

Situational, Socioeconomic and Ideological Determinants of Support for Public Education
Funding and Budgetary Management in Oregon

By

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Abstract

The Oregon education system at both the K-12 and Postsecondary level is strained for resources, with funding at levels far below the national average. This is due, in large part, to the small percentage of state taxes that are used to fund education. Public support for additional revenue for schools is necessary to enact legislative changes to relieve the strained budgets of school districts and public universities. However, support for public funding of higher education is lacking, as evidenced by the failure of Oregon's Measure 86 in 2014. Identifying the sociodemographic, ideological, and situational determinants of support, and the perceptions of Oregonians on the current state of Oregon's education system will provide a better understanding of where support or opposition to education policies comes from. Using the data from the 2013 Oregon Policy Issues Survey (N=672 responses), support for education funding and perceptions of the current state of the education system in Oregon was assessed at the K-12 and Postsecondary level. Differences between demographic groups were explored to develop a more complete understanding of public perception of the present state of the public education system in Oregon. Findings indicate that educational attainment and political ideology are significant predictors of support for additional educational funding at all levels. Additional predictors were identified in regard to higher education funding.

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Introduction and Statement of Problem

Education funding in Oregon is far below the national average for both K-12 education and post-secondary education at Oregon's public universities. Affordability of higher education in Oregon has been given a grade of "F" by the National Center for Public Policy and Higher Education, with families from even the poor and working-class being required to contribute 44% of their income after financial aid to pay for costs at 2-year colleges (*Measuring Up 2008: The National Report Card on Higher Education*, 2008). The public higher education system and the K-12 education system in Oregon compete for funding from the state's general fund and lottery dollars, with different political lobbying groups vying for limited funding.

Nationally, K-12 education funding has been declining for both 2011 and 2012 (Cornman, Keaton, & Glander, 2013). While Oregon has increased the funding for K-12 education over those two years to \$10,415 (regional cost-adjusted dollars), the national per-student expenditures are 11.25% below the national average (The Annie E. Casey Foundation, 2014). However, K-12 funding is still at levels far above higher education funding in Oregon, resulting in tuition increases from the public colleges and universities to cover their operating costs (Carlson et al., 2014).

With funding levels far below the national average at both the K-12 and postsecondary level, special interest groups have sought to increase K-12 and postsecondary education funding, but these efforts have been met with mixed success. As of 2013, Oregon ranked 34th in the nation for public funding of higher education, with a small \$50-million-dollar state fund. On average this amounted to 10% of operating costs at the public universities were paid by the state, with the University of Oregon receiving the lowest share at five percent (Hammond, 2013). This fund translated to \$250 in spending on college aid per student, compared to \$670 as a national average. Public support for education funding is necessary to advance funding legislation at the state level. Yet demographic differences for public support for education funding are not well understood. More recently Measure 86, which sought to permit borrowing to fund higher education for Oregonians, failed a public vote in 2012 by a 3-2 margin, indicating that the voting public in Oregon was not willing to borrow in the manner proposed to increase the state higher education coffers. However, this ballot failure is contrasted against the recent legislative success

of the passage of The Oregon Promise, which allocated state funds to cover tuition expenses for Oregon's community college students.

Public education, has a non-trivial social benefit and is generally regarded as a public good among economists and academics. Having an educated population benefits the state through a number of factors including lower incarceration rates, higher tax revenues, and economic growth (Blomquist, Coomes, Jepsen, Koford, & Troske, 2009; Carroll & Erkut, 2009). As such, it benefits a state and its citizens to have a well-developed public education system. With high social value, societies should be open to financing public education at all levels. Recently, however, the voters and policymakers have shifted away from the public good argument and framed higher education increasingly as a private good. The implications of this reframing have had substantial impact on the public portion of higher education funding, shifting much of the burden onto the individual students through tuition and fees.

With such complex and diverse factors influencing state appropriations for education, it is beneficial to identify which portions of the state population would support educational funding increases at both the K-12 and higher education levels. Additionally, identifying differences between those who support increased K-12 funding and those who support increased higher education funding may help to attune lobbying efforts for the respective areas of public education. In addition to exploring support for increased education budgets, I will explore public opinion on matters of better management of current funding levels. Using Oregon citizens as the unit of analysis, this research investigates public opinion regarding Oregon's public education system at the primary, secondary, and postsecondary levels in an effort to identify the sociodemographic, ideological, and situational determinants of public support for education.

Context

State Appropriations and Education Funding

Public K-12 in Oregon

Prior to 1991-1992, Oregon's tax system was purely levy-based, where each county would assess their budgetary needs and assess property taxes to meet those needs. However, this changed upon the passage of Measure 5 in 1990, which took effect the following year. Under Measure 5, limits were introduced on property taxes, reducing the tax burden to \$5 per \$1000 of

assessed market value. This shifted the burden of educational funding from the counties to the state, and has led to years of strained budgets in the schools. Compounding these problems, Measure 47(1996) and Measure 50 (1997) which corrected language and repealed Measure 47, introduced by Oregon conservative Bill Sizemore sought to cap the rate at which property taxes could increase. Revenue collected from property taxes plummeted after the introduction of Measure 5, and has remained flat in the years after the introduction of Measure 50 (see Figure 1) (*Legislative Revenue Office, 2013*). Changes to the way property values are assessed occurred with Measure 47 and Measure 50, reflected in Figure 1 by the discrepancy between the properties' assessed value and the market value that occur after 1995.

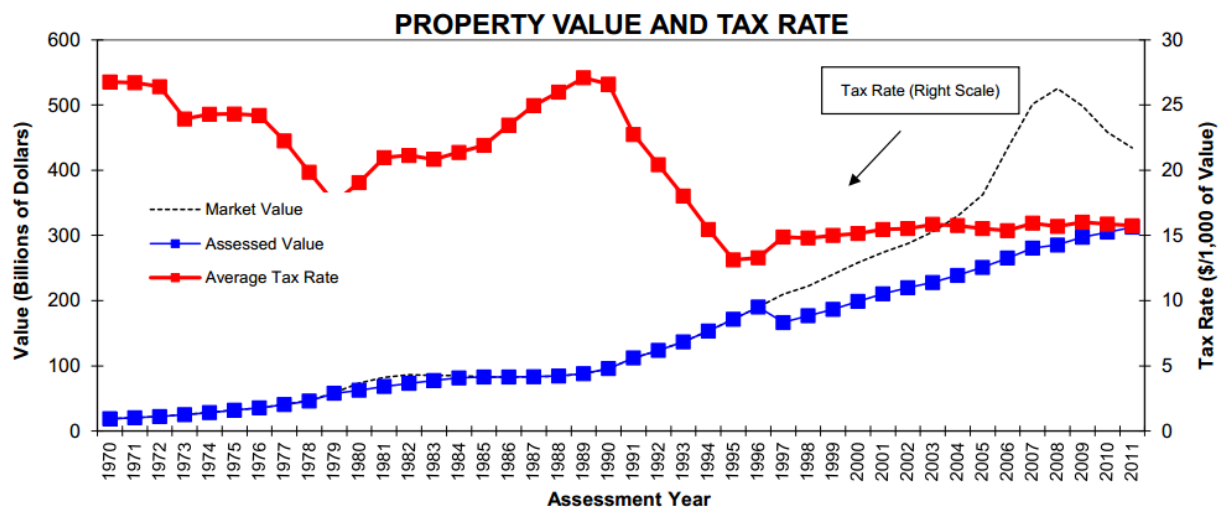


Figure 1: Oregon state property taxes, assessed property value, real market value (left axis). Property tax rate (right axis).

The combined effect of these measures was an increased dependence on the state general fund to provide for K-12 education. Over the 2013-15 biennium, K-12 education funding made up 39.7% of the state general fund and lottery funds, compared to only 25% in 1989-91. 95% of the K-12 education budget came from the state general fund, with the lottery funds constituting 4.9% and local funding amounting to 0.1% (*Budget Highlights 2013-15 Legislatively Adopted Budget, 2013*).

Legislative Responses: K-12 Education

The legislative actions taken to address the funding of K-12 education in Oregon since the 2008 recession often seem to be diametrically opposed to the goals laid out for 100% graduation rates by 2025. Under Gov. John Kitzhaber in 2011, the Oregon Senate passed Senate

Bill 253 which has been referred to in media as the “40-40-20 Plan.” Under this plan, Oregon calls for 100% graduation rates by 2025 – a very lofty goal. Additionally, as envisioned under the plan, 40% of those graduates would go on to postsecondary education, and 20% would complete a graduate degree. However, by comparison, the 2015-17 proposed budget for K-12 education only amounts to a 9% increase in funding, totaling \$7.225 billion (*House Bill 5017*, 2015). This meager funding increase raises the per-student allotment in school districts by \$100 per student, a level still far below the national average.

Higher Education in Oregon: Public Colleges and Universities

If the result of the property tax limitations were damaging to K-12 education funding, they were arguably devastating to the higher education system. When the property tax limitations came into effect following Measure 5, and Measures 47 and 50, the state colleges and universities found themselves competing with K-12 education for state general fund dollars. This further strained a system that has been consistently underfunded, and ultimately was a losing battle for colleges and universities, resulting in meager state funding. In 2013, the state ultimately paid an average of 10 cents per dollar of operating costs of the colleges and universities in the state (Hammond, 2013). Higher education in Oregon has consistently been funded at levels below the national average per full-time enrolled (FTE) student. In FY2014, Oregon ranked 46 out of 50 in educational appropriation dollars per FTE student (Carlson et al., 2014). In Oregon, \$4,214 per FTE was appropriated for higher education in FY2014, which represents a -29.4% change since 2008 recession. This lack of appropriations has required universities and colleges to increase tuition to offset the lost revenue, causing Oregon to outpace the national average by 15%. Within the region of the Western Interstate Commission for Higher Education (WICHE), Oregon is 25% higher than the average (Carlson et al., 2014). While education revenue is declining, Oregon has been seeing record enrollment in the state’s colleges and universities. FTE enrollment for the state in FY2014 was 165,480, representing a 27.7% increase since the recession in FY2008. As illustrated in Figure 2, Oregon outpaces both the national average, and the regional average for the contribution of tuition to the state’s higher education revenue.

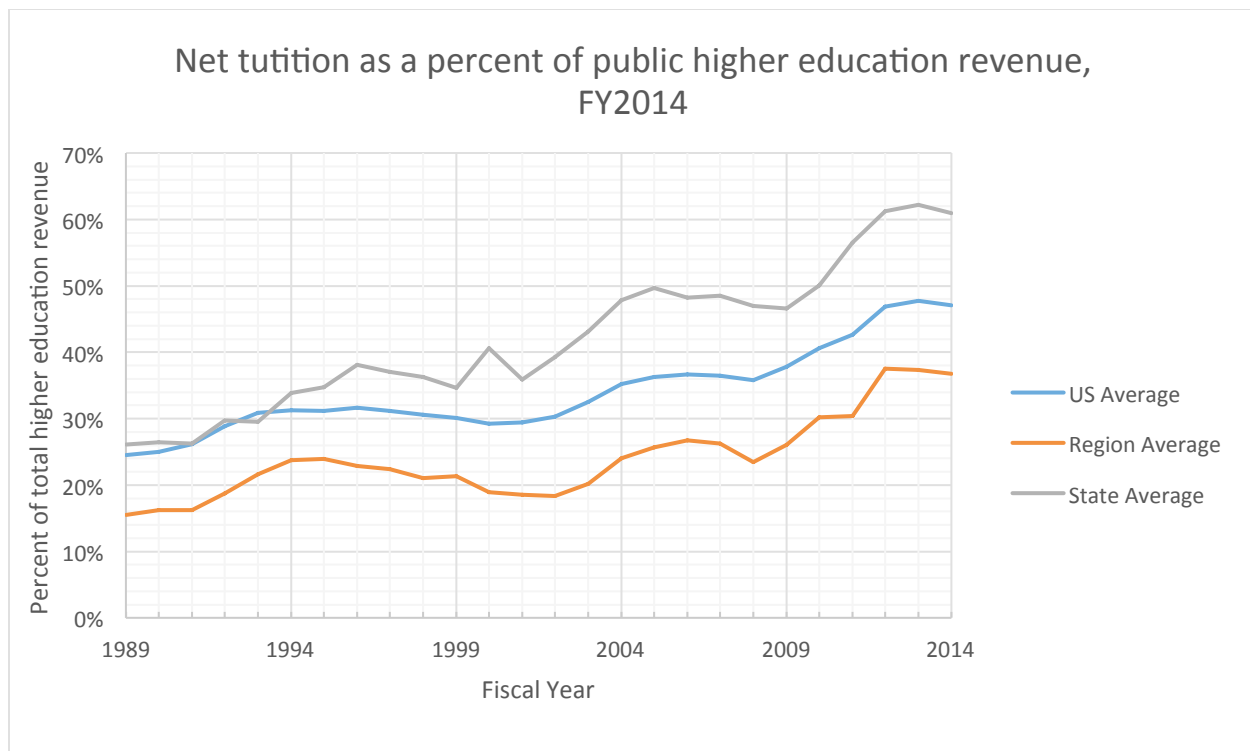


Figure 2: Net tuition as a percent of public higher education revenue, FY2014. Region is the Western Interstate Commission for Higher Education (WICHE). States included are: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. Data is from the 2014 State Higher Education Finance Report (Carlson et al., 2014).

Legislative Responses

Oregon University System

Partially in response to the increased strain on higher education budgets, the largest schools in the Oregon University System (OUS) first opted to break away and become autonomous institutions. The passage of Senate Bill 242 (2011) ended the agency status of the public universities in Oregon, giving them the increased autonomy to manage, spend and raise funds. The reasons given included increased freedom to hire and fire university presidents, finance building improvements and repairs, as well as set tuition (Graves, 2011). Following the passage of SB242, the largest 3 public universities broke away from the Oregon University system in 2014, and the remaining public universities and colleges followed in 2015.

Measure 86: Oregon Fund for Postsecondary Education (2014)

A recent Citizen's Initiative in Oregon, known as Measure 86, was put to the ballot in 2014. This initiative sought to amend the Oregon constitution to allow for the incurring of debt to finance a fund that would be solely used for students attending institutes of higher education in

the state. This initiative was championed by Oregon State Treasurer Ted Wheeler and backed by the bulk of the Democrats in the legislature, as well as Gov. Kitzhaber. The state treasury office specifically referenced the disproportionate rise in tuition costs in Oregon as the impetus for passage of the measure. However, when subjected to the statewide vote, the measure failed by 14.4% of the vote. While the reasons given for the failure of the measure included specific worries about the risks associated with potential increases in interest rates (Anderson III, Hester, Lukens, & Reed, 2014; Manning, 2014), the end result was the Oregon voters rebuking the borrowing of funds to ease tuition costs for Oregonian college students.

Senate Bill 81: The Oregon Promise (2015)

Most recently, Oregon Gov. Kate Brown signed into law Senate Bill 81, known colloquially as the “Oregon Promise.” Under this law which takes effect in 2016, Oregon students will be able to have their community college tuition reduced or omitted entirely after meeting a number of qualifying provisions. Specifically, only students who have graduated from an Oregon high school and have applied to a community college in Oregon within six months will be eligible. Additionally, students will have to maintain a minimum grade points average and pay a co-pay to the community college each term. The tuition covered by the state amounts to the remainder after all state and federal financial aid is applied (*Senate Bill 81*, 2015).

Current State of Affairs: 2015-17 Oregon Education Budget

Whereas the state budgets in the years following the 2008 recession provided funding to higher education that was among the lowest in the nation, the 2015-17 higher education budget shows promise. Overall, Oregon’s public colleges and universities will potentially see an average increase of 22% for universities and 18% for community colleges. While this increase in public support is welcomed by the public colleges and universities, when adjusted for inflation funding levels still fall short of pre-recession funding.

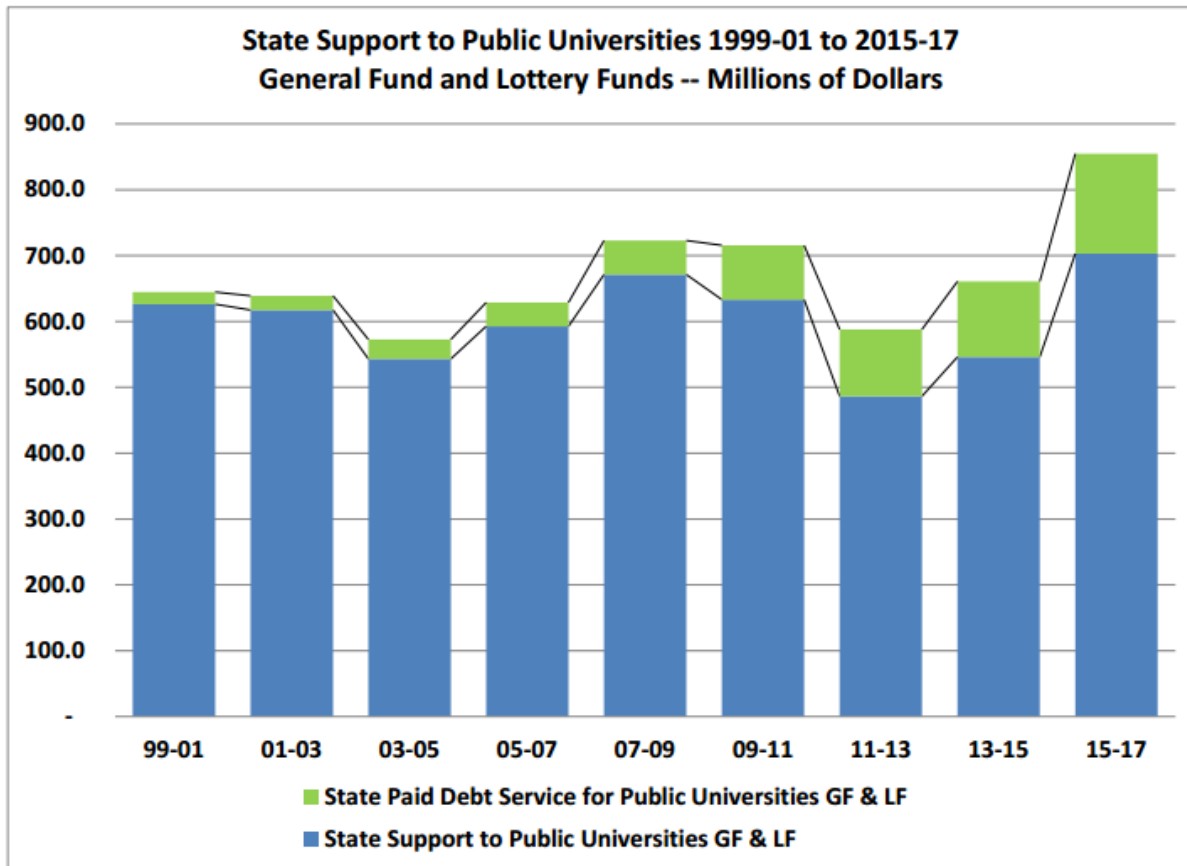


Figure 3: Oregon state support provided to public universities from the combined General and Lottery Fund (not adjusted for inflation). (Legislative Fiscal Office: Budget Highlights, 2015)

Demographics of Support

Identifying determinants for support of public K-12 education is the first step in predicting public support for educational policy. While these determinants all interact with socioeconomic factors in complex ways, it is necessary to identify individual determinants outside of income levels to more fully understand public support for public education.

Educational Attainment

Educational attainment has been shown to be correlated with support for increased educational funding in empirical studies (Busemeyer, 2012). More generally, education level, and education level of parents significantly influences opinion on economic redistribution, including the funding of public education (Corneo & Gruner, 2002). It is expected that the educational

attainment of respondents will be a determinant of their support or lack of support for public education, especially in regard to additional funding.

Political Ideology

The effects of political ideology on education are well-established in literature. Generally, left-leaning political ideologies are more supportive of redistributive policies such as public education (Busemeyer, 2012; Corneo & Gruner, 2002). This is apparent to advocacy and special-interest groups such as educational unions, as the bulk of educational union political fundraising dollars go to the Democratic Party, which is ideologically center-left. In the 2012 election cycle, the national education lobbying spending for the Democratic Party totaled \$50.5M compared to \$15.8M for the Republican Party (Center for Responsive Politics, 2015). While political advocacy and lobbying groups are not directly indicative of the effects of an individual's political ideology on support for public education, they do serve as a reasonable proxy in terms of the preferred ideological leaning of politicians and voters on education policy.

Parental Support for Education

While the evidence for or against parents support for public education in the USA seems somewhat limited in the literature, the role of parents in their children's educational outcomes is promoted heavily at the K-12 level by school districts and examined extensively in research (Williams, Williams, & Ullman, 2002). The result is that parental involvement in public education is common at the K-12 level. Parents often volunteer as assistants in the schools their children attend, as well as run for and serve in leadership positions such as the School Board. In an international study examining OECD nations by Busemeyer (2012), having children was a significant and major determinant of public support for increasing education funding. This support may be heavily influenced by rational self-interest. Parents whose children attend a tuition-funded private or parochial school would be presumed to be less likely to support increased public education spending, as the parents would effectively be charged twice for their children's education.

Demographics of Support

When assessing who supports the funding of public education, certain demographics and political ideologies are traditionally recognized as in favor of public education. This section

examines the literature in regard to the demographics of voters who support public education at either the K-12 or the higher education level.

Educational Attainment

Overwhelmingly, educational attainment has been shown to be positively associated with increased voter turnout and civic mindedness (Burden, 2009; Sondheimer & Green, 2010), as well as increased political expertise and sophistication (Highton, 2009). Additionally, as recognized by the Pew Research Center, those on the ideological right have made gains in membership among less-educated individuals since 2008 (*A Closer Look at the Parties in 2012*, 2012). Given these facts, it is reasonable to assume that educational attainment may have some positive effect on the support for public education.

Political Party and Political Ideology

Studies have shown that states with more liberal demographics consistently provide for more funding at the higher education level. (Archibald & Feldman, 2006; Tandberg, 2010a, 2010b). Those identifying as leaning democrat, or identifying fully as democrat tend to have higher educational attainment than those identifying as or leaning toward Republican. This gap increases with educational attainment as seen in Table 1, with 56% of those with a graduate degree or higher identifying or leaning toward Democrat, compared to 36% leaning toward or identifying as Republican (*A Deep Dive Into Party Affiliation*, 2015). Given the strong correlation between educational attainment and political party identification, it is expected that those leaning toward or identifying as Democrat would be in support of public education at rates higher than those leaning toward or identifying as Republican. This is corroborated by data on lobbying money spent in both houses of congress in Table 2, where donations to Democrats far exceeded donations to Republicans, indicating the preference for democratic legislators to be the target of education lobbyists. In terms of political ideology, a similar trend is noticed. According to research conducted by the Pew Research Foundation, those who identified as politically liberal achieved a college degree 48% of the time compared to 27% on average for all political ideologies surveyed (Keeter & Smith, 2006). Given the high collinearity between political ideology and political party identification in the survey data, only political ideology is included in the models.

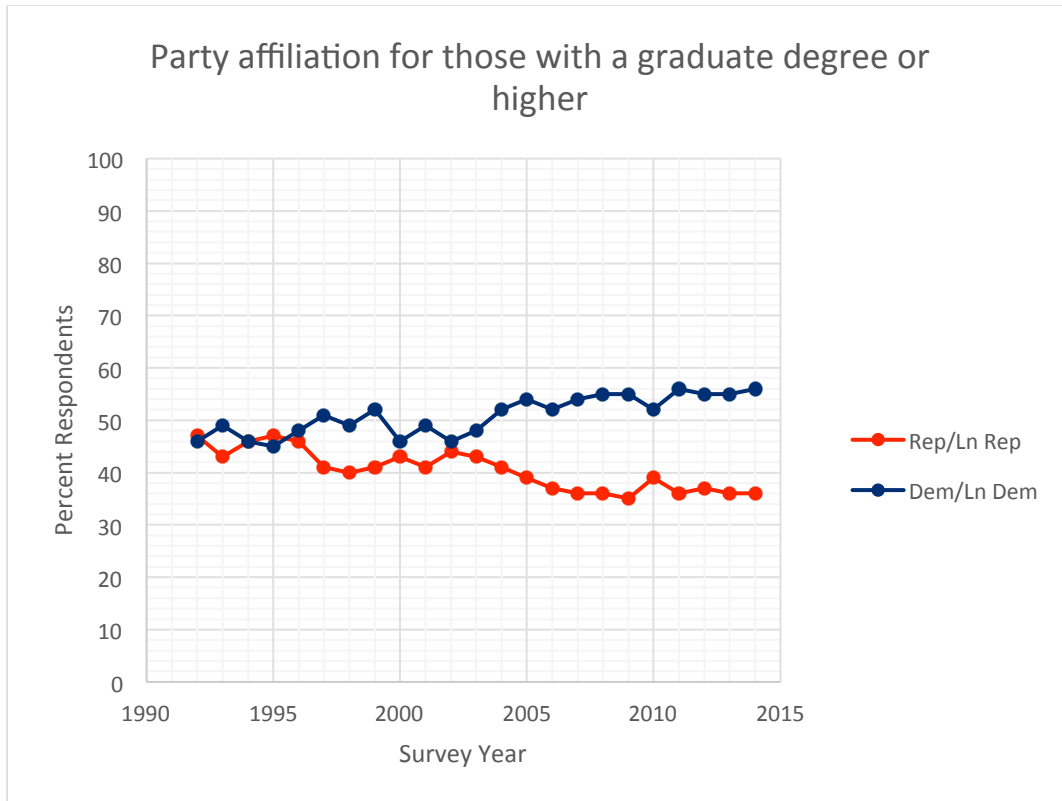


Table 1: Party Affiliation among those with a Graduate Degree or higher. Pew Research Center, 2015.

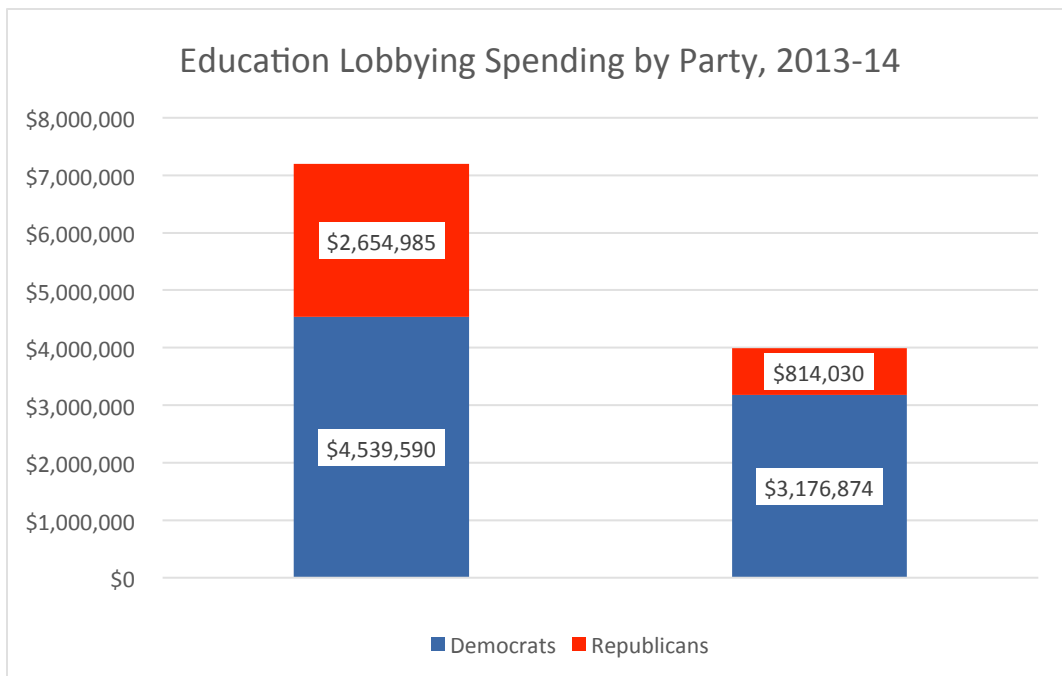


Table 2: Education lobbying dollars spent in 2013-14 election cycle by party and house of Congress. Center for Responsive Politics, 2015.

Public Employees

The largest portion of public employees at all levels of government work for the education system. According to the 2010 US Census, 10,886,913 employees work in the education system, constituting 49.9% of all government employees. 34.9% work in primary and secondary education, while 14.5% work in public higher education (Willhide, 2014). In Oregon, public employees predominately work in K-12 and higher education as well. According to the Public Employee Retirement System (PERS), 47.15% of state employees were employed within the public school districts and community colleges (*Public Employee Retirement System: Comprehensive Annual Financial Report*, 2014). Studies have shown that public employees have higher rates of voter turnout in the United States, indicating that this demographic is more politically active than those in the private sector (Jensen, Sum, & Flynn, 2009). Additionally, there is limited evidence that public employees tend to hold ideological positions that are to the political left of the US general population (Jensen et al., 2009). Given the large percentage of government employees that work in the education system and the potential predisposition toward left-leaning ideologies, it is presumed that public employees will be more likely to support education funding increases.

Data and Methods

Survey Methodology

Data were collected using a mailed survey sent to random samples of 1,300 households in Oregon during 2013. Each contacted household was issued the following request for participation: “If available, we would prefer the person, 18 years old or older, who most recently celebrated a birthday to complete the survey.” Three first-class mailings of surveys were sent out and a total of 672 completed surveys were returned, yielding a response rate of 51.6%. Data from the 2010 US Census and 2012 Oregon Election Exit Polls were used to estimate survey bias.

Table 4: Survey Validation and Demographics		
	Survey Respondents	2010 U.S. Census
Mean Age (Over 18)	57.9	49.5
Gender (Over 18)	48.7% Male, 50.9% Female	48.4% Male, 51.6% Female
Bachelor's Degree or Higher (Over 18)	44%	29.4% (2009)
Participation Rate	51.69% response rate (N= 672/1300)	2010 General Election Participation = 52.6%
Political Ideology	Survey Political Self-Identity 23.5 % Liberal 38.2 % Moderate 34.8 % Conservative 5.7 % No answer	2012 Exit Polling Data¹ 32% Liberal 37 % Moderate 31% Conservative

Table 3: Survey validation comparing respondent demographics to national data.

Due to the fact that the survey was limited to those of voting age, only data for those 18 years of age and older are included in the U.S. Census data. Survey respondents were slightly older, and better educated than the Census estimates for Oregon. This is typical of survey respondents in mass-mailed surveys (Messer, Edwards, & Dillman, 2012). The survey respondents also consisted of slightly more women than the census estimates suggest, but the difference is trivial. The comparisons of the survey respondent demographics with census and polling data suggest that the survey sample is fairly representative of the state as a whole.

Independent and Control Variables

Socio-demographic, ideological and situational variables were isolated for the development of the regression models. Particularly of interest were responses to questions of self-reported political ideology on domestic political issues, governmental employee status, and whether or not the respondents had children attending K-12 or higher education institutions in Oregon during the survey period. Table 4 lists these variables along with descriptive statistics for each.

¹ Winston Group Exit Polls. (*National Exit Polls: Party Identification and Ideology Breakdowns Nationally and by State*, 2012)

Table 5: Univariate Analysis: Independent and Control Variables

Socio-demographic variables		Mean (s.d.)
Age	<i>Respondent Age in Years</i>	57.89 (15.83) N=632
Gender	<i>Dummy variable for respondent self-reported gender</i>	.505 N=641
	0 = Male; 1 = Female	
Age*Gender	<i>Interaction effect between age and gender.</i>	
Education Level	<i>Dummy variable for educational attainment.</i>	2.43 (0.89) N=641
	1= High School or Below	
	2= Some College	
	3= Graduated College	
	4= Graduate Degree	
Ideology Variables		
Ideology	<i>Self-assessed political orientation</i>	3.11 (1.03) N=604
	1 = Very Liberal to 5 = Very Conservative	
Situational Variables		
Government Employee	<i>Dummy variable for government employee status.</i>	.106 (.308) N=641
	1= Government Employee; 0=else	
K-12	<i>Dummy variable for having children currently in K-12 school.</i>	.237 (.426) N=641
	1=Yes; 0=else	
College/University	<i>Dummy variable for having children currently attending college or university.</i>	.100 (.300) N=641
	1=Yes; 0=else	
Private	<i>Dummy variable for private school attendance.</i>	.098 (.298) N=641
	1=Yes; 0=else	
Private*Kids in K12	<i>Interaction effect for children in private K-12</i>	
	1=Yes; 0=else	

<i>Private*Kids in College or University</i>	<i>Interaction effect for children in private college or university.</i>
	1=Yes; 0=else

Table 4. Independent and control variables used in regression models.

Dependent Variable Construction

The dependent variables chosen for the models come from the survey questions themselves, and focus on the categories of additional funding and better management of current funding. The survey respondents were asked to “Please indicate your level of agreement or disagreement with the following statements” using a 5-point Likert scale ranging from Strongly Disagree to Strongly Agree. Predominantly, the respondents believed that current funding could be better managed at both the K-12 and higher education level, whereas fewer respondents felt as certain that additional funding would improve educational quality at any level. Response statistics and frequency distributions of the responses are illustrated below in Table 5 and Figure 4 and Figure 5, respectively.

Table 6: Survey responses addressing additional funding and better management				
Statement	Response (%)		Summary Statistics	
Additional state funding would lead to higher quality K-12 education in Oregon	Strongly Disagree	86 (13.5%)	N = 638 Mean = 3.22 Std Dev = 1.31	
	Disagree	110 (17.2%)		
	Uncertain	140 (21.9%)		
	Agree	177 (27.7%)		
	Strongly Agree	125 (19.6%)		
Better use of state funds would lead to higher quality K-12 education in Oregon	Strongly Disagree	18 (2.8%)	N = 638 Mean = 4.10 Std Dev = 0.927	
	Disagree	16 (2.5%)		
	Uncertain	90 (14.1%)		
	Agree	277 (43.4%)		
	Strongly Agree	237 (37.2%)		
Additional state funding would lead to higher quality higher education in Oregon	Strongly Disagree	60 (9.4 %)	N = 638 Mean = 3.32 Std Dev = 1.21	
	Disagree	95 (14.9%)		
	Uncertain	188 (29.5%)		
	Agree	171 (26.8%)		
	Strongly Agree	124 (19.4%)		
Better use of state funds would lead to higher quality higher education in Oregon	Strongly Disagree	8 (1.3%)	N = 638 Mean = 3.96 Std Dev = 0.895	
	Disagree	23 (3.6%)		
	Uncertain	153 (24%)		
	Agree	259 (40.6%)		
	Strongly Agree	195 (30.6%)		

Table 5: Survey responses and descriptive statistics for public support for increased educational funding and better management of current budgets.

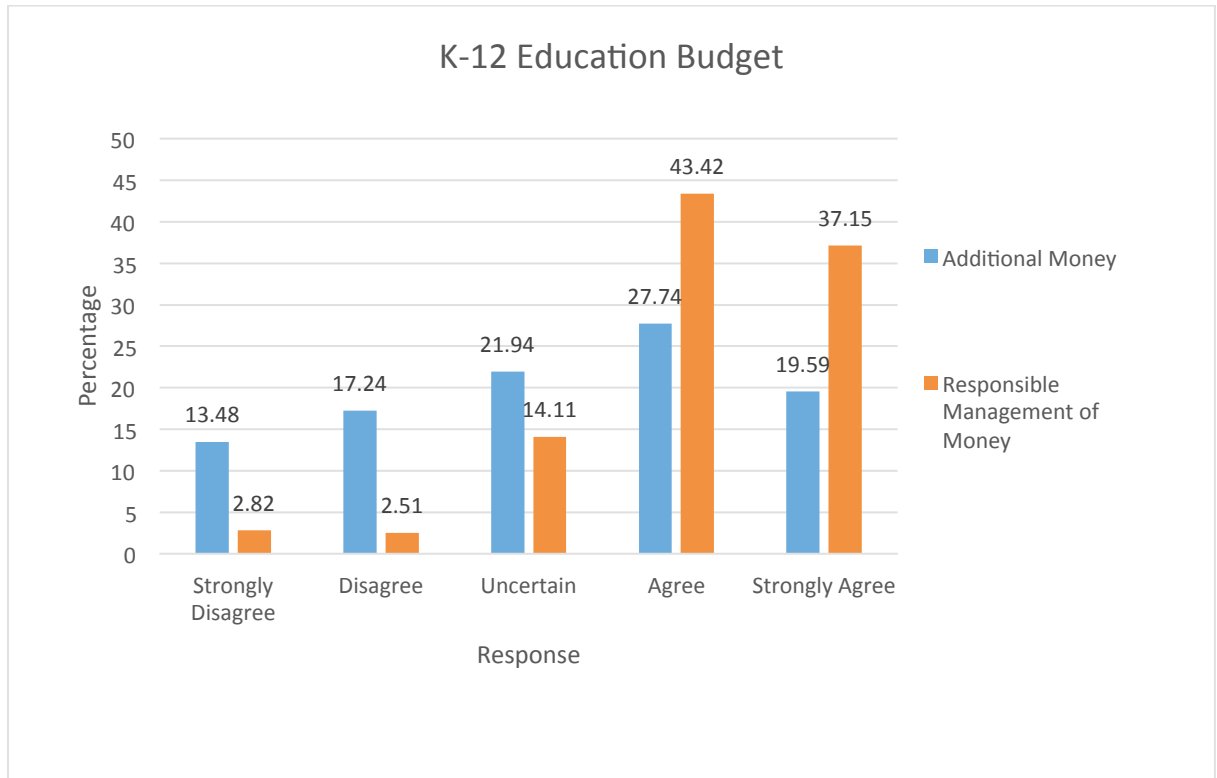


Figure 4: Distribution of responses to questions of additional funding and better management of public K-12 budgets.

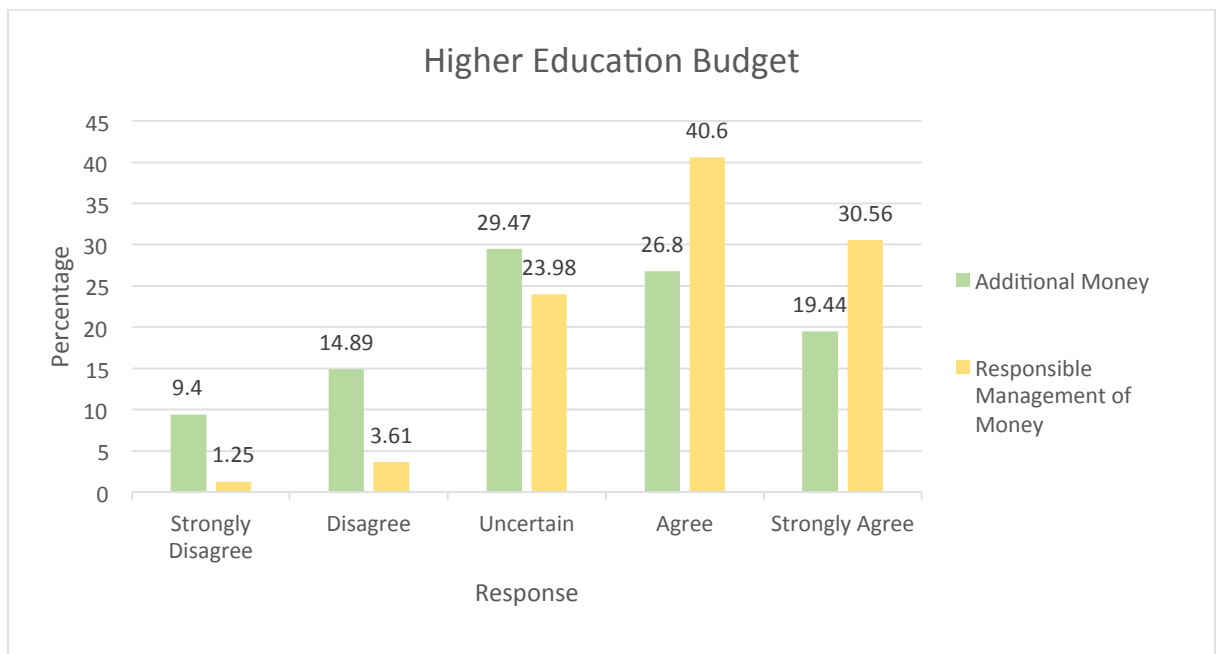


Figure 5: Distribution of responses to questions of additional funding and better management of public college and university budgets.

Hypotheses

The hypotheses used for the models are outlined in this section in Table 6, and Table 7 (p.28-29).

The models are:

1. K-12 Additional Funding
2. K-12 Better Management
3. Higher Ed Additional Funding
4. Higher Ed Better Management

In each model there are a total of 5 hypotheses addressing the sociodemographic, situational, and ideological determinants and the interactions between selected determinants, totaling 20 hypotheses in this research paper. The hypotheses are categorized by the determinant below, and separated for each model.

(1) Education Background

K-12: Additional Funding

Respondents with higher educational experience will be more likely to support increased educational funding as a path to higher quality K-12 education in Oregon

K-12: Better Management

Respondents with higher educational experience will be more likely to support better management of current funding as a path to higher quality K-12 education in Oregon.

Higher Ed: Additional Funding

Respondents with higher educational experience will be more likely to support increased educational funding as a path to higher quality higher education in Oregon (DV2)

Higher Ed: Better Management

Respondents with higher educational experience will be more likely to support better management of current funding as a path to higher quality higher education in Oregon.

(2) Political Ideology

K-12: Additional Funding

Respondents who identify as more politically liberal will be more likely to support increased educational funding as a path to higher quality K-12 education in Oregon

K-12: Better Management

Respondents who identify as more politically liberal will be more likely to support better management of current funding as a path to higher quality K-12 education in Oregon.

Higher Ed: Additional Funding

Respondents who identify as more politically liberal will be more likely to support increased educational funding as a path to higher quality higher education in Oregon

Higher Ed: Better Management

Respondents who identify as more politically liberal will be more likely to support better management of current funding as a path to higher quality higher education in Oregon.

(3) Parents with children in school

K-12: Additional Funding

Respondents with children currently attending K-12 school in Oregon will be more likely to support increased educational funding as a path to higher quality K-12 education in Oregon.

K-12: Better Management

Respondents with children in Oregon currently attending K-12 school in Oregon will be more likely to support better management of current funding as a path to higher quality K-12 education in Oregon.

Higher Ed: Additional Funding

Respondents with children currently attending college or university in Oregon will be more likely to increased educational funding as a path to higher quality higher education in Oregon.

Higher Ed: Better Management

Respondents with children currently attending college or university in Oregon will be more likely to support better management of current funding as a path to higher quality higher education in Oregon.

(4) Parents with children in private schools

K-12: Additional Funding

Respondents with children in private schools will be less likely to support additional K-12 funding as a path to higher quality K-12 education in Oregon.

K-12: Better Management

Respondents with children in private schools will be more likely to support better management of current funding as a path to higher quality K-12 education in Oregon.

Higher Ed: Additional Funding

Respondents with children in private schools will be less likely to support additional funding as a path to higher quality higher education in Oregon.

Higher Ed: Better Management

Respondents with children in private schools will be more likely to support better management of current funding as a path to higher quality higher education in Oregon.

(5) Public Employees

K-12: Additional Funding

Public/government employees will be more likely to support increased educational funding as a path to higher quality K-12 education in Oregon.

K-12: Better Management

Public/government employees will be less likely to support better management of current funding as a path to higher quality K-12 education in Oregon.

Higher Ed: Additional Funding

Public/government employees will be more likely to support increased educational funding as a path to higher quality higher education in Oregon

Higher Ed: Better Management

Public/government employees will be less likely to support better management of current funding as a path to higher quality higher education in Oregon.

Ordinal Least Squares Regression Model Development

The Ordinal Least Squares regression model follows the form:

$$y_i = \beta_0 + x_1\beta_1 + x_2\beta_2 + \cdots x_n\beta_n + \varepsilon_i$$

Where y_i is a continuous variable representing the 5-point Likert scale response to the questions posed in the Methods section under Dependent Variable Construction, independent variables are represented by the various x_n . In both instances, models were developed to avoid omitted variable bias and provide the most parsimonious explanations of the dependent variable. The models are divided between K-12 Education and Higher Education to capture the differences in determinants. The models for K-12 Funding and Management, and Higher Education Funding and Management are detailed in Table 6 and Table 7, respectively.

K-12 Education Models

Table 7: Regression Models: K-12 Education		
	<i>K-12 Additional Funding</i>	<i>K-12 Better Management</i>
Dependent Variable	Agreement with statement: “Additional state funding would lead to higher quality K-12 education in Oregon.”	Agreement with statement: “Better use of state funds would lead to higher quality K-12 education in Oregon.”
Metric	1 = Strongly Disagree 2 = Disagree 3 = Uncertain 4 = Agree 5 = Strongly Agree	1 = Strongly Disagree 2 = Disagree 3 = Uncertain 4 = Agree 5 = Strongly Agree
Independent Variables	Age Gender Age*Gender Education Level Political Ideology Government Employee Children currently in K-12 Children in private or parochial school	Age Gender Age*Gender Education Level Political Ideology Government Employee Children currently in K-12 Children in private or parochial school

Table 6: Model specification for public support for K-12 education funding and management of K-12 budgets in Oregon.

Table 8: Regression Models: Higher Education		
	<i>Higher Ed Additional Funding</i>	<i>Higher Ed Better Management</i>
Dependent Variable	Agreement with statement: “Additional state funding would lead to higher quality college and university education in Oregon.”	Agreement with statement: “Better use of state funds would lead to higher quality college and university education in Oregon.”
Metric	1 = Strongly Disagree 2 = Disagree 3 = Uncertain 4 = Agree 5 = Strongly Agree	1 = Strongly Disagree 2 = Disagree 3 = Uncertain 4 = Agree 5 = Strongly Agree
Independent Variables	Age Gender Age*Gender Education Level Political Ideology Government Employee Children currently in college/university Children in private or parochial school	Age Gender Age*Gender Education Level Political Ideology Government Employee Children currently in college/university Children in private or parochial school

Table 7: Model specification for public support for higher education funding and management of higher education budgets in Oregon.

Heteroskedasticity

The sample size is small enough that heteroskedasticity was present in the sample, as indicated by the post-regression analysis using White’s test for heteroskedasticity. The models were therefore run with HC3 robust standard errors, ideal for sample sizes as small as N=25, to deflate the inflated T-statistics associated with heteroskedastic models (Davidson & MacKinnon,

1985). The regression coefficients in all models retained their significance when using HC3 robust standard errors.

Outliers

In each regression model outliers with a studentized residual value that had an absolute value greater than 2, the model was re-run excluding the outliers. This did not significantly change the models, although certain variables were found to have modest increases in significance and statistical power, as well as lower standard error.

Analysis

Univariate Survey Responses

The survey respondents had a generally positive view of Oregon's education system, at least in terms of their neighborhood K-12 schools. When asked to grade their neighborhood public K-12 schools, the majority of respondents gave a grade of B or A. However, when asked whether all Oregon public schools have improved over the previous 5 years, respondents overwhelmingly stated that public K-12 schools have gotten worse (54.51%) or stayed the same (36.84%). This may be due to the wording of the question, as respondents were asked to grade the schools in their neighborhood only. By comparison, the question about improvement in Oregon schools is worded in a way that can be interpreted to mean all schools in the state. Respondents may have been more likely to grade their local schools higher than the statewide educational system as a whole. While the scores were not quite as generous in regard to higher education, the majority of respondents still scored the schools with a grade of B or A, as seen in Table 8. Generally, fewer people thought higher education quality worsened (38.11%) . However, as with perceptions of K-12 educational quality, a very small minority thought quality had improved over the last 5 years.

There is a gulf in opinion, however, in regard to the degree of the problem. K-12 educational quality is generally viewed as a problem of some significance. Nearly 92% of respondents think the problem of education quality in K-12 is at least somewhat of a problem, and the majority (47.68%) feel it is a big problem. By comparison, only 25.16% of respondents feel the quality of higher education is a big problem.

Table 9: Perceptions of Current Educational Quality				
Overall, how would you rate the quality of:	Response 1=F, 2=D, 3=C, 4=B, 5=A			N Mean (s.d.)
Public schools in your neighborhood today?	F	0	(0)	N=533 3.74 (0.818)
	D	26	(4.88%)	
	C	187	(35.08%)	
	B	219	(41.09%)	
	A	101	(18.95%)	
Oregon's public colleges and universities today?	F	0	(0)	N=394 3.58 (0.721)
	D	20	(5.08%)	
	C	161	(40.86%)	
	B	179	(45.43%)	
	A	34	(8.63%)	

Table 8: Perceptions of educational quality in Oregon using letter grade scale.

Table 10: Perception of Education Quality Improvement, 2008 - 2013				
In the past 5 years, do you think the quality of education in Oregon's	Response 1=Improved, 2=Stayed Same, 3=Gotten Worse			N Mean (s.d.)
K-12 public schools has improved, gotten worse, or stayed the same?	Improved	46	(8.65%)	N=532 2.46 (0.65)
	Stayed Same	196	(36.84%)	
	Gotten Worse	290	(54.51%)	
Public colleges and universities has improved, gotten worse, or stayed the same??	Improved	44	(10.68%)	N=412 2.27 (0.643)
	Stayed Same	211	(51.21%)	
	Gotten Worse	157	(38.11%)	

Table 9: Perceptions of education quality improvement, 2008-2013.

Table 11: Perceptions on Severity of the Problem				
How much of a problem is the quality of education in Oregon’:	Response 1= Big problem, 2 = Somewhat of a problem, 3 = Not much of a problem			N Mean (s.d.)
K-12 public schools today?	Big problem	267	(47.68%)	N=572 1.62 (0.646)
	Somewhat of a problem	253	(44.23%)	
	Not much of a problem	52	(9.09%)	
Public colleges and universities today?	Big problem	116	(25.16%)	N=461 1.97 (0.686)
	Somewhat of a problem	244	(52.93%)	
	Not much of a problem	101	(21.91%)	

Table 10: Perceptions of the severity of educational quality in Oregon.

Hypotheses Testing: OLS Regression

The 5 unique hypotheses for each model outlined in the methods section were examined using ordinal least squares regression analysis. Due to the presence of moderate heteroskedasticity and limited sample size, the models were run with HC3 robust standard errors, and were robust to the exclusion of moderate and severe residual outliers.

K-12 Education

The regression model outputs addressing the K-12 education system are detailed below in Table 11. In addition to the standard significance levels of $p < .05$, $p < .01$, and $p < .001$ the more generous $p < .1$ significance level was included. While this level was not considered sufficient to reject the null hypothesis in favor of the alternative, it was included as it provided some insight into potential confounding effects from certain sociodemographic and situational determinants.

Table 12: Perceptions on K-12 education in Oregon ²		
	Additional Funding (Q1)	Better Management of Funding (Q3)
	<i>Coefficient</i> (HC3 Robust Std. Error)	<i>Coefficient</i> (HC3 Robust Std. Error)
Socio-demographic variables		
<i>Age</i>	-.002 (.004)	-.004 (.003)
<i>Gender</i>	.412 (.338)	.145 (.224)
<i>Age*Gender</i>	-.008 (.006)	-.0004 (.004)
<i>Education Level</i>	.174** (.056)	.075* (.033)
Ideology Variables		
<i>Ideology</i>	-.603*** (.045)	.014 (.031)
Situational Variables		
<i>Government Employee</i>	-.03 (.142)	.007 (.107)
<i>K-12 Children</i>	.107 (.139)	.090 (.083)
<i>Private School Attendance</i>	.444 (.251) ⁺	-.106 (.216)
<i>Private*K-12 Children</i>	-1.275*** (0.314)	.277 (.255)
Constant	4.82*** (.336)	4.17*** (.210)
R-Squared	.323	.045
Adjusted R-Squared	.313	.030
Observations	N=578	N=564

Table 11: Regression results for questions regarding additional state funding and better management of funding as a path to better K-12 education in Oregon.

In regard to additional funding being a path to higher quality K-12 education in Oregon's public schools, the driving factors were educational attainment and political ideology. Respondents who achieved higher educational attainment, and respondents who identified as more politically liberal were significantly more likely to agree that additional funding would improve educational quality in Oregon. There was not enough evidence to reject the null hypotheses in favor of the alternative hypotheses for the other situational and sociodemographic variables. At the more generous 10% significance level, the situational variable for children attending private or parochial school became relevant in regard to support for additional funding,

² ¹Significance levels +=p<.10, *=p<.05; **=p<.01; ***=p<.001.

where parents with children in private school were less likely to support additional public school funding. When interacting the variable for private school attendance with K-12 attendance, which removed all influence from children attending private/parochial college or university, the effect became very powerful and highly significant. Parents who have children currently attending private or parochial K-12 are much less likely to support additional public K-12 funding. This is an unsurprising and logical outcome, as parents with children in private school would be presumed to oppose additional taxation funding schools that their own children did not attend. Overall, this model predicted a fair amount of variation in the responses ($R^2=0.323$).

Table 13: Additional K-12 Educational Funding		
Variable	Hypothesis	Evidence
<i>Sociodemographic</i>		
<i>Education Level</i>	Higher educational attainment positively correlates with support for increased funding.	Significant, strong effect
<i>Ideological</i>		
<i>Ideology</i>	Conservative political ideology negatively correlates with support for increased funding.	Highly significant, very strong effect
<i>Situational</i>		
<i>K-12 Children</i>	Parents of children in K-12 correlate positively with support for increased funding.	Insufficient evidence to reject the null hypothesis
<i>Private School Children</i>	Private school attendance correlates negatively with support for increased funding,	Insufficient evidence to reject the null hypothesis. Effect is strong and significant at $\alpha=.1$ level. Interaction effect for private K-12 children is very strong and highly significant.
<i>Government Employee</i>	Public/government employees will be more likely to support increased educational funding as a path to higher quality K-12 education in Oregon	Insufficient evidence to reject the null hypothesis

Table 12: Hypotheses for additional funding for K-12 budgets.

In the management model, the only influential variable found to be significant was educational attainment, and the effect was much milder than in other models. Presumably, better

educated individuals would understand the complexities of management and budgetary constraints and be better suited to identify inefficiencies within systems. Interestingly, political ideology was no longer a significant influence when addressing better budgetary management. This may be due to the wording of the survey statement. The statement is worded in a tautological fashion, with the implication that there is a way which funds can be better managed, which may not exist in the first place. As such, it was expected to find overwhelming agreement with that statement regardless of ideological predisposition. The management model was much less predictive of the overall responses ($R^2=0.045$), and the determinants for support for better budgetary management remain obfuscated.

Table 14: Better Management of Current K-12 funding levels		
Variable	Hypothesis	Evidence
<i>Sociodemographic</i>		
<i>Education Level</i>	Higher educational attainment positively correlates with support for better management of funding.	Mildly significant, moderate effect
<i>Ideological</i>		
<i>Ideology</i>	Conservative political ideology positively correlates with support for better management of funding.	Insufficient evidence to reject the null hypothesis
<i>Situational</i>		
<i>K-12 Children</i>	Parents with children currently attending college or university positively correlates with support for better management of funding.	Insufficient evidence to reject the null hypothesis
<i>Private School Attendance</i>	Parents with children currently attending private or parochial school positively correlates with support for better management of funding.	Insufficient evidence to reject the null hypothesis
<i>Government Employee</i>	Government employee status negatively correlates with support for better management of funding.	Insufficient evidence to reject the null hypothesis

Table 13: Hypotheses for better management of K-12 budgets.

Higher Education

The models addressing higher education funding and management are detailed in Table 14. As with the K-12 models, the $\alpha=.1$ significance level was included in the table and discussion, but was not considered significant enough to support the alternative hypothesis in favor of the null.

Table 15: Perceptions on higher education in Oregon³		
	Additional Funding (Q2)	Better Management of Funding (Q4)
	<i>Coefficient (Robust Std. Error)</i>	<i>Coefficient (Robust Std. Error)</i>
Socio-demographic variables		
<i>Age</i>	.011** (.004)	.004 (.003)
<i>Gender</i>	.523 (.290) ⁺	.114 (.240)
<i>Age*Gender</i>	-.010* (.005) [*]	-.002 (.004)
<i>Education Level</i>	.269*** (.049)	.185*** (.035)
Ideology Variables		
<i>Ideology</i>	-.507*** (.042)	.008 (.030)
Situational Variables		
<i>Government Employee</i>	.530*** (.139)	.057 (.104)
<i>College/University Children</i>	.299* (.135)	.102 (.108)
<i>Private School Attendance</i>	-.157 (.154)	.211 ⁺ (.117)
<i>Private*College/University Children</i>	-.364 (.599)	.359 (.349)
Constant	3.58*** (.302)	3.36*** (.206)
R-Squared	.324	.066
Adjusted R-Squared	.313	.051
Observations	N=567	N=567

Table 14: Regression results for questions regarding additional state funding and better management of funding as a path to better higher education in Oregon.

As with the model for the K-12 system, support for additional funding was predicted by educational attainment and political ideology. Those who were more conservative politically were much less likely to support additional higher educational funding compared to those who identified as liberal. Additionally, support for additional funding increased with educational

³ ¹Significance levels +=p<.10, *=p<.05; **=p<.01; ***=p<.001.

attainment. Governmental employees were much more likely to support additional higher educational funding. This may be driven by the high percentage of state workers who are employed within the state university and college system. Of the almost 82,000 state employees, almost 41.5% work within the higher education system. Support among this demographic for additional higher education spending may then be driven by self-interest. Interestingly, age and gender showed some effect at the $\alpha=.1$ significance level in regard to support for additional funding. Gender alone had a strong effect at the generous 10% significance level, and the interaction between age and gender was small and mildly significant. Women appeared to be more likely to support additional funding, with increasing age providing an attenuating effect. This attenuating effect may be explained by the increasing prevalence of conservative ideologies in older age groups. Unlike the K-12 Additional Funding model, there was no significant influence from children attending private or parochial school, even when controlling for only private or parochial higher education attendance.

Table 16: Additional higher educational funding		
Variable	Hypothesis	Evidence
<i>Sociodemographic</i>		
<i>Education Level</i>	Higher educational attainment positively correlates with support for additional funding.	Highly significant, strong effect
<i>Ideological</i>		
<i>Ideology</i>	Conservative political ideology negatively correlates with support for additional funding.	Highly significant, very strong effect
<i>Situational</i>		
<i>College/University Children</i>	Parents with children currently attending college or university positively correlates with support for additional funding.	Strong effect, mildly significant
<i>Private school attendance</i>	Parents with children currently attending private or parochial school negatively correlates with support for additional funding.	Insufficient evidence to reject null hypothesis
<i>Government Employee</i>	Government employee status positively correlates with support for additional funding.	Highly significant, very strong effect

Table 15: Hypotheses for additional funding of higher education budgets.

In regard to better management of higher education funding, the driving determinant was educational attainment of the respondent. Political ideology did not play a significant role among

respondents in their views on management of higher education budgets. There was a fairly powerful, but not significant effect from children attending private or parochial school, however the evidence did not support rejecting the null hypothesis.

Table 17: Better Management of Current Higher Educational Funding			
Model	Variable	Hypothesis	Evidence
	<i>Sociodemographic</i>		
Better Management, Higher Ed	<i>Education Level</i>	Higher educational attainment positively correlates with support for better management of funding.	Highly significant, strong effect
	<i>Ideological</i>		
	<i>Ideology</i>	Conservative political ideology positively correlates with support for better management of funding.	Insufficient evidence to reject null hypothesis
	<i>Situational</i>		
	<i>College/University Children</i>	Parents with children currently attending college or university positively correlates with support for better management of funding.	Insufficient evidence to reject null hypothesis
	<i>Private School Attendance</i>	Parents with children currently attending private or parochial school positively correlates with support for better management of funding.	Insufficient evidence to reject null hypothesis, Significant only at $\alpha = .1$ level
	<i>Government Employee</i>	Government employee status negatively correlates with support for better management of funding.	Insufficient evidence to reject null hypothesis

Table 16: Hypotheses for better management of higher education budgets.

Kendall's Rank Coefficient: Correlation of Dependent Variables

Analysis of the responses for the dependent variables in the survey revealed some similarities between the responses to the survey questions. Kendall's τ_b revealed substantial agreement (0.771) between support for additional K-12 funding and support for additional higher education funding. A similarly high level of agreement (0.692) existed between better management of K-12 budgets and better management of higher education budgets. The correlation was weaker when examining agreement on additional K-12 funding and better

management of K-12 budgets (0.185), as was the correlation between additional higher education funding and better management of higher education budgets (0.195).

Table 18: Kendall's Correlation Matrix (τ_b)				
	Additional Funding K-12	Better Management K-12	Additional Funding Higher Ed	Better Management Higher Ed
Additional Funding K-12	1.000			
Better Management K-12	0.185	1.000		
Additional Funding Higher Ed	0.771	0.141	1.000	
Better Management Higher Ed	0.080	0.692	0.196	1.000

Table 17: Kendall's Correlation Matrix

Discussion

The key demographics of support for increased public education funding are better educated, more ideologically liberal voters. Situational factors play a role in certain cases, such as governmental employment status being a significant predictor of support for increased higher educational funding. Self-interest seems to play a role in predicting parental support of public education, with parents who have children attending private K-12 schools being much less likely to support increased public K-12 funding. In regard to higher educational funding, self-interest may have influenced the strong effect of public employment on one's support for increased funding, as a large percentage of state public employees are employed within the higher education system. Elucidating the degree to which self-interest affects these situational variables is a potential area of future research, as this survey instrument did not capture income levels or specifics where respondents are employed within the public sector.

The determinants of support for better management of current funding levels were much less clear than with increased educational funding. Only educational attainment was found to be significant in either the K-12 or Higher Education models. This may be explained by better educated individuals having more knowledge of current budgetary constraints and funding levels, as well as experience dealing with complex budgets through their employment positions. However, without data capturing job descriptions and income levels, it is impossible to separate confounding factors such as these.

Policy Implications

- 1.) In general, Oregonians find the quality of education in the state to be declining during the period from 2008-2013. However, when asked about K-12 schools in the respondents' own neighborhood, people generally rated schools highly. This suggests there may be a local effect to perceptions of K-12 education policy, where respondents rate their own schools higher than they do the state schools as a whole.
- 2.) Support for additional funding at either the K-12 or Higher Education level can be found strongest among educated individuals who identify as politically liberal, with a potential bias toward younger women.
- 3.) Public employees are a substantial base of support for increased funding at the higher education level only. This may be driven by self-interest.
- 4.) Public opinion on better management of funding doesn't follow ideological lines, despite politically conservative rhetoric about fiscal responsibility. Opinions on budgetary management seem influenced the most by educational attainment, especially at the higher education level.
- 5.) Public perception of any problem with educational quality in higher education is much more optimistic than with K-12 education.

Limitations

The survey instrument lacked a question on income levels. This prevented controlling for socioeconomic differences in the models, and may have provided some insight into the influence of socioeconomic status on the support for publicly funded education. Additionally, while government employees were identified in the survey instrument, there was no differentiation among types of government employees. Since a large portion of Oregon's government

employees are employed in the education system, the influence of being a government employee may be skewed in the data. Additionally, the data only offered a snapshot of political opinion in 2013, which may not be reflective of opinion during a presidential election year where voting demographics may be different.

This survey only investigated individual perceptions and attitudes toward public funding of education. It is recognized in the academic literature that lobbying and advocacy groups play a significant role in the budgetary process for state education (Tandberg, 2010a), and this is true in Oregon specifically. It is difficult to fully elucidate the effects of individual political ideology on support for education without fully examining the effect of special-interest lobbying on state-level education policy.

While there are limitations to this research methodology and these data that could be further examined with subsequent surveys, the data does provide insight into the political opinions of Oregonians in regard to the state's public education system that may be useful when determining messaging for or against a particular education policy issue.

Conclusion

Oregon's political landscape can be best characterized by the opposition between the desire to have quality a public education system and the reluctance to pay for that system. That reluctance has been manifested through the introduction of populist anti-taxation measures that have resulted in strained educational budgets, and a disproportionate burden borne by the state's public higher education system. This competition for shared resources between the K-12 system and the public colleges and universities have made it difficult at times to identify areas of public support, or public opposition to educational budgets and funding policies. The research presented in this essay sheds light on the determinants of public support for educational funding at both the K-12 and College/University level so that policymakers and interest groups can have a more complete understanding of where support and opposition to educational funding come from.

Through the results of a small public opinion survey, the socioeconomic, situational and ideological determinants of public support were elucidated. Demographics already well-supported in literature, such as the ideologically liberal and those with advanced degrees, were shown to be key demographics of support for bolstering funding in both K-12 and higher

education in Oregon. Additionally, and perhaps more interestingly, the influence of governmental employment was found to be a significant predictor of opinion on additional higher educational funding only. Further predictors were identified as interesting but not overly significant. For example, women, especially those younger in age are a significant demographic of support for increased higher education budgets, whereas their influence cannot be found in regard to additional funding at the K-12 level.

While the demographics of support were clearly identified in regard to support for additional funding, the same cannot be said in regard to support for better management of current funds. While Oregonians generally felt that the quality of both K-12 and higher education in Oregon was far from ideal, the support for better management of current budgets did was only influenced by educational attainment. This finding suggests that messaging of fiscal responsibility and management of spending may not be as ideologically based as one may suspect.

While the sample size for the survey was fairly small, slightly older, and slightly better educated than the population of Oregon, the results were robust to statistical controls aimed to eliminate spurious effects from outliers and inflated statistical power of the predictors. It is the hopes of this author that this research may provide insight when tailoring political messaging on issues of educational funding and policy in Oregon.

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