(0.02)	(0.49)
YRCODE 6	3.4171***	0.0998***	1.7686***	1.5870***	0.0630***	0.6934
	(0.79)	(0.03)	(0.65)	(0.47)	(0.02)	(0.49)
YRCODE 7	5.5650***	0.0878***	2.6658***	2.0341***	0.0125	0.5716
	(0.77)	(0.03)	(0.73)	(0.49)	(0.03)	(0.58)
YRCODE 8	6.2372***	0.1254***	3.1050***	2.0084***	0.0295	0.6817
	(0.82)	(0.03)	(0.72)	(0.47)	(0.03)	(0.61)
YRCODE 9	6.8323***	0.1599***	3.5020***	2.7269***	0.0654**	1.1712**
	(0.87)	(0.03)	(0.72)	(0.50)	(0.03)	(0.57)
YRCODE 10	7.3537***	0.1993***	3.9177***	3.1762***	0.1024***	1.5632***
	(1.04)	(0.03)	(0.72)	(0.63)	(0.03)	(0.57)
YRCODE 11	7.7467***	0.2446***	4.3829***	3.7507***	0.1481***	2.2180***
	(0.81)	(0.03)	(0.74)	(0.50)	(0.03)	(0.57)
YRCODE 12	6.2303***	0.2074***	4.1827***	4.3774***	0.1432***	3.6911***
	(0.87)	(0.03)	(0.67)	(0.60)	(0.03)	(0.62)
YRCODE 13	5.4326***	0.1786***	3.7256***	4.4027***	0.1305***	3.7541***
	(0.86)	(0.03)	(0.65)	(0.62)	(0.03)	(0.62)
YRCODE 14	4.4968***	0.1787***	3.3363***	3.0952***	0.1220***	3.0743***
	(0.80)	(0.03)	(0.64)	(0.61)	(0.03)	(0.62)
YRCODE 15	3.8278***	0.2176***	2.8356***	3.3205***	0.1787***	3.1310***
	(0.81)	(0.03)	(0.66)	(0.64)	(0.03)	(0.67)
YRCODE 16	3.3703***	0.2473***	2.5269***	2.4483***	0.2054***	2.4711***
	(0.81)	(0.04)	(0.67)	(0.63)	(0.04)	(0.65)
Number of Obs.	2,777	2,774	2,777	2,777	2,774	2,777
Adjusted R-Square	0.7602	0.6655	0.6746	0.9020	0.7396	0.7682
Overall Significance	92.79***	38.88***	55.30***	185.35***	55.23***	62.90***

Note: Robust standard errors are in parenthesis. *, **, and ***indicate 10%, 5%, and 1% significance levels, respectively.
Source: Institute of Museum and Library Services. *Public Library Statistics*, 1998-2019. Own Calculations

Appendix E: SAS Codes

```
proc import datafile="/home/u60615016/MySAS/Senior_Project/data working copy.xlsx"
        out=work.libstats
        dbms=xlsx
        replace;
getnames=yes;
sheet=SAS;
run;

proc print data=libstats (obs=20);
        run;

data libstats2;
        set libstats;
        percapcirc= totcirc/pop;
        percapkidattend= kidattend/pop;
        percapvisits= annualvisits/pop;
        percapmatexp= matexp/pop;
        percaplaborexp= laborexp/pop;
        percapopexp = totopexp/pop;
        percentmatexp = matexp/totopexp;
        percentlaborexp=laborexp/totopexp;
        plfpercap= plf/pop;
        items= phbooks+phaudio+phvideo;
        itemspercap= (phbooks+phaudio+phvideo)/pop;
        reftranspercap = reftrans/pop;
        percapinc= opinc/pop;
        fteperhr = fte/annualhrs;
```

```
        run;

proc print data=libstats2 ;
where year=2009;
run;

data libstats3;
        set libstats2;
        if YRCODE>11 then after=1;
        else after=0;
        if percentmatexp>.15 then highmat=1;
        else highmat=0;
        if percentlaborexp>.63 then highlabor=1;
        else highlabor=0;
        y2= yrcode*yrcode;
        y3= y2*yrcode;
        TY=levyyes*yrcode;
        TY2=levyyes*y2;
        TY3=levyyes*y3;
        DiD=Levyyes*after;
run;

proc print data = libstats3 (obs=20);
run;

proc freq data   =libstats3;
        table after*levyyes;
        run;

proc summary data=libstats3;
```

```
        var percapcirc percapkidattend percapvisits plfpercap itemspercap percentmatexp
percentlaborexp;
        output out = libstatssummary;
        run;

proc transpose data=libstatssummary out=longsummarylib (drop=_LABEL_);
run;

ods excel file="/home/u60615016/MySAS/Senior_Project/libstatsprimarysummary.xlsx";
proc print data=longsummarylib;
run;
ods excel close;

proc corr data= libstats3;
        var levyyes percapcirc percapkidattend percapvisits plfpercap itemspercap percentmatexp
percentlaborexp;
        run;

proc import datafile="/home/u60615016/MySAS/Senior_Project/data working copy.xlsx"
        out=work.libstatsrev
        dbms=xlsx
        replace;
getnames=yes;
sheet=SAS2;
run;

data libstatsrev2;
        set libstatsrev;
        percapcirc= totcirc/pop;
        percapkidattend= kidattend/pop;
        percapvisits= annualvisits/pop;
```

```
        percapmatexp= matexp/pop;
        percaplaborexp= laborexp/pop;
        percapopexp = totopexp/pop;
        percentmatexp = matexp/totopexp;
        percentlaborexp=laborexp/totopexp;
        plfpercap= plf/pop;
        items= phbooks+phaudio+phvideo;
        itemspercap= (phbooks+phaudio+phvideo)/pop;
        reftranspercap = reftrans/pop;
        percapinc= opinc/pop;
        fteperhr = fte/annualhrs;
        run;

data libstatsrev3;
        set libstatsrev2;
        if YRCODE>11 then after=1;
        else after=0;
        if percentmatexp>.15 then highmat=1;
        else highmat=0;
        if percentlaborexp>.63 then highlabor=1;
        else highlabor=0;
        y2= yrcode*yrcode;
        y3= y2*yrcode;
        TY=levyyes*yrcode;
        TY2=levyyes*y2;
        TY3=levyyes*y3;
        DiD=Levyyes*after;


run;
```

```
proc summary data=libstatsrev3;
	var percapcirc percapkidattend percapvisits plfpercap itemspercap percentmatexp
percentlaborexp;
	output out = libstatsrevsummary;
	run;

proc transpose data=libstatsrevsummary out=longsummarylibrev (drop=_LABEL_);
run;

ods excel file="/home/u60615016/MySAS/Senior_Project/libstatssecondarysummary.xlsx";
proc print data=longsummarylibrev;
run;
ods excel close;

Proc TTest Data = libstatsrev3 plots=none;
	Where Year<2009;
	Var plfpercap itemspercap highmat highlabor;
	class levyyes;
Run;

proc reg data=libstatsrev3;
	model percapcirc = itemspercap PLFpercap / vif;
run;

ods output ParameterEstimates=PEforlib1 DataSummary=OBSlib1 FitStatistics=AdjRsqlib1
Effects=OverallSiglib1;
proc surveyreg data= libstatsrev3;
	where after=0;
	class id YRCODE/ref=first;
	model1: Model percapcirc = id YRCODE LEVYYES TY TY2 TY3 /solution adjrsq;
	run;
```

```
ods output ParameterEstimates=PEforlib2 DataSummary=OBSlib2 FitStatistics=AdjRsqlib2
Effects=OverallSiglib2;
proc surveyreg data= libstatsrev3;
        where after=0;
        class id YRCODE/ref=first;
        model2: Model percapkidattend = id YRCODE LEVYYES TY TY2 TY3 /solution
adjrsq;
        run;

ods output ParameterEstimates=PEforlib3 DataSummary=OBSlib3 FitStatistics=AdjRsqlib3
Effects=OverallSiglib3;
proc surveyreg data= libstatsrev3;
        where after=0;
        class id YRCODE/ref=first;
        model3: Model percapvisits = id YRCODE LEVYYES TY TY2 TY3 /solution adjrsq;
        run;

ods output ParameterEstimates=PEforlib4 DataSummary=OBSlib4 FitStatistics=AdjRsqlib4
Effects=OverallSiglib4;
proc surveyreg data= libstatsrev3;
        where after=0;
        class id YRCODE/ref=first;
        model4: Model percapcirc = id YRCODE LEVYYES TY TY2 TY3 plfpercap
itemspercap highmat highlabor /solution adjrsq;
        run;


ods output ParameterEstimates=PEforlib5 DataSummary=OBSlib5 FitStatistics=AdjRsqlib5
Effects=OverallSiglib5;
proc surveyreg data=libstatsrev3 plots=none;
```

```
        where after=0;
        class id YRCODE/ref=first;
        model5: Model percapkidattend = id YRCODE LEVYYES TY TY2 TY3 plfpercap
itemspercap highmat highlabor /solution adjrsq;
        run;

ods output ParameterEstimates=PEforlib6 DataSummary=OBSlib6 FitStatistics=AdjRsqlib6
Effects=OverallSiglib6;
proc surveyreg data=libstatsrev3 plots=none;
        class id YRCODE/ref=first;
        where after=0;
        model6: Model percapvisits = id YRCODE LEVYYES TY TY2 TY3 plfpercap
itemspercap highmat highlabor /solution adjrsq;
        run;

Data trend_table_long;
        length Model $15; /* Makes sure the variable Model has the right length and its values
are not truncated */
        length Parameter $30; /* Makes sure the variable Parameter has the right length and its
values are not truncated */
        set PEforlib1 PEforlib2 PEforlib3 PEforlib4 PEforlib5 PEforlib6  indsname=M;
/*"indsname" creates an indicator variable (here I call it "M") that tracks the name of databases
use in the "set" statement */
        keep Model Parameter EditedResults;
        if      M="WORK.PEFORLIB1" then Model="Model1";
                else if M="WORK.PEFORLIB2" then model="Model2";
                else if M="WORK.PEFORLIB3" then model="Model3";
                else if M="WORK.PEFORLIB4" then model="Model4";
                else if M="WORK.PEFORLIB5" then model="Model5";
                else if M="WORK.PEFORLIB6" then model="Model6";
```

```
        where estimate ne 0; /* drops reference variables*/

        if probt le 0.01 then Star= "***";
        else if probt le .05 then Star= "**";
        Else if probt le .1 then Star="*";

        results=Estimate;
        EditedResults=cats(put(Results,comma16.4),Star); /* put creates character variable from
numerical variable*/
        output;
        Star="";
        results=stderr;
        EditedResults=Cats("(",put(Results,comma16.2),")");
        output;
run;

/* We sometimes need this sorting step when we have multiple regression models */
proc sort data=trend_table_long out=Trend_table_sorted;
        by Model Parameter;
run;

/* Step 2: Create separate results columns (in the form of separate databases) corresponding to
each model */
data Model1Results (rename=(EditedResults=Model1))
                Model2Results (rename=(EditedResults=Model2))
                Model3Results (rename=(EditedResults=Model3))
                Model4Results (rename=(EditedResults=Model4))
                Model5Results (rename=(EditedResults=Model5))
                Model6Results (rename=(EditedResults=Model6));

        set trend_table_sorted;
```

```
        if Model="Model1" then output Model1Results;
                else if Model="Model2" then output Model2Results;
                else if Model="Model3" then output Model3Results ;
                else if Model="Model4" then output Model4Results;
                else if Model="Model5" then output Model5Results ;
                else if Model="Model6" then output Model6Results;
                drop Model;

run;

/* Step 3: Create the final results table that would include all models side-by-side*/
data trend_Table_Wide;
        merge Model1Results Model2Results Model3Results Model4Results Model5Results
Model6Results;
        by Parameter;
        if mod(_n_,2)=1 then Regressors=Parameter;

        length Order 8;
        if Parameter= "Intercept " then Order=1;
        else if parameter= "ID" then order=2;
        else if Parameter= "YRCODE" then Order=3;
        else if Parameter= "levyyes" then order=4;
        else if Parameter= "TY" then order=5;
        else if parameter= "TY2" then order=6;
        else if parameter= "TY3" then order=7;
        else if parameter = "itemspercap" then order=8;
        else if parameter= "plfpercap" then order=11;


run;
```

```
/* Order the variables in the results table */
proc sort data=trend_Table_Wide out=trend_Table_Wide_Sorted;
	by Order;
run;

/*create rows for other stats*/
/*row for number of obs*/
data NumofObs (keep=Label1 Model1 Model2 Model3 Model4 Model5 Model6);
	merge  Obslib1(rename=(nvalue1=NVModel1))Obslib2(rename=(nvalue1=NVModel2))
			Obslib3(rename=(nvalue1=NVModel3))
Obslib4(rename=(nvalue1=NVModel4))
			Obslib5(rename=(nvalue1=NVModel5))
Obslib6(rename=(nvalue1=NVModel6));
	by Label1;
	where Label1="Number of Observations";

	Model1=put(NVModel1,comma16.0);
	Model2=put(NVModel2,comma16.0);
	Model3=put(NVModel3,comma16.0);
	Model4=put(NVModel4,comma16.0);
	Model5=put(NVModel5,comma16.0);
	Model6=put(NVModel6,comma16.0);
run;

/*row for number of adjrsq*/

data ADJRSQ (keep=Label1 Model1 Model2 Model3 Model4 Model5 Model6 );
	merge  AdjRsqlib1(rename=(cvalue1=model1)) AdjRsqlib2(rename=(cvalue1=model2))
	AdjRsqlib3(rename=(cvalue1=model3)) AdjRsqlib4(rename=(cvalue1=model4))
	AdjRsqlib5(rename=(cvalue1=model5)) AdjRsqlib6(rename=(cvalue1=model6));
```

```
        where Label1="Adjusted R-Square";

run;

/*row for overall signifigance*/
data OSM1 (rename=(EditedValue=Model1)) OSM2 (rename=(EditedValue=Model2))
                OSM3 (rename=(EditedValue=Model3))OSM4 (rename=(EditedValue=Model4))
                OSM5 (rename=(EditedValue=Model5))OSM6 (rename=(EditedValue=Model6))
;
        set OverallSiglib1 OverallSiglib2 OverallSiglib3 OverallSiglib4 OverallSiglib5
OverallSiglib6 indsname=M;
        where Effect="Model";
        Label1="Overall Significance";

        if probf le 0.01 then Star= "***";
        else if probf le .05 then Star= "**";
        Else if probf le .1 then Star="*";

        EditedValue=cats(put(FValue,comma16.2),Star);

        if M="WORK.OVERALLSIGLIB1" then output OSM1;
        else if M="WORK.OVERALLSIGLIB2" then output OSM2;
        else if M="WORK.OVERALLSIGLIB3" then output OSM3;
        else if M="WORK.OVERALLSIGLIB4" then output OSM4;
        else if M="WORK.OVERALLSIGLIB5" then output OSM5;
        else if M="WORK.OVERALLSIGLIB6" then output OSM6;
        keep Label1 EditedValue ;
run;

Data OverallSig;
        merge OSM1 OSM2 OSM3 OSM4 OSM5 OSM6;
```

```
        by Label1;
run;

/*combine all rows for other statistics*/
data OtherStat;
        set NumofObs ADJRSQ OverallSig ;
        rename Label1=Regressors;

run;

/*add other stats to results table*/

data trend_Wide_Sorted_withstats;
        set trend_Table_Wide_Sorted OtherStat;

        run;


/* Print the clean results table */
ods excel file="/home/u60615016/MySAS/seniorprojectparalleltrend.xlsx"
options(Embedded_Titles="ON" Embedded_Footnotes="ON"); /*Use the path to your MySAS
folder */
Title "Parallel Trend Control Group and Test group";
footnote justify=left "Note: Robust standard errors are in parenthesis. *, **, and ***
indicate 10%, 5%, and 1% significance levels, respectively.";
proc print data=trend_Wide_Sorted_withstats noobs;
        var  regressors  ;
        var model1 model2 model3 model4 model5 model6  / style(header)={just=center}
style(data)={just=center tagattr="type:String"};

        format regressors $VariableName. ;
```

```
        /*$ for character variable then .(period) to end name of variable*/
run;
ods excel close;

ods output ParameterEstimates=PEforlib7 DataSummary=OBSlib7 FitStatistics=AdjRsqlib7
Effects=OverallSiglib7;
proc surveyreg data= libstatsrev3;
        class id yrcode/ref=first;
        where year<2011;
        model7: Model percapcirc = id yrcode DiD /solution adjrsq;
        run;

ods output ParameterEstimates=PEforlib8 DataSummary=OBSlib8 FitStatistics=AdjRsqlib8
Effects=OverallSiglib8;
proc surveyreg data= libstatsrev3;
        class id yrcode/ref=first;
        where year<2011;
        model8: Model percapkidattend = id yrcode DiD /solution adjrsq;
        run;

ods output ParameterEstimates=PEforlib9 DataSummary=OBSlib9 FitStatistics=AdjRsqlib9
Effects=OverallSiglib9;
proc surveyreg data= libstatsrev3;
        class id yrcode/ref=first;
        where year<2011;
        model9: Model percapvisits = id yrcode DiD /solution adjrsq;
        run;


ods output ParameterEstimates=PEforlib10 DataSummary=OBSlib10 FitStatistics=AdjRsqlib10
Effects=OverallSiglib10;
```

```
proc surveyreg data=libstatsrev3 plots=none;
        class id YRCODE/ref=first;
        where year<2011;
        model10: Model percapcirc = id YRCODE DiD plfpercap itemspercap highmat highlabor
/solution adjrsq;
        run;

ods output ParameterEstimates=PEforlib11 DataSummary=OBSlib11 FitStatistics=AdjRsqlib11
Effects=OverallSiglib11;
proc surveyreg data=libstatsrev3 plots=none;
        class id yrcode/ref=first;
        where year<2011;
        model11: Model percapkidattend = id yrcode DiD plfpercap itemspercap highmat
highlabor /solution adjrsq;
        run;

ods output ParameterEstimates=PEforlib12 DataSummary=OBSlib12 FitStatistics=AdjRsqlib12
Effects=OverallSiglib12;
proc surveyreg data= libstatsrev3;
        class id yrcode/ref=first;
        where year<2011;
        model12: Model percapvisits = id yrcode DiD plfpercap itemspercap highmat
highlabor/solution adjrsq;
        run;




Data regression_table_long;
```

```
length Model $15; /* Makes sure the variable Model has the right length and its values are not truncated */
length Parameter $30; /* Makes sure the variable Parameter has the right length and its values are not truncated */
set PEforlib7 PEforlib8 PEforlib9 PEforlib10 PEforlib11 PEforlib12 indsname=M; /*"indsname" creates an indicator variable (here I call it "M") that tracks the name of databases use in the "set" statement */
keep Model Parameter EditedResults;
if M="WORK.PEFORLIB7" then Model="Model7";
else if M="WORK.PEFORLIB8" then model="Model8";
else if M="WORK.PEFORLIB9" then model="Model9";
else if M="WORK.PEFORLIB10" then model="Model10";
else if M="WORK.PEFORLIB11" then model="Model11";
else if M="WORK.PEFORLIB12" then model="Model12";

where estimate ne 0; /* drops reference variables*/

if probt le 0.01 then Star= "***";
else if probt le .05 then Star= "**";
Else if probt le .1 then Star="*";


results=Estimate;
EditedResults=cats(put(Results,comma16.4),Star); /* put creates character variable from numerical variable*/
output;
Star="";
results=stderr;
EditedResults=Cats("(",put(Results,comma16.2),")");
output;
run;
```

```
/* We sometimes need this sorting step when we have multiple regression models */
proc sort data=regression_table_long out=regression_table_sorted;
	by Model Parameter;
run;


/* Step 2: Create separate results columns (in the form of separate databases) corresponding to
each model */
data Model7Results (rename=(EditedResults=Model7))
		Model8Results (rename=(EditedResults=Model8))
		Model9Results (rename=(EditedResults=Model9))
		Model10Results (rename=(EditedResults=Model10))
		Model11Results (rename=(EditedResults=Model11))
		Model12Results (rename=(EditedResults=Model12));

	set regression_table_sorted;
	if Model="Model7" then output Model7Results;
		else if Model="Model8" then output Model8Results ;
		else if Model="Model9" then output Model9Results;
		else if Model="Model10" then output Model10Results;
		else if Model="Model11" then output Model11Results;
		else if Model="Model12" then output Model12Results;
		drop Model;

run;

/* Step 3: Create the final results table that would include all models side-by-side*/
data regression_Table_Wide;
	merge Model7Results Model8Results Model9Results Model10Results Model11Results
Model12Results;
```

```
        by Parameter;
        if mod(_n_,2)=1 then Regressors=Parameter;

        length Order 8;
        if Parameter= "Intercept " then Order=1;
        else if parameter= "ID" then order=2;
        else if Parameter= "YRCODE" then Order=3;
        else if Parameter= "levyyes" then order=4;
        else if parameter = "itemspercap" then order=5;

        else if parameter= "plfpercap" then order=8;


run;


/* Order the variables in the results table */
proc sort data=regression_Table_Wide out=regression_Table_Wide_Sorted;
        by Order;
run;

/*create rows for other stats*/

/*row for number of obs*/
data NumofObs2 (keep=Label1 Model7 Model8 Model9 Model10 Model11 Model12);
        merge  Obslib7(rename=(nvalue1=NVModel7))Obslib8(rename=(nvalue1=NVModel8))

        Obslib9(rename=(nvalue1=NVModel9))Obslib10(rename=(nvalue1=NVModel10))

        Obslib11(rename=(nvalue1=NVModel11))Obslib12(rename=(nvalue1=NVModel12));
        by Label1;
```

```
        where Label1="Number of Observations";

        Model7=put(NVModel7,comma16.0);
        Model8=put(NVModel8,comma16.0);
        Model9=put(NVModel9,comma16.0);
        Model10=put(NVModel10,comma16.0);
        Model11=put(NVModel11,comma16.0);
        Model12=put(NVModel12,comma16.0);

run;

/*row for number of adjrsq*/
data ADJRSQ2 (keep=Label1 Model7 Model8 Model9 Model10 Model11 Model12);
        merge  AdjRsqlib7(rename=(cvalue1=model7)) AdjRsqlib8(rename=(cvalue1=model8))
                AdjRsqlib9(rename=(cvalue1=model9))
AdjRsqlib10(rename=(cvalue1=model10))
                AdjRsqlib11(rename=(cvalue1=model11))
AdjRsqlib12(rename=(cvalue1=model12));

        where Label1="Adjusted R-Square";

run;

/*row for overall signifigance*/
data OSM7 (rename=(EditedValue=Model7)) OSM8 (rename=(EditedValue=Model8))
                OSM9 (rename=(EditedValue=Model9)) OSM10
(rename=(EditedValue=Model10))
                OSM11 (rename=(EditedValue=Model11)) OSM12
(rename=(EditedValue=Model12));
        set OverallSiglib7 OverallSiglib8 OverallSiglib9 OverallSiglib10
                OverallSiglib11 OverallSiglib12 indsname=M;
```

```
        where Effect="Model";
        Label1="Overall Significance";

        if probf le 0.01 then Star= "***";
        else if probf le .05 then Star= "**";
        Else if probf le .1 then Star="*";

        EditedValue=cats(put(FValue,comma16.2),Star);

        if M="WORK.OVERALLSIGLIB7" then output OSM7;
        else if M="WORK.OVERALLSIGLIB8" then output OSM8;
        else if M="WORK.OVERALLSIGLIB9" then output OSM9;
        else if M="WORK.OVERALLSIGLIB10" then output OSM10;
        else if M="WORK.OVERALLSIGLIB11" then output OSM11;
        else if M="WORK.OVERALLSIGLIB12" then output OSM12;

        keep Label1 EditedValue ;
run;

Data OverallSig2;
        merge osm7 OSM8 osm9 osm10 osm11 osm12 ;
        by Label1;
run;

/*combine all rows for other statistics*/
data OtherStat2;
        set NumofObs2 ADJRSQ2 OverallSig2 ;
        rename Label1=Regressors;

run;
```

```
/*add other stats to results table*/

data regression_Wide_Sorted_withstats;
	set regression_Table_Wide_Sorted OtherStat2;

	run;

/* Print the clean results table */
ods excel file="/home/u60615016/MySAS/seniorprojectregressions.xlsx"
options(Embedded_Titles="ON" Embedded_Footnotes="ON"); /*Use the path to your MySAS
folder */
Title "2010: Post Recession impacts";
footnote justify=left "Note: Robust standard errors are in parenthesis. *, **, and ***
indicate 10%, 5%, and 1% significance levels, respectively.";
proc print data=regression_Wide_Sorted_withstats noobs;
	var  regressors  ;
	var model7 model8 model9 model10 model11 model12 / style(header)={just=center}
style(data)={just=center tagattr="type:String"};

	format regressors $VariableName. ;
	/*$ for character variable then .(period) to end name of variable*/
run;
ods excel close;

 ods output ParameterEstimates=PEforlib13 DataSummary=OBSlib13 FitStatistics=AdjRsqlib13
Effects=OverallSiglib13;
proc surveyreg data= libstatsrev3;
	where year<2012;
	class id YRCODE/ref=first;
	model13: Model percapcirc = id YRCODE DiD  /solution adjrsq;
	run;
```

```
ods output ParameterEstimates=PEforlib14 DataSummary=OBSlib14 FitStatistics=AdjRsqlib14
Effects=OverallSiglib14;
proc surveyreg data= libstatsrev3;
        where year<2012;
        class id YRCODE/ref=first;
        model14: Model percapkidattend = id YRCODE DiD  /solution adjrsq;
        run;

ods output ParameterEstimates=PEforlib15 DataSummary=OBSlib15 FitStatistics=AdjRsqlib15
Effects=OverallSiglib15;
proc surveyreg data= libstatsrev3;
        where year<2012;
        class id YRCODE/ref=first;
        model15: Model percapvisits = id YRCODE DiD /solution adjrsq;
        run;

ods output ParameterEstimates=PEforlib16 DataSummary=OBSlib16 FitStatistics=AdjRsqlib16
Effects=OverallSiglib16;
proc surveyreg data= libstatsrev3;
        where year<2012;
        class id YRCODE/ref=first;
        model16: Model percapcirc = id YRCODE DiD plfpercap itemspercap highmat highlabor
/solution adjrsq;
        run;


ods output ParameterEstimates=PEforlib17 DataSummary=OBSlib17 FitStatistics=AdjRsqlib17
Effects=OverallSiglib17;
proc surveyreg data=libstatsrev3 plots=none;
        where year<2012;
```

```
	class id YRCODE/ref=first;
	model17: Model percapkidattend = id YRCODE DiD plfpercap itemspercap highmat
highlabor highlabor /solution adjrsq;
	run;


ods output ParameterEstimates=PEforlib18 DataSummary=OBSlib18 FitStatistics=AdjRsqlib18
Effects=OverallSiglib18;
proc surveyreg data=libstatsrev3 plots=none;
	class id YRCODE/ref=first;
	where year<2012;
	model18: Model percapvisits = id YRCODE DiD plfpercap itemspercap highmat
highlabor /solution adjrsq;
	run;

Data reg13_table_long;
	length Model $15; /* Makes sure the variable Model has the right length and its values
are not truncated */
	length Parameter $30; /* Makes sure the variable Parameter has the right length and its
values are not truncated */
	set PEforlib13 PEforlib14 PEforlib15 PEforlib16 PEforlib17 PEforlib18 indsname=M;
/*"indsname" creates an indicator variable (here I call it "M") that tracks the name of databases
use in the "set" statement */
	keep Model Parameter EditedResults;
	if	M="WORK.PEFORLIB13" then Model="Model13";
		else if M="WORK.PEFORLIB14" then model="Model14";
		else if M="WORK.PEFORLIB15" then model="Model15";
		else if M="WORK.PEFORLIB16" then model="Model16";
		else if M="WORK.PEFORLIB17" then model="Model17";
		else if M="WORK.PEFORLIB18" then model="Model18";
```

```
        where estimate ne 0; /* drops reference variables*/

        if probt le 0.01 then Star= "***";
        else if probt le .05 then Star= "**";
        Else if probt le .1 then Star="*";


        results=Estimate;
        EditedResults=cats(put(Results,comma16.4),Star); /* put creates character variable from
numerical variable*/
        output;
        Star="";
        results=stderr;
        EditedResults=Cats("(",put(Results,comma16.2),")");
        output;
run;

/* We sometimes need this sorting step when we have multiple regression models */
proc sort data=reg13_table_long out=reg13_table_sorted;
        by Model Parameter;
run;


/* Step 2: Create separate results columns (in the form of separate databases) corresponding to
each model */
data Model13Results (rename=(EditedResults=Model13))
                Model14Results (rename=(EditedResults=Model14))
                Model15Results (rename=(EditedResults=Model15))
                Model16Results (rename=(EditedResults=Model16))
                Model17Results (rename=(EditedResults=Model17))
                Model18Results (rename=(EditedResults=Model18));
```

```
	set reg13_table_sorted;
	if Model="Model13" then output Model13Results;
		else if Model="Model14" then output Model14Results ;
		else if Model="Model15" then output Model15Results;
		else if Model="Model16" then output Model16Results;
		else if Model="Model17" then output Model17Results ;
		else if Model="Model18" then output Model18Results;
	drop Model;

run;

/* Step 3: Create the final results table that would include all models side-by-side*/
data reg13_Table_Wide;
	merge Model13Results Model14Results Model15Results Model16Results
Model17Results Model18Results ;
	by Parameter;
	if mod(_n_,2)=1 then Regressors=Parameter;

	length Order 8;
	if Parameter= "Intercept " then Order=1;
	else if parameter= "ID" then order=2;
	else if Parameter= "YRCODE" then Order=3;
	else if Parameter= "DiD" then order=4;
	else if parameter = "itemspercap" then order=5;
	else if parameter= "percapmatexp" then order=6;
	else if parameter= "percaplaborexp" then order=7;
	else if parameter= "plfpercap" then order=8;
run;

/* Order the variables in the results table */
```

```
proc sort data=reg13_Table_Wide out=reg13_Table_Wide_Sorted;
	by Order;
run;

/*create rows for other stats*/
/*row for number of obs*/
data NumofObs13 (keep=Label1 Model13 Model14 Model15 Model16 Model17 Model18);
	merge
Obslib13(rename=(nvalue1=NVModel13))Obslib14(rename=(nvalue1=NVModel14))
Obslib15(rename=(nvalue1=NVModel15))

	Obslib16(rename=(nvalue1=NVModel16))Obslib17(rename=(nvalue1=NVModel17))
Obslib18(rename=(nvalue1=NVModel18));
	by Label1;
	where Label1="Number of Observations";

	Model13=put(NVModel13,comma16.0);
	Model14=put(NVModel14,comma16.0);
	Model15=put(NVModel15,comma16.0);
	Model16=put(NVModel16,comma16.0);
	Model17=put(NVModel17,comma16.0);
	Model18=put(NVModel18,comma16.0);

run;

/*row for number of adjrsq*/

data ADJRSQ13 (keep=Label1 Model13 Model14 Model15 Model16 Model17 Model18);
	merge  AdjRsqlib13(rename=(cvalue1=model13))
AdjRsqlib14(rename=(cvalue1=model14)) AdjRsqlib15(rename=(cvalue1=model15))
```

```
                AdjRsqlib16(rename=(cvalue1=model16))
AdjRsqlib17(rename=(cvalue1=model17)) AdjRsqlib18(rename=(cvalue1=model18));

        where Label1="Adjusted R-Square";

run;

/*row for overall signifigance*/
data OSM13 (rename=(EditedValue=Model13)) OSM14 (rename=(EditedValue=Model14))
OSM15 (rename=(EditedValue=Model15))
                OSM16 (rename=(EditedValue=Model16)) OSM17
(rename=(EditedValue=Model17)) OSM18 (rename=(EditedValue=Model18))  ;
        set OverallSiglib13 OverallSiglib14 OverallSiglib15 OverallSiglib16 OverallSiglib17
OverallSiglib18 indsname=M;
        where Effect="Model";
        Label1="Overall Significance";

        if probf le 0.01 then Star= "***";
        else if probf le .05 then Star= "**";
        Else if probf le .1 then Star="*";


        EditedValue=cats(put(FValue,comma16.2),Star);

        if M="WORK.OVERALLSIGLIB13" then output OSM13;
        else if M="WORK.OVERALLSIGLIB14" then output OSM14;
        else if M="WORK.OVERALLSIGLIB15" then output OSM15;
        else if M="WORK.OVERALLSIGLIB16" then output OSM16;
        else if M="WORK.OVERALLSIGLIB17" then output OSM17;
        else if M="WORK.OVERALLSIGLIB18" then output OSM18;
```

```
        keep Label1 EditedValue ;
run;

Data OverallSig13;
        merge osm13 OSM14 osm15 osm16 OSM17 osm18;
        by Label1;
run;

/*combine all rows for other statistics*/
data OtherStat13;
        set NumofObs13 ADJRSQ13 OverallSig13 ;
        rename Label1=Regressors;

run;

/*add other stats to results table*/

data reg13_Wide_Sorted_withstats;
        set reg13_Table_Wide_Sorted OtherStat13;

        run;

/* Print the clean results table */
ods excel file="/home/u60615016/MySAS/seniorprojectregressions2.xlsx"
options(Embedded_Titles="ON" Embedded_Footnotes="ON"); /*Use the path to your MySAS
folder */
Title "Robustness Check on Regression to 2010";
footnote justify=left "Note: Robust standard errors are in parenthesis. *, **, and ***
indicate 10%, 5%, and 1% significance levels, respectively.";
proc print data=reg13_Wide_Sorted_withstats noobs;
        var  regressors  ;
```

```
	var model13 model14 model15 model16 model17 model18 / style(header)={just=center}
style(data)={just=center tagattr="type:String"};

	format regressors $VariableName. ;
	/*$ for character variable then .(period) to end name of variable*/
run;
ods excel close;

ods output ParameterEstimates=PEforlib19 DataSummary=OBSlib19 FitStatistics=AdjRsqlib19
Effects=OverallSiglib19;
proc surveyreg data= libstatsrev3;
	where year<2014;
	class id YRCODE/ref=first;
	model19: Model percapcirc = id YRCODE DiD /solution adjrsq;
	run;

ods output ParameterEstimates=PEforlib20 DataSummary=OBSlib20 FitStatistics=AdjRsqlib20
Effects=OverallSiglib20;
proc surveyreg data= libstatsrev3;
	where year<2014;
	class id YRCODE/ref=first;
	model20: Model percapkidattend = id YRCODE DiD /solution adjrsq;
	run;

ods output ParameterEstimates=PEforlib21 DataSummary=OBSlib21 FitStatistics=AdjRsqlib21
Effects=OverallSiglib21;
proc surveyreg data= libstatsrev3;
	where year<2014;
	class id YRCODE/ref=first;
	model21: Model percapvisits = id YRCODE DiD /solution adjrsq;
	run;
```

```
ods output ParameterEstimates=PEforlib22 DataSummary=OBSlib22 FitStatistics=AdjRsqlib22
Effects=OverallSiglib22;
proc surveyreg data= libstatsrev3;
        where year<2014;
        class id YRCODE/ref=first;
        model22: Model percapcirc = id YRCODE DiD plfpercap itemspercap highmat highlabor
/solution adjrsq;
        run;


ods output ParameterEstimates=PEforlib23 DataSummary=OBSlib23 FitStatistics=AdjRsqlib23
Effects=OverallSiglib23;
proc surveyreg data=libstatsrev3 plots=none;
        where year<2014;
        class id YRCODE/ref=first;
        model23: Model percapkidattend = id YRCODE DiD plfpercap itemspercap highmat
highlabor /solution adjrsq;
        run;


ods output ParameterEstimates=PEforlib24 DataSummary=OBSlib24 FitStatistics=AdjRsqlib24
Effects=OverallSiglib24;
proc surveyreg data=libstatsrev3 plots=none;
        class id YRCODE/ref=first;
        where year<2014;
        model24: Model percapvisits = id YRCODE DiD plfpercap itemspercap highmat
highlabor /solution adjrsq;
        run;

Data reg3_table_long;
```

```
        length Model $15; /* Makes sure the variable Model has the right length and its values
are not truncated */
        length Parameter $30; /* Makes sure the variable Parameter has the right length and its
values are not truncated */
        set PEforlib19 PEforlib20 PEforlib21 PEforlib22 PEforlib23 PEforlib24 indsname=M;
/*"indsname" creates an indicator variable (here I call it "M") that tracks the name of databases
use in the "set" statement */
        keep Model Parameter EditedResults;
        if      M="WORK.PEFORLIB19" then Model="Model19";
                else if M="WORK.PEFORLIB20" then model="Model20";
                else if M="WORK.PEFORLIB21" then model="Model21";
                else if M="WORK.PEFORLIB22" then model="Model22";
                else if M="WORK.PEFORLIB23" then model="Model23";
                else if M="WORK.PEFORLIB24" then model="Model24";

        where estimate ne 0; /* drops reference variables*/

        if probt le 0.01 then Star= "***";
        else if probt le .05 then Star= "**";
        Else if probt le .1 then Star="*";



        results=Estimate;
        EditedResults=cats(put(Results,comma16.4),Star); /* put creates character variable from
numerical variable*/
        output;
        Star="";
        results=stderr;
        EditedResults=Cats("(",put(Results,comma16.2),")");
        output;
run;
```

```
/* We sometimes need this sorting step when we have multiple regression models */
proc sort data=reg3_table_long out=reg3_table_sorted;
        by Model Parameter;
run;


/* Step 2: Create separate results columns (in the form of separate databases) corresponding to
each model */
data Model19Results (rename=(EditedResults=Model19))
                Model20Results (rename=(EditedResults=Model20))
                Model21Results (rename=(EditedResults=Model21))
                Model22Results (rename=(EditedResults=Model22))
                Model23Results (rename=(EditedResults=Model23))
                Model24Results (rename=(EditedResults=Model24));

        set reg3_table_sorted;
        if Model="Model19" then output Model19Results;
                else if Model="Model20" then output Model20Results ;
                else if Model="Model21" then output Model21Results;
                else if Model="Model22" then output Model22Results;
                else if Model="Model23" then output Model23Results ;
                else if Model="Model24" then output Model24Results;
        drop Model;

run;

/* Step 3: Create the final results table that would include all models side-by-side*/
data reg3_Table_Wide;
        merge Model19Results Model20Results Model21Results Model22Results
Model23Results Model24Results ;
```

```
        by Parameter;
        if mod(_n_,2)=1 then Regressors=Parameter;

        length Order 8;
        if Parameter= "Intercept " then Order=1;
        else if parameter= "ID" then order=2;
        else if Parameter= "YRCODE" then Order=3;
        else if Parameter= "DiD" then order=4;
        else if parameter = "itemspercap" then order=5;
        else if parameter= "percapmatexp" then order=6;
        else if parameter= "percaplaborexp" then order=7;
        else if parameter= "plfpercap" then order=8;
run;

/* Order the variables in the results table */
proc sort data=reg3_Table_Wide out=reg3_Table_Wide_Sorted;
        by Order;
run;

/*create rows for other stats*/
/*row for number of obs*/
data NumofObs3 (keep=Label1 Model19 Model20 Model21 Model22 Model23 Model24);
        merge
Obslib19(rename=(nvalue1=NVModel19))Obslib20(rename=(nvalue1=NVModel20))
Obslib21(rename=(nvalue1=NVModel21))

        Obslib22(rename=(nvalue1=NVModel22))Obslib23(rename=(nvalue1=NVModel23))
Obslib24(rename=(nvalue1=NVModel24));
        by Label1;
        where Label1="Number of Observations";
```

```
        Model19=put(NVModel19,comma16.0);
        Model20=put(NVModel20,comma16.0);
        Model21=put(NVModel21,comma16.0);
        Model22=put(NVModel22,comma16.0);
        Model23=put(NVModel23,comma16.0);
        Model24=put(NVModel24,comma16.0);

run;

/*row for number of adjrsq*/
data ADJRSQ3 (keep=Label1 Model19 Model20 Model21 Model22 Model23 Model24);
        merge  AdjRsqlib19(rename=(cvalue1=model19))
AdjRsqlib20(rename=(cvalue1=model20)) AdjRsqlib21(rename=(cvalue1=model21))
                AdjRsqlib22(rename=(cvalue1=model22))
AdjRsqlib23(rename=(cvalue1=model23)) AdjRsqlib24(rename=(cvalue1=model24));

        where Label1="Adjusted R-Square";

run;

/*row for overall signifigance*/
data OSM19 (rename=(EditedValue=Model19)) OSM20 (rename=(EditedValue=Model20))
OSM21 (rename=(EditedValue=Model21))
                OSM22 (rename=(EditedValue=Model22)) OSM23
(rename=(EditedValue=Model23)) OSM24 (rename=(EditedValue=Model24))  ;
        set OverallSiglib19 OverallSiglib20 OverallSiglib21 OverallSiglib22 OverallSiglib23
OverallSiglib24 indsname=M;
        where Effect="Model";
        Label1="Overall Significance";

        if probf le 0.01 then Star= "***";
```

```
        else if probf le .05 then Star= "**";
        Else if probf le .1 then Star="*";
        EditedValue=cats(put(FValue,comma16.2),Star);

        if M="WORK.OVERALLSIGLIB19" then output OSM19;
        else if M="WORK.OVERALLSIGLIB20" then output OSM20;
        else if M="WORK.OVERALLSIGLIB21" then output OSM21;
        else if M="WORK.OVERALLSIGLIB22" then output OSM22;
        else if M="WORK.OVERALLSIGLIB23" then output OSM23;
        else if M="WORK.OVERALLSIGLIB24" then output OSM24;

        keep Label1 EditedValue ;
run;

Data OverallSig3;
        merge osm19 OSM20 osm21 osm22 OSM23 osm24;
        by Label1;
run;

/*combine all rows for other statistics*/
data OtherStat3;
        set NumofObs3 ADJRSQ3 OverallSig3 ;
        rename Label1=Regressors;

run;

/*add other stats to results table*/

data reg3_Wide_Sorted_withstats;
        set reg3_Table_Wide_Sorted OtherStat3;
```

```
        run;


/* Print the clean results table */
ods excel file="/home/u60615016/MySAS/seniorprojectregressions3.xlsx"
options(Embedded_Titles="ON" Embedded_Footnotes="ON"); /*Use the path to your MySAS
folder */
Title "Regression Analysis Effect of Levy Post Recession";
footnote justify=left "Note: Robust standard errors are in parenthesis. *, **, and ***
indicate 10%, 5%, and 1% significance levels, respectively.";
proc print data=reg3_Wide_Sorted_withstats noobs;
        var  regressors  ;
        var model19 model20 model21 model22 model23 model24 / style(header)={just=center}
style(data)={just=center tagattr="type:String"};

        format regressors $VariableName. ;
        /*$ for character variable then .(period) to end name of variable*/
run;
ods excel close;


ods output ParameterEstimates=PEforlib25 DataSummary=OBSlib25 FitStatistics=AdjRsqlib25
Effects=OverallSiglib25;
proc surveyreg data=libstatsrev3 plots=none;
        class id YRCODE/ref=first;
        where year<2011;
        model10: Model percapcirc = id YRCODE DiD plfpercap highmat highlabor /solution
adjrsq;
        run;
```

```
ods output ParameterEstimates=PEforlib26 DataSummary=OBSlib26 FitStatistics=AdjRsqlib26
Effects=OverallSiglib26;
proc surveyreg data=libstatsrev3 plots=none;
        class id yrcode/ref=first;
        where year<2011;
        model11: Model percapkidattend = id yrcode DiD plfpercap highmat highlabor /solution
adjrsq;
        run;


ods output ParameterEstimates=PEforlib27 DataSummary=OBSlib27 FitStatistics=AdjRsqlib27
Effects=OverallSiglib27;
proc surveyreg data= libstatsrev3;
        class id yrcode/ref=first;
        where year<2011;
        model12: Model percapvisits = id yrcode DiD plfpercap highmat highlabor/solution
adjrsq;
        run;


Data regression_table_longr;
        length Model $15; /* Makes sure the variable Model has the right length and its values
are not truncated */
        length Parameter $30; /* Makes sure the variable Parameter has the right length and its
values are not truncated */
        set PEforlib25 PEforlib26 PEforlib27 PEforlib10 PEforlib11 PEforlib12 indsname=M;
/*"indsname" creates an indicator variable (here I call it "M") that tracks the name of databases
use in the "set" statement */
        keep Model Parameter EditedResults;
        if      M="WORK.PEFORLIB25" then Model="Model25";
                else if M="WORK.PEFORLIB26" then model="Model26";
```

```
            else if M="WORK.PEFORLIB27" then model="Model27";
            else if M="WORK.PEFORLIB10" then model="Model10";
            else if M="WORK.PEFORLIB11" then model="Model11";
            else if M="WORK.PEFORLIB12" then model="Model12";

        where estimate ne 0; /* drops reference variables*/

        if probt le 0.01 then Star= "***";
        else if probt le .05 then Star= "**";
        Else if probt le .1 then Star="*";



        results=Estimate;
        EditedResults=cats(put(Results,comma16.4),Star); /* put creates character variable from
numerical variable*/
        output;
        Star="";
        results=stderr;
        EditedResults=Cats("(",put(Results,comma16.2),")");
        output;
run;

/* We sometimes need this sorting step when we have multiple regression models */
proc sort data=regression_table_longr out=regression_table_sortedr;
        by Model Parameter;
run;



/* Step 2: Create separate results columns (in the form of separate databases) corresponding to
each model */
data Model25Results (rename=(EditedResults=Model25))
```

```
                Model26Results (rename=(EditedResults=Model26))
                Model27Results (rename=(EditedResults=Model27))
                Model10Results (rename=(EditedResults=Model10))
                Model11Results (rename=(EditedResults=Model11))
                Model12Results (rename=(EditedResults=Model12));

        set regression_table_sortedr;
        if Model="Model25" then output Model25Results;
                else if Model="Model26" then output Model26Results ;
                else if Model="Model27" then output Model27Results;
                else if Model="Model10" then output Model10Results;
                else if Model="Model11" then output Model11Results;
                else if Model="Model12" then output Model12Results;
                drop Model;

run;

/* Step 3: Create the final results table that would include all models side-by-side*/
data regression_Table_Wider;
        merge Model25Results Model26Results Model27Results Model10Results
Model11Results Model12Results;
        by Parameter;
        if mod(_n_,2)=1 then Regressors=Parameter;

        length Order 8;
        if Parameter= "Intercept " then Order=1;
        else if parameter= "ID" then order=2;
        else if Parameter= "YRCODE" then Order=3;
        else if Parameter= "levyyes" then order=4;
        else if parameter = "itemspercap" then order=5;
```

```
        else if parameter= "plfpercap" then order=8;


run;


/* Order the variables in the results table */
proc sort data=regression_Table_Wider out=regression_Table_Wide_Sortedr;
        by Order;
run;

/*create rows for other stats*/
/*row for number of obs*/
data NumofObs2r (keep=Label1 Model25 Model26 Model27 Model10 Model11 Model12);
        merge
Obslib25(rename=(nvalue1=NVModel25))Obslib26(rename=(nvalue1=NVModel26))

        Obslib27(rename=(nvalue1=NVModel27))Obslib10(rename=(nvalue1=NVModel10))

        Obslib11(rename=(nvalue1=NVModel11))Obslib12(rename=(nvalue1=NVModel12));
        by Label1;
        where Label1="Number of Observations";

        Model25=put(NVModel25,comma16.0);
        Model26=put(NVModel26,comma16.0);
        Model27=put(NVModel27,comma16.0);
        Model10=put(NVModel10,comma16.0);
        Model11=put(NVModel11,comma16.0);
        Model12=put(NVModel12,comma16.0);

run;
```

```
/*row for number of adjrsq*/
data ADJRSQ2r (keep=Label1 Model25 Model26 Model27 Model10 Model11 Model12);
        merge  AdjRsqlib25(rename=(cvalue1=model25))
AdjRsqlib26(rename=(cvalue1=model26))
                AdjRsqlib27(rename=(cvalue1=model27))
AdjRsqlib10(rename=(cvalue1=model10))
                AdjRsqlib11(rename=(cvalue1=model11))
AdjRsqlib12(rename=(cvalue1=model12));

        where Label1="Adjusted R-Square";

run;

/*row for overall signifigance*/
data OSM25 (rename=(EditedValue=Model25)) OSM26 (rename=(EditedValue=Model26))
                OSM27 (rename=(EditedValue=Model27)) OSM10
(rename=(EditedValue=Model10))
                OSM11 (rename=(EditedValue=Model11)) OSM12
(rename=(EditedValue=Model12));
        set OverallSiglib25 OverallSiglib26 OverallSiglib27 OverallSiglib10
                OverallSiglib11 OverallSiglib12 indsname=M;
        where Effect="Model";
        Label1="Overall Significance";

        if probf le 0.01 then Star= "***";
        else if probf le .05 then Star= "**";
        Else if probf le .1 then Star="*";


        EditedValue=cats(put(FValue,comma16.2),Star);
```

```
        if M="WORK.OVERALLSIGLIB25" then output OSM25;
        else if M="WORK.OVERALLSIGLIB26" then output OSM26;
        else if M="WORK.OVERALLSIGLIB27" then output OSM27;
        else if M="WORK.OVERALLSIGLIB10" then output OSM10;
        else if M="WORK.OVERALLSIGLIB11" then output OSM11;
        else if M="WORK.OVERALLSIGLIB12" then output OSM12;


        keep Label1 EditedValue ;
run;

Data OverallSig2r;
        merge osm25 OSM26 osm27 osm10 osm11 osm12 ;
        by Label1;
run;

/*combine all rows for other statistics*/
data OtherStat2r;
        set NumofObs2r ADJRSQ2r OverallSig2r ;
        rename Label1=Regressors;

run;

/*add other stats to results table*/

data regression_Wide_Sorted_withstatr;
        set regression_Table_Wide_Sortedr OtherStat2r;

        run;
```

```
 /* Print the clean results table */
ods excel file="/home/u60615016/MySAS/seniorprojectrobustchk.xlsx"
options(Embedded_Titles="ON" Embedded_Footnotes="ON"); /*Use the path to your MySAS
folder */
Title "Robustness Check";
footnote justify=left "Note: Robust standard errors are in parenthesis. *, **, and ***
indicate 10%, 5%, and 1% significance levels, respectively.";
proc print data=regression_Wide_Sorted_withstatr noobs;
        var  regressors  ;
        var model25 model26 model27 model10 model11 model12 / style(header)={just=center}
style(data)={just=center tagattr="type:String"};

        format regressors $VariableName. ;
        /*$ for character variable then .(period) to end name of variable*/
run;
ods excel close;
```