

A COMPREHENSIVE ANALYSIS OF COMMUNITY COLLEGE  
FUNDING MIXES BY STATE, SIZE, AND SETTING:  
2003-2004 TO 2013-2014

by

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## ABSTRACT

The ever-changing landscape of community college finance maintains the need for consistent and continuous research to develop best practices. Policy analysis can inform best practices. The need to constantly improve our knowledge base to inform policy and ensure efficient use of tax payer dollars always exists. Recent community college finance literature analyzes public two-year colleges in their entirety, but national averages mask stark differences in mission, function, and funding – especially local funding – that exist across the 50 states, leaving a large gap in this research. These differences – well known to community college policymakers and community college scholars, have been magnified due to steep declines in state funding over the recent years. Yet they are not well known by sociologists, economists and political scientists focusing on STEM, healthcare, workforce, or college completion issues.

The purpose of this study is to build a reliable data base of revenue across all 50 state systems of community colleges that accurately illustrates state funding flows from 2003-04 to 2013-14. In addition to the need for a consistent categorical analysis of state funding mixtures for community colleges, the ability to analyze geographical differences in relation to the categorical funding mixes at these critically important institutions creates an opportunity for researchers and policy analysts alike to compare similar colleges on a case-by-case basis. Over the course of three articles, public community college revenue streams and enrollment are analyzed in a comprehensive manner that accounts for state funding differences, institutional size, and institutional setting.

The first article uncovers the differences and similarities in the varying funding streams that exist for community colleges over time. The second article offers a student perspective of funding for unmet financial need to access community college education, taking into account the legislative funding differences across the 50 states and across the different institutions by size and geographic setting. Article three considers tax capacity and effort exerted by each state in 2013-14. Through all of these articles, this study takes a close look into the differences and inequalities experienced across the different states and is intended for reference by policy makers looking to investigate best practices.

## DEDICATION

I would like to dedicate this dissertation to my grandfather, Herman Shoemaker. His life was an inspiration to me and his constant support throughout my education career has kept me motivated. Roll Tide!

## LIST OF ABBREVIATIONS

|       |   |
|-------|---|
| AACC  | American Association of Community Colleges              |
| ACIR  | Advisory Commission on Intergovernmental Relations      |
| ARRA  | American Recovery and Reinvestment Act                  |
| BEA   | Bureau of Economic Analysis                             |
| BEOG  | Basic Educational Opportunity Grant                     |
| BLS   | Bureau of Labor Statistics                              |
| DCP   | Delta Cost Project                                      |
| DOE   | Department of Education                                 |
| FTE   | Full-Time Equivalent                                    |
| GASB  | Governmental Accounting Standards Board                 |
| IPEDS | Integrated Postsecondary Education Data System          |
| LEAP  | Leveraging Educational Assistance Partnership [Program] |
| MDCS  | Mission-Driven Classification System                    |
| MOE   | Maintenance of Effort                                   |
| NCES  | National Center of Education Statistics                 |
| SEOG  | Supplemental Educational Opportunity Grants             |
| U.S.  | United States   |

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## INTRODUCTION

The purpose of this study is to illuminate the differences that exist in community college finance across the nation. Analyzing policy that effects community college funding must be done on a continuous basis. To paraphrase Ken Halstead on page 46 of his 1972 book, Statewide Planning in Higher Education, maintaining a consistent analysis to accurately inform policy makers requires categorical comparisons where the institutions compared to each other share common characteristics that equate to similarities or differences in order reveal their true relative character. A common theme in most community college finance literature is the difference in states that have access to local funding streams and those that do not. Additionally, community colleges differ in enrollment size as well as geographical setting. Using federal datasets and accompanying research from experts in this field, this study will compare and contrast all public community colleges in the United States. Through the lenses of local funding, institutional size, and geographic setting, this study will shed light on the differences that exist and provide a discussion in an effort to inform policy through three academic journal style articles.

The first article in this study explores the funding differences from an institutional perspective. Article one, *The Varying Revenue Streams at Community Colleges by State, Size and Setting*, analyzes funding per student and accounts for categorical differences in institutional size and setting to show that differences exist and just how much those differences account for in terms of revenue. The second article in this study, *Disparities in Unmet Student Financial Need at Public Community Colleges*, explores these community college funding differences from a

student perspective. By calculating unmet financial need that places barriers on access for community college students to enroll, this article will illustrate different access issues by state, size and setting, as well as how federal dollars have begun to ameliorate those differences. The third article in this study, *State Financing for Public Community Colleges: A Comparative Study of Fiscal Capacity and Tax Effort*, analyzes revenue from state and local governments to community colleges. By analyzing state by state differences in fiscal capacity and tax effort to fund their community colleges, combined with the willingness and effort to do so allows for a discussion on state priorities and ensuing best practices.

This study builds on the work of national scholars and experts in the field of community college finance to develop a sound analysis. This study is intended for policy makers, institutional administrators, and government officials to be fully informed of the differences that exist in community college funding and how those differences affect the institutions and the students they serve. Throughout each article, a discussion on policy nuances associated with the findings will inform further research.

## THE VARYING REVENUE STREAMS AT PUBLIC COMMUNITY COLLEGES BY STATE SIZE AND SETTING, FY 2003-04 TO 2013-14

Policy analysis can inform best practices. The need to constantly improve our knowledge base to inform policy and ensure efficient use of tax payer dollars always exists. This study seeks to address a lack of analysis of the differing revenue streams for public community colleges from state to state, and taking into account institutional size and geographic setting. Vast differences in higher education exist across the 50 United States of America. Thanks to the newly released Mission-Driven Classification System (Shedd, 2017), institutional size and setting for community colleges can be accurately transposed onto the varying state funding mechanisms to display the stark differences that exist within and between them.

These differences are well-known by experts in the field—former American Association of Community Colleges (AACC) President George A. Boggs noted that differences exist between community colleges in states with and states without local funding in 2003 (McCormick & Cox, 2003). This functional disconnect still exists and, in fact, has been magnified due to the steep decline in state funding in the recent years. In order to illustrate these changes in state funding flows and how they have impacted community college finance and policy, we must first understand the unique and somewhat precarious nature of community college history. This sheds light on the importance of comparative analysis and informs the methodological approach to conducting a study such as this.

The late Robert P. Pederson (2005), a noted community college scholar and the first

writer and senior editor of *Community College Week*, elaborates on early community college funding in his a sense that allows researchers to realize the changing landscape:

“Our understanding of the funding of public junior colleges prior to 1940 has been strongly influenced by the ideology of current scholars. A close reading of the historical record reveals that early junior colleges were rarely subsidized by states. Rather, their costs were met by approximately equal contributions of local tax revenue and unaided tuition, in an era that can best be characterized as one of high tuition and low aid.” (pg. 5)

Pederson provides a launching point for researchers to realize the significance of a comparative analysis that accounts for state-by-state funding differences. The ever-changing landscape of community college finance underscores the need for consistent research.

The period 1945 to 1975 can be termed, “The Community College Establishment Era.” In 1947, the *President’s Report on Higher Education and the Democracy* flatly stated that the nation did not have enough institutions of higher education, and that the institutions it did have were not conveniently located to serve a generation of Americans in need of universal access to the thirteenth and fourteenth years of education (1947). Both geographic and programmatic access were needed and were to be provided by “community colleges,” a term first popularized by the 1947 President’s Commission on Higher Education, which would later become known as the Truman Commission. Geographic access meant *universal* access, to both rural and urban areas, while programmatic access meant community colleges that delivered general education and technical or vocational education. In the years immediately after World War II, it was not all clear what community colleges would look like in terms of missions, functions, governance, coordination, and of course finance (Young, 1950).

S.V. “Marty” Martorana who was hired by Governor Nelson Rockefeller to develop the State University of New York’s community colleges as its first Vice Chancellor for Community Colleges, is a key scholar in the literature of state community college systems. Martorana closely followed state legislation across the 50 states, and how this legislation influenced community colleges. His studies, which covered over thirty years, dovetailed closely with the work of Raymond J. Young. Martorana (1974) was of the firm belief that community colleges ought to be controlled and funded similar to public secondary school districts. Like Young, Martorana believed in an extension of the thirteenth and fourteenth years of schooling to prepare citizens for entrance into the workforce and further postsecondary education. Martorana also believed local communities and regions needed “skin in the game” in terms of financing. By documenting state legislation trends in context with community college relationships and funding perspectives over several decades, Martorana’s work placed a broader context on the changing political landscape across the states and what it meant for the public community college. Young argued for “bottom up” community college establishment with localities first voting to establish new districts, then voting to levy taxes on themselves to support college operations.

Further entrenching community colleges into American culture was legislation to serve the children of World War II veterans as they reached traditional college-going age, the so-called “baby boomers.” At the federal level, this included the federal Higher Education Facilities Act of 1963, which became Title VII of the Higher Education Act of 1965, and student aid and institutional support through the Higher Education Act of 1965 and the Education Amendments of 1972. These federal legislative acts provided funding that encouraged states and localities to establish and expand their community colleges eventually to all 50 states. Government support through varying legislative mandates increased funding to these institutions through tax

revenues, as Christopher Mullin, David Baime, and David Honeyman note in their 2015 book Community College Finance:

Government revenue originating from income taxes paid to the federal and most state governments, sales taxes paid to the states and many local authorities, or property taxes paid to local governments all are essential to the operation of all sectors of higher education. (pg. 13)

Kent D. Halstead was commissioned by the U.S. Department of Health, Education, and Welfare to develop a handbook to help the states. His comprehensive 870-page book, Statewide Planning in Higher Education (1972), emphasized major planning problems and solutions for greater efficiency and coordination at the state-level. It is here that we witness the first instance of comparisons among states including the socioeconomic climate for support of education and the financial support of higher education. Halstead (1972) discussed the importance of comparative analysis:

Interstate comparisons, must, nevertheless, be regarded as a useful research instrument, albeit a technique not likely to provide definitive answers. Central to the usefulness of interstate comparisons is the concept of comparability. Comparison is the process of examining relative values to discover characteristic qualities, whether similar or dissimilar. The objects to be compared must share some common identity which equates similarities or differences i.e., an identity which places them side by side to reveal their true relative character. (pg. 46)

Like Halstead, this author argues that best practices should and can be linked to solid policy analysis.

In their review of the community college finance literature through the 1980s and 1990s, Honeyman, Wattenbarger, and Westbrook portray the ebbs and flows of the federal, state, and local appropriations for higher education. Their 1996 book, A Struggle to Survive: Funding Higher Education in the Next Century, discusses what now seems like a rather bountiful funding landscape that higher education as a whole enjoyed entering into the 1980s. Elaborating on the substantial increases in funding, the major sources of revenue were identified as “state and local funding, tuition and fees, annual gifts and endowment, income, and federal funds” (1996, p. 16). The authors described the expenditure patterns of public community colleges that followed suit with the growing enrollments and increasing revenue. They argued that the “seeming intent of colleges and universities to maximize revenue in the 1980’s from any and all sources contributed to the erosion of public trust and confidence in American higher education...” (Honeyman, Wattenbarger, & Westbrook, 1996, p. 17). It is important to consider the rise of privatization, or increasing share that students and families are expected to contribute to higher education, when analyzing higher education finance. The maximization of revenue tied that was enrollment growth and the additional student financial aid revenues that inevitably followed enrollment increases, contributed to the erosion of public trust. Coupling this aspect of community college finance with the historical perspective of community college principles, one realizes rise of privatization in light of the eroding confidence. Each of these factors play a pivotal role in the current funding landscape that we analyze today.

James Leland Johnson (1999) examined the capacity of rural community colleges to foster economic development by providing access to local students. Johnson calculated a net margin ratio between revenue and per Full-Time Equivalent enrollment (FTE) expenditures, and found that the relative financial position of rural community colleges in particular declined

between 1993 and 1997 (Johnson, 1999). Building on Johnson's 1999 study, Billy G. Roessler (2006) documented major gaps in community college finance literature, referencing what Pascarella and Terenzini in 1998 called an "empirical black hole." Roessler's study attempted to fill these gaps with an analysis of revenue and expenditure streams across all 50 states. His research spanned two decades of legislation and funding differences from 1980-81 to 2000-01. Roessler found differences in community college type, location, governance, finance, and even diversification of course offerings. Roessler also studied state disinvestment and the accompanying rise of tuition and fees in higher education from 1980-81 to 2000-01. He found that state student aid was being cut along with state appropriations for higher education. Another key finding of Roessler's that emphasizes this study's significance is that, "the mix of revenues received by community colleges differs by geography and type of governance" (Roessler, 2006 pg. 189). Do these findings still ring true today? The literature presented to this point provides insight to the current community college funding landscape that we see today. As policymakers, advocates, and institutional leaders alike attempt to make sense of higher education funding in the twenty-first century, we need a clear understanding of the current funding landscape across the 50 states.

To better assess the need for research on differing community college funding landscapes at the state level, a close review of the 2013 book, "Understanding Community Colleges" edited by John S. Levin and Susan T. Kater and in particular, the chapter by James C. Palmer is useful. Palmer's chapter, entitled "State Fiscal Support for Community Colleges" summarizes the changing revenue streams that community colleges experienced at the end of the 20<sup>th</sup> century. He describes the competing funding measures that attributed to the rise of research focused on state budgeting for community colleges. Many of the same budgetary competitors that were on

the rise in the early 1990s present the same competition for scarce state dollars that exist today. While all states can attest to the declining state support over recent years, many higher education policy researchers identify the vulnerability of higher education in state funding cuts as a discretionary budget item (Delaney & Doyle, 2011; Palmer, 2008, 2013; Katsinas et al., 2005, 2008, 2017). Palmer's analysis of past research and trend data accurately portrays this time period that coincides with the era of privatization. In his analysis, he discusses how, "each state went its own way as policy-makers developed strategies for meeting this new fiscal obligation [of competition for scarce state resources]" (Palmer, 2013). Thus, exacerbating the already stark differences illustrated in Johnson and Roessler's studies of community college finance. Palmer provides a useful take on the funding landscape of 2008-09, and calls for further research necessary to inform policy-makers of the changing landscape and the need to re-examine the unsustainable funding trends of the last three decades.

In 2015 and 2016, two books were published that dealt directly with community college finance. Both of these books were extremely useful in determining the current set of funding variables that inform this study, however, both works perpetuate the trend of masking differences in community college finance across the states through the use of national averages. In 2015, Christopher Mullin, David Baime, and David Honeyman co-authored Community College Finance: A Guide for Institutional Leaders (2015). Written for institutional leaders and their boards, this work provides an institutional perspective of community college finance, particularly the changing revenue streams and the factors that influence those streams. In addition to discussing revenue at community colleges, the authors provide an analysis of expenditures by detailing institutional level finance aimed at assisting community college leaders, practitioners, state agency staff and leadership, and even policy makers looking to better understand why

college leaders make the decisions they do. This book provides a great understanding of community college finance from the ground level as the authors intended, though it is worth noting that out of 48 tables and graphs, none suggested funding differences by states and through the influence of state and local appropriations.

Another recent book analyzing community college finance was written by Richard Romano and James Palmer entitled, Financing Community Colleges: Where We Are, Where We're Going (2016). James Palmer also serves as editor to the *Grapevine Project*, a collaboration of the Center for the Study of Education Policy at Illinois State University and the State Higher Education Executive Officers (SHEEO). Since 1960, Grapevine has published annual compilations of data on state tax support for higher education, and these studies serve as a catalyst to this study. Palmer and Romano's book provides a chapter on community college finance from a national perspective, and proposes that institutional leaders interpret the findings based on local circumstances such as the varying degrees of investment from state and local governments and the need to research the revenue and expenditure patterns of state policy and service region funding mechanisms. A key takeaway is the concept of varying state fiscal landscapes. Though the authors provide a three-state case study and they call for more research on the subject, a state-by-state categorical analysis is not presented. None of its fifteen tables and figures, lay out the variance of state and local funding support on a comparative basis. The need for consistent analysis on this subject is readily apparent, and the authors provide insight on variables to be used for this study and the necessary means by which to analyze those variables.

Many state-level policy makers have relied upon analysis developed by the Delta Project on Postsecondary Education Costs, Productivity, and Accountability (Delta Cost Project, 2016). The Delta Cost Project uses the Carnegie Classifications as a frame to cut institutions into five

general categories: doctoral, masters, baccalaureate, baccalaureate/associates, and associates. However, the Carnegie Foundation for the Advancement of Teaching Basic Classification system has, in fact, been quite fluid and much has changed between its 2000, 2005, 2010, and 2015 editions. This underscores the need for consistent analysis, which necessarily requires the use of consistent frames. For instance, the latest iteration of the Carnegie Classification, in 2015, places 168 associates colleges into the baccalaureate category based solely on the fact that those institutions awarded one or more bachelor's degrees. Carnegie removed these 168 community colleges from its associates grouping, thus leaving a void in consistency for national averages (Katsinas et al., 2016). This speaks of the need to categorize these institutions on a consistent basis, in order to determine if funding differences exist, and how the different funding mixes for community colleges impact the curricular mix the college can offer to meet state policy goals.

In his 2013 study of *State Fiscal Support*, James Palmer, the editor of the annual *Grapevine Project*, introduces the central theme of *consistent analysis*. Palmer states, “overall national averages mask the considerable differences between states in terms of the mix of revenues used to support the colleges” (Palmer, 2013). Table 1-1 prepared by the author, shows the amazingly wide range of key revenue streams for U.S. community colleges. It uses the finance variables determined by the aforementioned Delta Cost Project. Similar to Palmer's analysis, Table 1-1 clearly shows why averages do not tell the story.

[Insert Table 1-1 Here]

The vital importance of the wide range between stated minimums and maximums across the funding stream mixtures of the 50 states cannot be understated, particularly when viewing state and local appropriations as a percentage of the states' total community college revenue. These stark differences surely mask disparities in the expenditure categories as well as relate

directly to outcomes and productivity of each community college and the given state as a whole. For example, the percentage of total revenue derived from local tax appropriations at public community colleges in Colorado equals 0; in Arkansas it equals 6%; while in Wisconsin, appropriations from local taxes reflect 57% of total revenue (Integrated Postsecondary Education Data System, 2016).

No study has yet analyzed the different funding mixtures across all 50 states since Palmer's Grapevine project did so in 2008. In that year, Grapevine analyzed the FY2006-2007 mix of funding streams. This was the high point of state appropriations prior to the Great Recession. Palmer's study was limited to data availability and consistency dating back to 1979. Palmer's analysis divided institutions into "state community colleges" and "state-aided community colleges." *State community colleges* were defined as "those in which local tax monies constituted less than 10% of total community college revenue from all government sources in fiscal year 2006-07" (Palmer, 2008). In contrast, *State-aided community colleges* are "those in which local tax monies accounted for 10% or more of all government funding" (Palmer, 2008). By using the Grapevine definitions and reaching beyond the recession to 2003-04, policy impacts before, during, and after the Great Recession can be illustrated.

These definitions have led this researcher to conduct a study that reflects all major sources of revenue in its entirety to categorize the community college funding landscape across all 50 states. In addition to the need for a consistent categorical analysis of state funding mixtures for community colleges, the ability to analyze geographic differences in relation to the categorical funding mixes at public community colleges creates an opportunity by which researchers and policy analysts alike can compare similar colleges on a case-by-case basis. Differences in local property tax bases and their impact on financing public education are well

known by policy makers. By utilizing the Mission-Driven Classification System, a consistent spatial comparison is possible. This means that a community college in Alabama can be compared to a community college of similar size and setting (i.e. rural, suburban, urban) in California. Drawing on these “apples to apples” comparisons makes it possible to analyze differences found in the categorical analysis of state funding mixtures. This will be beneficial in drawing comparative conclusions regarding different funding streams across the 50 states. It can specifically help uncover how the era of state disinvestment has impacted different types of community colleges differently.

The differences that exist require continuous and consistent analysis if we are to accurately inform policy. Given the wide ranges of differences and the in depth analysis required to explore those differences, the lack of up-to-date analysis in this policy arena presents a problem that needs to be addressed. In an effort to fill in this research gap and provide a means for consistent analysis to be conducted in the future, this study will pilot test the Mission-Driven Classification System and provide a roadmap for doing so again. In order to highlight where differences exist and provide a discussion for future research as well as current policy implications, three research questions will be used to conduct this study:

- 1) What are the differences at the varying community colleges by size and setting?
- 2) What are the differences like over time?
- 3) Given their size and setting differences, do rural institutions face worse circumstances?

During a time of great change for higher education, rising costs have placed a premium on a four-year college education. From an access perspective, two-year colleges represent the only option for many Americans. Also, according to The University of Alabama Education

Policy Center’s 2012 report, *Workforce Training in a Recovering Economy*, “reflecting on the rising cost and the ever-increasing demand for a postsecondary credential, alternative methods of higher education rely on the community college, such as workforce training” (Katsinas et al., 2012). This rising cost coupled with the effects of the 2008 Great Recession present a need to study community college finance. These points reiterate the importance of community college education to economic wellbeing. From a societal perspective, the issue is the increasing amount that students and families are expected to contribute outside of federal grant dollars for low income familial situations. Further, the socioeconomic development that coincides with postsecondary schooling will maintain a constant need for this type of analysis if we are to effectively inform policy for best practices.

This study builds a reliable database of revenue across all 50 state systems of community colleges that accurately illustrates the funding flows from state appropriations, local appropriations, tuition and fees, and other sources. The need for such a study is clear, and the snapshot of three fiscal years, FY2003-04, FY2008-09, and FY2013-14 will show the variation and the wide range of revenue mixtures (i.e. tuition and fees, federal appropriations, state appropriations, local appropriations, government contracts, government grants and miscellaneous revenues) across all 50 states. This study portrays these funding differences in order to inform policy and practice. The significance of this study clearly can impact what is known about community college finance and thus inform policy analysis.

### **Methodological Approach**

This section introduces the proposed research variables that will be used in this study and the justification for their use. This categorical analysis will cover revenues in constant 2014 dollars and account for enrollment on a Full-Time Equivalent (FTE) scale in FY 2003-04, 2008-

09, and 2013-14. Fiscal Year 2003-2004 represents a good starting point as it builds on Roessler's analysis and allows data to capture the state of the economy prior to the 2008 recession and the resolve that follows through 2014. FY 2013-14 data are the most recent data available in the National Center for Education Statistics' (NCES) Integrated Postsecondary Education Data System (IPEDS) at the time that this study was conducted. As previously discussed, reporting definitions consistently change. So, the ability to refer to the Delta Cost Project Data Dictionary and the accompanying Mapping File allows researchers to use IPEDS Variables to derive the six major funding categories.

It is worth noting the important changes instituted to the financial accounting standards that govern higher education. The Integrated Postsecondary Education Data System (IPEDS) phased in the Governmental Accounting Standards Board (GASB) in 2002. Most public institutions were using GASB standards prior to and during 2002, but all institutions were required to report using GASB standards by 2004 (NCES, 2017). The institutions included in this study are all public institutions, and therefore report under the GASB accounting standards. This change in reporting standards provides consistency in the way that the finance data at public institutions were reported between 2004 and 2014, thus presenting opportunity for an accurate and consistent collection of data for this study.

The Grapevine Project is able to leverage a partnership with the State Higher Education Executive Officers (SHEEO) to collect data by survey metrics. In order to offer a means for consistent analysis that can be conducted regularly without the use of leveraged SHEEO networks, the American Institutes for Research's Delta Cost Project (DCP) will inform the variables gathered from IPEDS. This strict adherence to the DCP data definitions and the accompanying mapping file is used to collect, merge, and analyze the data gathered from IPEDS

as a logical means to provide consistency. Future research can be conducted on this subject by tracing each of the following DCP variables back to their IPEDS origin. The variables, their definition, and mapping files can be found listed in the American Institute for Research's DCP database.

The DCP revenue variables used in this study are as follows: State Appropriations, Local Appropriations, Federal Appropriations (due to the limited nature of these revenues, Federal Appropriations may be classified under Miscellaneous Revenues), Net Student Tuition, Government Grants and Contracts (Including Pell Grants and Workforce Training), and Miscellaneous (includes gifts, capital or private grants and contracts, auxiliary enterprises, and other revenue). To accurately analyze the revenue flows, including revenue directly from students, the DCP variable *Net Student Tuition* was used as opposed to *Net Tuition Revenue* to gain a clear understanding of the revenue share that students personally contribute. Also used to analyze the revenue variables in this study is the reported 12-month full-time equivalent (FTE) undergraduate enrollment data gathered annually by IPEDS. According to the National Center on Education Statistics, the number of FTE undergraduates is the sum of undergraduate credit hours divided by 30 and contact hours divided by 900. Further classifying institutions analyzed in the funding categories is done utilizing the Mission-Driven Classification System which is soon to be published. This classification scheme accounts for institutional size and geographical setting as previously discussed.

### **Categorization of Data According to the Mission-Driven Classification System**

As a means of organization for this ten- year data collection, data are categorized based on the recently introduced and soon-to-be published Mission-Driven Classification System (hereafter referred to as MDCS). MDCS is the next step in the evolution of the Carnegie Basic

Classification Scheme as modified by Katsinas, Lacey and Hardy in 2005 to account for geospatial differences. In 2017, this scheme was revamped to reflect the 2013-14 higher education universe. Stephen Katsinas, Vincent Lacey, Louis Shedd, Nathaniel Bray, and Andrew Koricich were able to allocate all 980 associates degree granting public community colleges into seven categories arranged by institutional size and geographic setting. Thanks to them, the data used in this study can be accurately transposed onto the varying state funding mechanisms to display the stark differences that often exist within and between them.

MDCS accounts for the similar size and setting of institutions, but its inherent purpose defines the institutional categories based on each institution's true mission as it relates to the entirety of U.S. higher education. Community colleges as defined according to the MDCS, "are institutions with a service area mandated by some type of governing body. Their programs are considered two-years or shorter, for which they award certificates or associate degrees. While community colleges can award four-year degrees, the majority of their programming consists of curricula that are two-years or shorter" (Shedd, 2017). Utilizing this classification system to aggregate the community college revenue data provides for a more accurate comparison of colleges with comparable size, setting, and mission. By utilizing the MDCS, this study will produce an up-to-date analysis of the different types of community colleges that are funded differently state-by-state and across geographical differences. This methodology and data collection aims to produce a comparative analysis to derive policy oriented best practices.

### **Limitations**

This study is designed to operate with the following limitations:

1. The years for which data can be gathered span from 2003-04 to 2013-14. The reason for this limitation is the changing reporting methods over time and the need for consistency within each variable collected.
2. Since each institution submits separate data to IPEDS, the data reported to IPEDS are representative of that institution's data collection and feedback. Therefore, in some instances data may be incomplete or inaccurate.
3. As a means of presenting comparable data across a decade of reporting, some institutions were not included in this study since they may have not reported critical information in a given year. To be included in this study, institutions had to report for all three years: 2003-04, 2008-09, and 2013-14.
4. Data for institutions reporting for multiple districts or campuses are collected and reported as such.
5. Certain states have differing funding provisions within their states. Though these institutions are funded differently, for the purposes of this study, the data gathered are presented through an aggregated base.

### **Delimitations**

This study is designed to operate with the following delimitations:

1. The institutions that are included in the data collection and analysis for this study are limited to the 980 institutions listed under the IPEDS institutional sector further modified by the Mission-Driven Classification System as "Community Colleges" for the year of 2014. Any institution not located in the traditional 50 United States are removed from the dataset.

2. This study examines all public two-year institutions' funding flows. Adding institutions that do not operate under the same funding parameters would skew the results. For that reason, any two -under four-year and/or tribal institutions are removed from the dataset.
3. This study is confined to using the variables defined in the Delta Cost Project dataset, data dictionary, and mapping file.
4. This study categorizes state funding mixtures based on the 2013-14 data analysis of revenue and maintains the categorization when reviewing any prior year data.
5. To narrow the datasets for scale, data may be represented in "snapshots" of aggregated and categorized percentages relative to similar and dissimilar entities.

### **Assumptions**

This study is conducted under the following assumptions:

1. The data reported to IPEDS by the institutions are the most accurate data available.
2. Other than James Palmer's Grapevine Project and Billy Roessler's 2006 dissertation study, no categorical analysis of state-by-state funding mixes has been completed using the above-mentioned methodology.
3. The researcher's findings and recommendations will be used for best practices approach to policy analysis.
4. The institutions included in this study are all public institutions, and are therefore reporting under the GASB accounting standards.

The aforementioned limitations and delimitations of this study set the boundaries by which this analysis is conducted. The most trusted source for postsecondary education data provides the variables used. Utilizing the NCES IPEDS database has inherent reporting caveats, yet analyzing these institutions state-by-state, and through a classification scheme such as the

MDCS, allows for the larger picture of different funding landscapes to be examined. The study itself is limited to public community colleges in the 50 United States in an effort to maintain focus on domestic policy and the effects that funding streams have on similar institutions.

### **Data Extraction**

The following procedure was used to extract and aggregate the NCES IPEDS data variables that are used to derive the Delta Cost Project data variables:

1. The IPEDS UnitIDs for all 980 Public Community Colleges listed in the MDCS was gathered and used to sort the NCES IPEDS data variables by institution.
2. The data were collected through the NCES IPEDS Data Center for all ten years that this study is reporting and downloaded as a comma-separated file.
3. The revenue data were adjusted to reflect inflation through FY2014 using the Bureau of Labor Statistics' Consumer Price Index. All data represented are in constant 2014 U.S. dollars.
4. The NCES IPEDS data variables were then combined based on the Delta Cost Project's data definitions and mapping files previously mentioned to derive the six major revenue streams as defined by the Delta Cost Project.

### **Criteria for Institutions to be Included in the Study**

As a means of presenting comparable data across a decade of reporting, some institutions were not included in this study since they may have not reported critical information in a given year. Institutions that did not report complete enrollment and financial data necessary to this study, were not included in the final data set. If the state's community colleges are coordinated through a system-wide setting, the Parent Institution may report for the Child Institution. Using Program Participation Agreements that the U.S. Department of Education records Title IV

funding eligibility with, these instances are captured through IPEDS with an Office of Postsecondary Identifier (OPE ID). The OPE ID is a six-digit code and a two-digit suffix used to identify branches, additional locations, and other entities that are part of the eligible institution and is helpful in sorting Parent-Child institutional relationships. In certain instances, when the state community college system was too large to *not* include, the data were imputed. This was the case for Florida and Indiana. In the case of Indiana's Ivy Tech Community College, a total of twenty-three community college campuses report through fourteen regional divisions, and in IPEDS all enrollment data after 2008-09 are reported through the Indianapolis campus. Using the Ivy Tech Office of Institutional Research's annualized FTE Enrollment Report, the data for each of the twenty-three campuses were imputed for the years encompassed in this study. A similar instance was discovered in Florida, and the Florida Department of Education's FTE Enrollment report was used to impute the Florida Community College data.

[Insert Table 1-2 Here]

The institutions that were included in the final data set represent 93% or 916 of the total 980 MDCS community college's. Under the MDCS classifications, 60% of the 980 community colleges are Rural, 22% are Suburban, and 17% are Urban. The institutions presented in the final data set for this study represent 59%, 23%, and 18% respectively. In terms of enrollment, the ratio of Full-Time Equivalent (FTE) enrollment across the three main categories represents 35%, 30%, and 36% respectively for Rural-, Suburban-, and Urban-serving Community Colleges. Delving deeper into the dataset, one quickly notices the sheer difference in FTE at a Rural Small Community College as compared to an Urban Multi-Campus institution, thus reinforcing the fact that national averages can easily mask vast differences relative to institutional size and geographic setting. For comparison purposes, the 106 Rural Small institutions average 940

students, while the Urban Multi-Campus institutions average 9,245 students. An even comparison is unlikely to be made without accounting for enrollment and, of course, the differing funding streams across the 50 states.

## **Results**

The resulting tables and figures are provided with description to elaborate on the findings for discussion and recommendation of future study.

[Insert Table 1-3 Here]

Table 1-3 illustrates the number and percentage of MDCS institutions represented in this study with respect to the amount of local funding they do or do not receive. Out of the 916 total MDCS institutions in this study, 434 or 46% are in a non-locally-funded state and 482 or 54% are in a locally-funded state. Table 1-3 shows more Rural-serving community colleges are in non-locally-funded states (54%) than in locally-funded states (46%). In contrast, about six of ten Suburban and Urban community colleges are in locally-funded states. Thus while it may appear that more institutions are located in a locally-funded state, the data reveal that the majority of rural institutions are located in non-locally-funded states suggesting the precarious nature of their establishment. This finding is echoed in the FTE enrollment data depicted the Table 1-4. Due to the Urban-serving institutions category maintaining such a small percentage of the total MDCS institutions, their data are more volatile or sensitive to reporting errors. Overall, an even representation of institutions is included in this study. However, when one includes enrollment variables at these institutions, the differences are stark between the geographic make-up across the non- locally-funded and locally-funded states.

[Insert Table 1-4 Here]

Table 1-4 depicts the shift from James Palmer's 2008 *Grapevine* study of State-Aided and State Community Colleges. According to Palmer, State Community College systems are states where less than 10% of the state's entire community college revenue was derived from local appropriations; and State Aided Community College systems are states where at least 10% of the state's entire community college revenue was derived from local appropriations (Palmer, 2008). This researcher has termed these states non-locally-funded (less than 10%) and locally-funded states (more than 10%). Palmer's 2008 study identified an even split of 25 and 25 states, whereas this analysis of the 2013-14 data reveals a shift to 31 non-locally-funded state community college systems and 19 locally-funded state systems.

A key takeaway from this analysis is that the locally-funded states enroll 62% of the entire community college student population on a FTE basis. Additionally, six of the eight Mega-States are locally-funded state systems (California, Illinois, Ohio, New Jersey, New York, and Texas). A Mega-State is defined by *Grapevine* as a consortium of states that account for over 50% of state appropriations for higher education. The Mega-States included in the locally-funded category enroll approximately 43% of the total FTE within that category. This finding echoes Table 1-3 depicting more Rural Small and Rural Medium institutions in non-locally-funded states.

[Insert Table 1-5 Here]

Table 1-5 depicts FTE as a percent of the total and percent change over time for all seven MDCS types and aggregated types. Community colleges as a whole have experienced FTE enrollment growth over the last decade, with the majority of that growth coming prior to and during The Great Recession of 2008. It seems as though enrollment trends for the second half of the decade under study has plateaued in relation to the steady increases leading up to and during

the recession, when individuals were likely enrolling at community colleges to improve their employment outlook. Notably, the Rural Small institutions have experienced a decline in enrollment over the ten-year span depicted in this table. Juxtapose that scenario with the total increase of 18% across all sectors and particularly the increase in enrollment seen at Urban and Suburban Multi-Campus institutions over the ten-year period. Taking into account the size and setting of these institutions again demonstrates the variance across the nation and underscores the importance of geospatial factors such as population of service delivery areas. However, without factoring in revenue-per-student, the differences in between and across states are masked within the national totals. One thing is for certain: more students are attending now than before, pointing to the importance of consistent policies and the need for equitable funding metrics.

[Insert Figure 1-1]

Similarly, as Figure 1-1 shows, the revenue generated at each of the MDCS' seven institutional categories depict comparable increases and decreases across each of the six revenue streams as a percentage of total revenue. Again, simply comparing bottom line total revenues ignore the vast differences in enrollment previously mentioned, so the percentage of total revenue provides an even comparison. Once again, when using averages across all community colleges, even when utilizing the MDCS categories to account for size, setting, and mission, differences between the state funding mechanisms are masked.

Figure 1-1 explains why comparative efforts mentioned by Kent Halstead in his 1972 book, Statewide Planning in Higher Education, are still relevant today. In his commissioned report Halstead states, "the objects to be compared must share some common identity which equates similarities or differences, i.e. an identity which places them side by side to reveal their true relative character." The Mission-Driven Classification System certainly does that on a scale

relative to the entire universe of over 1,500 public higher education institutions, whereas Carnegie's Baccalaureate-granting Associates Colleges are not and should not be compared to their counterparts who do not award bachelor's degrees.

One may also note the change from year to year within each revenue stream category, but it's also important to note the consistency of change across each category. While differences exist across the seven MDCS institution categories, these differences are magnified when revenue is viewed on a per FTE basis, as Figure 1-1 shows. The real analysis of how students are served differently across these categories can be seen in the percentage of funding from state appropriations, local appropriations, tuition revenue, and government grants and contracts. Note how each MDCS institution category can be perceived. They are still relatively comparable. State appropriations and tuition per FTE enrollment as a percent of total revenue vary a little, especially at the Rural Small institutions, but as a whole do not differ in what might be called a stark contrast. Thus recalling the various enabling laws across the 50 states, George Boggs' point is still very much in effect: the presence of local funding matters. The national averages still mask key differences in and across the states. Keeping Boggs' statement in mind, take a look at the total revenue per FTE displayed in Figure 1-2.

[Insert Figure 1-2 Here]

Figure 1-2 depicts the FY 2003-04 revenue per FTE in locally-funded States and non-locally-funded states. As former AACC President George Boggs noted in 2003, the key difference is the presence of local funding. The 2003-04 revenue streams per FTE are depicted here by percentage of total revenue in locally-funded states and non-locally-funded states, and stark differences in tuition and state appropriations as a percentage of total revenue are revealed. Institutions that are identified as Suburban Single Campus, Suburban Multi-Campus, and Urban

Multi-Campus are more dependent on tuition in non-locally-funded states than in locally-funded states. The Rural Small institutions in non-locally-funded states are very dependent on state appropriations as they made up 48% of their total revenue in 2003-04, compared to only 33% in locally-funded states since more Rural Small community colleges are in non-locally-funded states. While it can be said that the additional percentage of funding from local appropriations makes up the difference, consider the local control of that funding and the ability that those institutions have to work with local boards and economies of scale to generate that revenue. Then, compare that control to the whims of the legislative process at the state level, which we already know as volatile and ever changing. Peering further into this dichotomy, one wonders what effect the different state enabling laws have on the institutions' ability to keep costs down and provide high quality education and training. Furthermore, as Stephen Katsinas pointed out in his 2005 *New Directions for Community Colleges* article "Increased Competition for Scarce State Dollars," "Colleges without access to local revenue streams may be forced to cut high-cost, high-tech programs such as allied health nursing, or statistical numerical control machining – despite research showing these programs are critical to their regional economies" (p. 28). This is likely what may well have occurred.

[Insert Figure 1-3 Here]

Figure 1-3 provides a snapshot of the same variables for FY 2008-09. Net student tuition revenue has increased as a percentage of total revenue by 8% at the Urban Multi-Campus institutions in non-locally-funded states. That is in direct relation to the decrease in state funding from 39% to 32% at these institutions. Students are clearly taking on more of the cost. The Suburban Multi-Campus institutions are experiencing a similar reaction to state disinvestment though on a smaller scale than the Urban Multi-Campus colleges. Notable differences between

the locally-funded states and non-locally-funded states can be seen with the combined local and state support across all four of the MDCS Suburban and Urban Campus categories. Locally-funded Suburban Multi-Campus institutions draw down 60% of their total revenue from state and local appropriations, whereas the same MDCS category in the non-locally-funded states are only seeing 38% of their total revenue from those sources. What makes up the difference? A better way to phrase that question is who makes up the difference. Net student tuition revenue accounts for 29% and 32% respectively at suburban single and suburban multi-campus institutions. In the locally-funded states, 19% and 14% of the total revenue per FTE are generated by student tuition.

[Insert Figure 1-4 Here]

The breakdown of different revenue streams per FTE at local and non-local community colleges in FY2013-14, shown in Figure 1-4 reveals stark differences in tuition and state appropriations as a percentage of total revenue once again. As state appropriations decline, institutions in non-locally-funded states are becoming more dependent on government grants and contracts which includes Pell Grants and workforce training support. Rural Small institutions in non-locally-funded states are still very dependent on state appropriations compared to locally-funded states. Suburban and urban public community colleges in non-locally-funded states have a much higher percentage of revenue from students than in locally-funded states. Also, note the percentage of revenue derived from state and local appropriations combined in locally-funded states- particularly at the Suburban and Urban Multi-Campus institutions, it reaches 61% and 57% respectively, while it only tops out at 31% and 32% in the non-locally-funded states. These stark differences in funding must necessarily impact institutional operations.

So just what do these percentages of total revenue per FTE mean? What are the implications of these funding differences across the states and even within the states at the various MDCS settings? Table 1-6 shows funding per FTE for all institutions regardless of their MDCS classification, and while it shows the local and non-local differences, it still masks differences across institutional size and setting.

[Insert Table 1-6]

The difference in total funding per FTE enrollment in a non-local state versus a local state was \$3,684 in 2004; \$6,908 in 2009; and \$5,350 in 2014. The funding disparities were especially magnified in the first five years of this study. Maintenance of Effort Provisions of 2009, 2010, and 2011 were incentive packages for states to maintain level funding through the 2008 Recession's recovery period (Clark, forthcoming). Combined with the influx of Pell Grant Funding (Mullin, 2013) these two federal influences seemed to have slowed down state disinvestment during the second five-year period. Even though the locally-funded states have more students, overall they still draw down much more total funding per student. The difference is in the local appropriations category. Community colleges in locally-funded states are receiving up to \$4,020 more dollars per student from local appropriations alone. Even when looking at state appropriations in FY2014 showing \$3,597 per student in locally-funded states, it only reaches \$3,681 in the non-locally-funded states. Where is the difference made up? Since these are community colleges with open access missions, tuition can only be raised to a point before limiting access. The institutions in the non-locally-funded states may simply doing more with less, but in reality they are likely doing less in terms of offering 21<sup>st</sup> century high-demand, but more expensive, curricula in technical and STEM programs.

These tables and figures provide a clear picture of the stark differences that exist between the states and even within the states at community colleges of different sizes and geographical settings. Local funding most certainly matters as it represents an entirely separate revenue stream not afforded to community colleges in 31 states. This revenue stream can mean, on average, over \$4,000 more per student. State appropriations do not make up the difference, and the situation is worse when communities do not have economies of scale. In reference to the three questions previously presented, the difference between community college size and setting varies greatly. Rural Small, Suburban Single-Campus, and Urban Multi-Campus institutions defer greatly between local and non-locally-funded states. Over time, the stark difference in total funding per FTE student in a non-locally-funded state versus a locally-funded state was an average of \$3,684 in 2003-04; \$6,908 in 2008-09; and \$5,350 in 2013-14. Given the size and setting differences of rural institutions, they do face worse circumstances. These institutions have a potentially greater impact on local economic development, but a lack of economies of scale hinders their effectiveness. This situation is worse in states that do not have local funding provisions.

## **Discussion**

Much has been written over the past decade regarding the decline in state funding due to competition for already scarce resources within state budgets. The need for increases in Medicaid and Corrections generally receive priority when it comes to Higher Education. Since higher education is still the largest discretionary item in state budgets, the ability to and willingness of the local constituents to generate additional revenue from the surrounding service areas is critical to the economic wellbeing of the local community colleges (Katsinas et al, 2003). Compound these recent nuances of state resource competition with the research of Halstead, Boggs, Pederson, Palmer, Roessler and Johnson that suggests major differences exist, and a whole new

landscape of policy affects can be illustrated. This study has shed light on the more recent budget constraints in higher education and is intended to build off of the work provided by the previously mentioned experts.

The trends displayed in the previous figures and tables depict a stark difference in the reality of funding across the states and even within the states, if one takes the MDCS categories into account. The differences center around state and local appropriations. Simply put, states that have local appropriations and enabling laws that allow revenue from local taxes, are better able to offset the state's disinvestment, and continue to serve their students in a consistent manner in respect to cost. Public community colleges that do not have access to significant local revenues are likely doing more with less, or more likely simply doing less.

Community college expectations in workforce training and economic development recently put forth by state governments, the federal government, and workforce development stakeholders provide context to the importance of this study and its findings. What happens if these critical institutions cease doing more with less, and instead simply do less? At a time when the community college has been entrenched in workforce training as an affordable and flexible means of upgrading the skills of the American workforce, this notion can be daunting. As costly technical training programs follow increased workforce demand, the thought that community college funding from state and local sources are declining is certainly perplexing.

Compound the workforce training responsibility with the open access mission and the comprehensive nature of the community college education. The inability to raise tuition to cover the actual cost of the education being provided is noticed in the rise of government grants and contracts, which includes Pell Grants and workforce training, and is mirrored by the decline in state appropriations. These factors create a sense of instability on the horizon. Large equipment

purchases and specialized instructors to teach these programs are costly, and space is generally another big issue. It is important that the local community, state legislature, and workforce development stakeholders realize this compounding issue as increasing demands are being made of their community colleges to train the regional workforce. A means for researching this issue would be to explore the course offerings across the nation's 980 public community colleges. In reviewing credentials and completers across the various programs, one may note a rise in the technical training programs and certificates awarded. An interesting study would take a look at the cost of those programs in relation to the decreases in state and local funding.

Additionally, if the institution is in a rural setting, regardless of the absence or presence of local funding, the dollars will be stretched thin. While state and local funding at urban and suburban community colleges has been consistently higher than their rural counterparts, they are also educating more students and by default have a higher percentage of total revenue from tuition and fees to offset the cost of expensive technical training programs. Essentially, they have economies of scale. Therefore, high-cost technical curricula, which could contribute to local economic development, often are unaffordable for rural community colleges. These institutions therefore struggle to operate state and federal workforce development programs which are typically designed for more urban environments. It seems to be a cyclical approach that should be studied. The rural economies in 19 states with local funding seem to lack the ability to tax themselves enough to institute and maintain expensive programs that would draw industry and/or increase per capita income, and thus deliver more revenue to the institutions responsible for training that workforce. The issue is most likely worse in states that don't have access to local revenue streams.

As policymakers and workforce development stakeholders look to community colleges to fill in the skills gap and provide a well-trained workforce for the future, it is important that they recognize and understand the limitations and barriers inherent to rural community colleges. Furthermore, as government grants and contracts become the norm for supplementing expensive technical programs, especially in states without local funding measures, institutional leaders must realize the administrative burden associated with implementing and maintaining those restricted funds. In order to institute quality programs that meet those skills demands, community college leaders may have difficult decisions to make.

The bottom line conclusion from this study and a key takeaway that should be applied to future community college finance studies is the presence of local funding and the amount of funding per FTE. Without those key ingredients, research on community college finance will mask differences that surely exist across all states and within the states at various community colleges of all sizes and settings.

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**Table 1-1 - Revenues at U.S. Community Colleges (recent years) and the Wide Range of Revenues Sources Across the States in 2013-14**

|                            | Palmer & Romano, 2016 | Mullin, Baime, & Honeyman, 2015 | Koh, 2017        | States' aggregate percentage of revenue from each source [4] |                |               |
|----------------------------|-----------------------|---------------------------------|------------------|--|----------------|---------------|
|                            | [1]                   | [2]                             | [3]              | Range across the states                                      |                |               |
| <b>Revenue Source</b>      | <b>FY2010-11</b>      | <b>FY2012-13</b>                | <b>FY2013-14</b> | <b>Minimum</b>   | <b>Maximum</b> | <b>Median</b> |
| State Appropriations       |                       | 23                              | 27               | 1.8%   | 74.1%          | 28.1%         |
| Local Appropriations       | 46                    | 17                              | 21               | 0.0%   | 56.8%          | 6.1%          |
| Federal Appropriations     |                       | 0                               | 0                | 0.0%   | 3.5%           | 0.0%          |
| Gov't Grants and Contracts | 15                    | 30                              | 28               | 0.0%   | 31.6%          | 7.8%          |
| Tuition and Fees           | 28                    | 16                              | 16               | 3.5%   | 65.0%          | 17.4%         |
| Miscellaneous              | 12                    | 12                              | 7                | 0.6%   | 19.1%          | 7.2%          |

Notes: (1) Palmer and Romano present State and Local Appropriations together. Palmer and Romano present Net Tuition Revenue as calculated by DCP in Desrocher and Hulbert (2014). Net Tuition Revenue is the amount of money the institution takes in from students after institutional grant aid is provided (this is not the same as the net tuition number available in IPEDS which is net of all discounts and allowances applied to tuition and fees). Palmer and Romano also combined Federal Appropriations with all types of government grants and contracts. Data were gathered and organized by state. (2) Mullin et. al adapted from Snyder and Dillow (2014), who use Net Student Tuition. It represents the net tuition revenue coming directly from students (not including Pell, Federal, State, and Local grants). (3) Koh's 2017 analysis is conducted under the following Delta Cost Project Definitions using its Data Mapping File. Net Student Tuition (DCP variable #54) - Revenue coming directly from students (not including Pell, Federal, State, and Local grants). To arrive at the DCP Variable #54, Net Tuition Revenue, find the sum of Funded and Unfunded Institutional Grant Aid variables in IPEDS and subtract that from the total Tuition and Fee Revenue variable in IPEDS. State Appropriations- Revenues received by the institution through acts of a state legislative body (except grants, contracts, and capital appropriations). Funds reported in this category are for meeting current operating expenses, not for specific projects or programs. Local Appropriations - Revenues from appropriations by a governmental entity below the state level. Education district taxes include all tax revenues assessed directly by an institution or on behalf of an institution when the institution will receive the exact amount collected. These revenues also include similar revenues that result from actions of local governments or citizens (such as through a referendum) that result in receipt by the institution of revenues based on collections of other taxes or resources (sales taxes, gambling taxes, etc.). Federal Appropriations - Revenue received by the institution through acts of a federal legislative body (except grants and contracts). Government Grants and Contracts include Pell and Workforce Training grants from Federal, State, and Local entities. Public institutions will report Pell grants as federal revenues and as allowances (reducing tuition revenues), whereas private institutions use Financial Accounting Standards Board (FASB) standards. FASB institutions may do this as well or (as seems to be the majority) treat Pell grants as pass-through transactions. All institutions included in this study are governed by the Governmental Accounting Standards Board (GASB). Therefore, Pell Grants are encompassed in the Federal Operating and Non-Operating Grants and Contracts Variable. Miscellaneous Sources- Operating and non operating revenue; private gifts grants and contracts; investment return; auxiliary sales and services. Only institutions codes with data, including imputed, each time period are included. (4) Data were then combined and aggregated to show differences across and within all 50 states.

| <b>Table 1-2 - Number and Category of all Community Colleges by Mission-Driven Classification System (MDCS)</b> |                   |            |               |                        |            |                  |                |
|---|-------------------|------------|---------------|------------------------|------------|------------------|----------------|
| Mission-Driven Classification System (MDCS)   | MDCS Institutions |            |               | Meeting Study Criteria |            |                  |                |
|   | #                 | % of Total | % of Subclass | #                      | % of Total | 2013-14 FTE      | % of total FTE |
| Rural - Small   | 131               | 13         | 22            | 106                    | 20         | 97,113           | 2              |
| Rural - Medium  | 300               | 31         | 51            | 274                    | 51         | 588,322          | 13             |
| Rural - Large   | 161               | 16         | 27            | 162                    | 30         | 852,545          | 19             |
| <b>Rural Total</b>  | <b>592</b>        | <b>60</b>  | <b>100</b>    | <b>542</b>             | <b>59</b>  | <b>1,537,980</b> | <b>35</b>      |
| Suburban - Single   | 109               | 11         | 50            | 107                    | 51         | 586,569          | 13             |
| Suburban - Multi  | 109               | 11         | 50            | 101                    | 49         | 726,966          | 16             |
| <b>Suburban Total</b>   | <b>218</b>        | <b>22</b>  | <b>100</b>    | <b>208</b>             | <b>23</b>  | <b>1,313,535</b> | <b>30</b>      |
| Urban - Single  | 37                | 4          | 22            | 36                     | 22         | 375,515          | 9              |
| Urban - Multi   | 133               | 14         | 78            | 130                    | 78         | 1,199,634        | 27             |
| <b>Urban Total</b>  | <b>170</b>        | <b>17</b>  | <b>100</b>    | <b>166</b>             | <b>18</b>  | <b>1,575,149</b> | <b>36</b>      |
| <b>Community Colleges Total</b>   | <b>980</b>        | <b>100</b> | <b>N/A</b>    | <b>916</b>             | <b>93</b>  | <b>4,426,664</b> | <b>100</b>     |

Source: Shedd (2017) and Integrated Postsecondary Education Data System (IPEDS) for academic years 2003-04, 2008-09, and 2013-14.

Notes: 1) Since some child records only reported enrollment with the parent reporting revenues and expenditures, numbers above represent those with 2014 enrollment data to provide a more complete representation. 2) Numbers reflected are number of institution codes- not campuses and not districts. 3) Number of Institutions in MDCS represents number of institution IPEDS codes by sub-class in 2014 according to Shedd (2017). 4) % of MDCS sub-class is the number meeting study criteria divided by the number in MDCS for the particular sub-class. 5) Number meeting study criteria denotes those institution codes with enrollment data for each of the five year time periods in the study. 6) % of Study Total is the number in the sub-class meeting the study criteria divided by the MDCS total of 980. 5) Total may appear slightly off, due to rounding.

**Table 1-3 - Breakdown of Mission Driven Classification System Institutions by Non-Locally Funded and Locally Funded States Reporting Data, 2013-14**

| Mission Driven Classification | # of Institutions Reporting Data | Non-Local  |           | Local      |           |
|-------------------------------|----------------------------------|------------|-----------|------------|-----------|
|                               |                                  | #          | %         | #          | %         |
| Rural Small                   | 106                              | 66         | 62        | 40         | 38        |
| Rural Medium                  | 274                              | 159        | 58        | 115        | 42        |
| Rural Large                   | 162                              | 70         | 43        | 92         | 57        |
| <b>Rural Total</b>            | <b>542</b>                       | <b>295</b> | <b>54</b> | <b>247</b> | <b>46</b> |
| Suburban Single Campus        | 107                              | 38         | 36        | 69         | 64        |
| Suburban Multi- Campus        | 101                              | 40         | 40        | 61         | 60        |
| <b>Suburban Total</b>         | <b>208</b>                       | <b>78</b>  | <b>38</b> | <b>130</b> | <b>63</b> |
| Urban Single - Campus         | 36                               | 21         | 58        | 15         | 42        |
| Urban Multi- Campus           | 130                              | 40         | 31        | 90         | 69        |
| <b>Urban Total</b>            | <b>166</b>                       | <b>61</b>  | <b>37</b> | <b>105</b> | <b>63</b> |
| <b>Total All</b>              | <b>916</b>                       | <b>434</b> | <b>47</b> | <b>482</b> | <b>53</b> |

Source: Shedd (2017) and Integrated Postsecondary Education Data System (IPEDS) for academic years 2003-04, 2008-09, and 2013-14.

Notes: 1) Total Operating Revenue calculated through sum of all operating revenue categories defined by NCES Digest of Ed. Statistics (nces.ed.gov/pubs2016/2016006.pdf, 2014). 2) Variable definitions as defined by Delta Cost Project Data Dictionary. 3) Percentages derived by total Local Tax Appropriations for each State's community colleges divided by Total operating Revenue for each State's community colleges.

**Table 1-4 - Percentage of Total Revenue from Local Appropriations by State, 2013-2014**

| Less than 10% of Total Revenue comes from Local Appropriations |                      |                             |                     |                | Over 10% of Total Revenue comes from Local Appropriations |                      |                             |                     |                |
|--|----------------------|-----------------------------|---------------------|----------------|---|----------------------|-----------------------------|---------------------|----------------|
| State  | % from Local Approp. | # of Institutions reporting | 2014 FTE Enrollment | % of Total FTE | State   | % from Local Approp. | # of institutions reporting | 2014 FTE Enrollment | % of Total FTE |
| AK   | 0.0                  | 0                           | NA                  | NA             | OK  | 10.2                 | 12                          | 40,112              | 0.9            |
| CO   | 0.0                  | 14                          | 49,774              | 1.1            | <b>OH</b>   | <b>10.5</b>          | <b>26</b>                   | <b>126,974</b>      | <b>2.9</b>     |
| CT   | 0.0                  | 14                          | 33,874              | 0.8            | ID  | 12.3                 | 4                           | 15,428              | 0.3            |
| DE   | 0.0                  | 0                           | NA                  | NA             | IA  | 13.9                 | 16                          | 65,181              | 1.5            |
| <b>FL</b>  | <b>0.0</b>           | <b>28</b>                   | <b>330,142</b>      | <b>7.5</b>     | WY  | 15.4                 | 7                           | 13,953              | 0.3            |
| HI   | 0.0                  | 6                           | 16,255              | 0.4            | MO  | 15.5                 | 14                          | 72,201              | 1.6            |
| IN   | 0.0                  | 1                           | 67,265              | 1.5            | OR  | 16.9                 | 17                          | 72,133              | 1.6            |
| LA   | 0.0                  | 15                          | 48,592              | 1.1            | <b>NJ</b>   | <b>17.0</b>          | <b>19</b>                   | <b>122,456</b>      | <b>2.8</b>     |
| MA   | 0.0                  | 16                          | 67,121              | 1.5            | <b>NY</b>   | <b>22.0</b>          | <b>35</b>                   | <b>236,382</b>      | <b>5.3</b>     |
| ME   | 0.0                  | 7                           | 11,510              | 0.3            | MD  | 25.9                 | 16                          | 87,126              | 2.0            |
| MN   | 0.0                  | 29                          | 88,238              | 2.0            | <b>CA</b>   | <b>26.8</b>          | <b>107</b>                  | <b>781,853</b>      | <b>17.7</b>    |
| ND   | 0.0                  | 6                           | 4,427               | 0.1            | NM  | 28.6                 | 17                          | 47,328              | 1.1            |
| NH   | 0.0                  | 7                           | 9,310               | 0.2            | MI  | 28.7                 | 22                          | 119,318             | 2.7            |
| NV   | 0.0                  | 1                           | 6,372               | 0.1            | KS  | 30.5                 | 25                          | 56,502              | 1.3            |
| RI   | 0.0                  | 1                           | 10,233              | 0.2            | <b>TX</b>   | <b>33.5</b>          | <b>57</b>                   | <b>429,662</b>      | <b>9.7</b>     |
| SD   | 0.0                  | 4                           | 6,189               | 0.1            | <b>IL</b>   | <b>37.2</b>          | <b>48</b>                   | <b>244,796</b>      | <b>5.5</b>     |
| TN   | 0.0                  | 13                          | 57,350              | 1.3            | NE  | 38.1                 | 6                           | 29,728              | 0.7            |
| UT   | 0.0                  | 1                           | 20,007              | 0.5            | AZ  | 50.5                 | 19                          | 126,650             | 2.9            |
| VT   | 0.0                  | 1                           | 3,314               | 0.1            | WI  | 56.8                 | 15                          | 55,152              | 1.2            |
| WA   | 0.0                  | 32                          | 49,051              | 1.1            |   |                      |                             |                     |                |
| KY   | 0.0                  | 16                          | 52,830              | 1.2            |   |                      |                             |                     |                |
| GA   | 0.0                  | 24                          | 88,487              | 2.0            |   |                      |                             |                     |                |
| VA   | 0.2                  | 23                          | 120,829             | 2.7            |   |                      |                             |                     |                |
| AL   | 0.3                  | 25                          | 66,035              | 1.5            |   |                      |                             |                     |                |
| WV   | 0.6                  | 9                           | 10,848              | 0.2            |   |                      |                             |                     |                |
| MT   | 4.4                  | 6                           | 5,430               | 0.1            |   |                      |                             |                     |                |
| AR   | 5.5                  | 22                          | 38,805              | 0.9            |   |                      |                             |                     |                |
| SC   | 7.8                  | 20                          | 73,147              | 1.7            |   |                      |                             |                     |                |
| MS   | 8.9                  | 15                          | 65,003              | 1.5            |   |                      |                             |                     |                |
| <b>NC</b>  | <b>9.1</b>           | <b>58</b>                   | <b>188,694</b>      | <b>4.3</b>     |   |                      |                             |                     |                |
| PA   | 9.5                  | 20                          | 94,597              | 2.1            |   |                      |                             |                     |                |
| <b>Total</b>   | <b>-</b>             | <b>434</b>                  | <b>1,683,729</b>    | <b>38</b>      | <b>Total</b>  | <b>-</b>             | <b>482</b>                  | <b>2,742,935</b>    | <b>62</b>      |

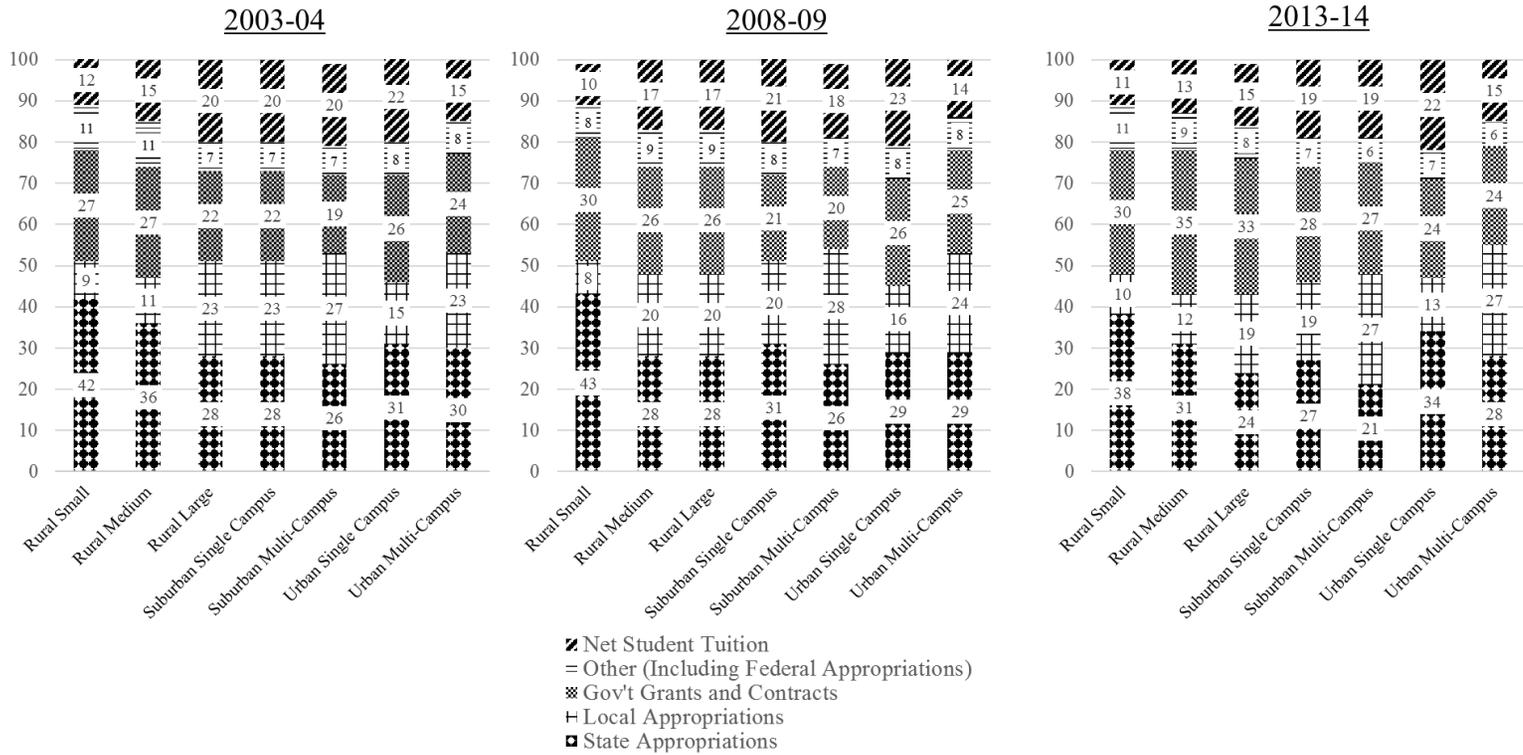
Notes: 1) Total Operating Revenue calculated through sum of all operating revenue categories defined by NCES Digest of Ed. Statistics (nces.ed.gov/pubs2016/2016006.pdf, 2014). 2) Variable definitions as defined by Delta Cost Project Data Dictionary. 3) Percentages derived by total Local Tax Appropriations for each State's community colleges divided by Total operating Revenue for each State's community colleges. 4) Megastates (CA, FL, IL, NY, NC, OH, NJ, TX) are listed in bold. Megastates are the eight states that accounted for approximately 50% of the state appropriations for higher education in FY 2013-14 (Palmer, 2017) (<https://education.illinoisstate.edu/grapevine/tables/>).

**Table 1-5 - Full-Time Equivalent Enrollments (FTE) with Percent Change and Including Ten-year Change for Public Community Colleges by MDCS , 2003-04 to 2013-14**

| MDCS Type                       | 2003-04          |            | 2008-09          |            | 2013-14          |            | 2003-04 to 2008-09 |           | 2008-09 to 2013-14 |          | 2003-04 to 2013-14 |           |
|---------------------------------|------------------|------------|------------------|------------|------------------|------------|--------------------|-----------|--------------------|----------|--------------------|-----------|
|                                 | FTE              | % of Total | FTE              | % of Total | FTE              | % of Total | 5 year Change      | % Change  | 5 year Change      | % Change | 10 year Change     | % Change  |
| Rural - Small                   | 102,026          | 3          | 107,595          | 2          | 97,113           | 2          | 5,569              | 6         | (10,482)           | (10)     | (4,913)            | (5)       |
| Rural - Medium                  | 546,200          | 14         | 585,130          | 14         | 588,322          | 13         | 38,930             | 7         | 3,192              | 1        | 42,122             | 8         |
| Rural - Large                   | 743,576          | 20         | 815,985          | 19         | 852,545          | 19         | 72,409             | 11        | 36,560             | 4        | 108,969            | 15        |
| <b>Rural Total</b>              | <b>1,391,802</b> | <b>37</b>  | <b>1,508,710</b> | <b>35</b>  | <b>1,537,980</b> | <b>35</b>  | <b>116,908</b>     | <b>9</b>  | <b>29,270</b>      | <b>2</b> | <b>146,178</b>     | <b>11</b> |
| Suburban - Single               | 495,385          | 13         | 579,403          | 13         | 586,569          | 13         | 84,018             | 17        | 7,166              | 1        | 91,184             | 18        |
| Suburban - Multi                | 605,060          | 16         | 690,586          | 16         | 726,966          | 16         | 85,526             | 15        | 36,380             | 5        | 121,906            | 20        |
| <b>Suburban Total</b>           | <b>1,100,445</b> | <b>29</b>  | <b>1,269,989</b> | <b>29</b>  | <b>1,313,535</b> | <b>30</b>  | <b>169,544</b>     | <b>16</b> | <b>43,546</b>      | <b>3</b> | <b>213,090</b>     | <b>19</b> |
| Urban - Single                  | 321,169          | 8          | 352,437          | 8          | 375,515          | 8          | 31,268             | 14        | 23,078             | 7        | 54,346             | 17        |
| Urban - Multi                   | 997,438          | 26         | 1,181,561        | 27         | 1,199,634        | 27         | 184,123            | 20        | 18,073             | 2        | 202,196            | 20        |
| <b>Urban Total</b>              | <b>1,318,607</b> | <b>35</b>  | <b>1,533,998</b> | <b>36</b>  | <b>1,575,149</b> | <b>36</b>  | <b>215,391</b>     | <b>19</b> | <b>41,151</b>      | <b>3</b> | <b>256,542</b>     | <b>19</b> |
| <b>Community Colleges Total</b> | <b>3,810,854</b> | <b>100</b> | <b>4,312,697</b> | <b>100</b> | <b>4,426,664</b> | <b>100</b> | <b>501,843</b>     | <b>14</b> | <b>113,967</b>     | <b>3</b> | <b>615,810</b>     | <b>16</b> |

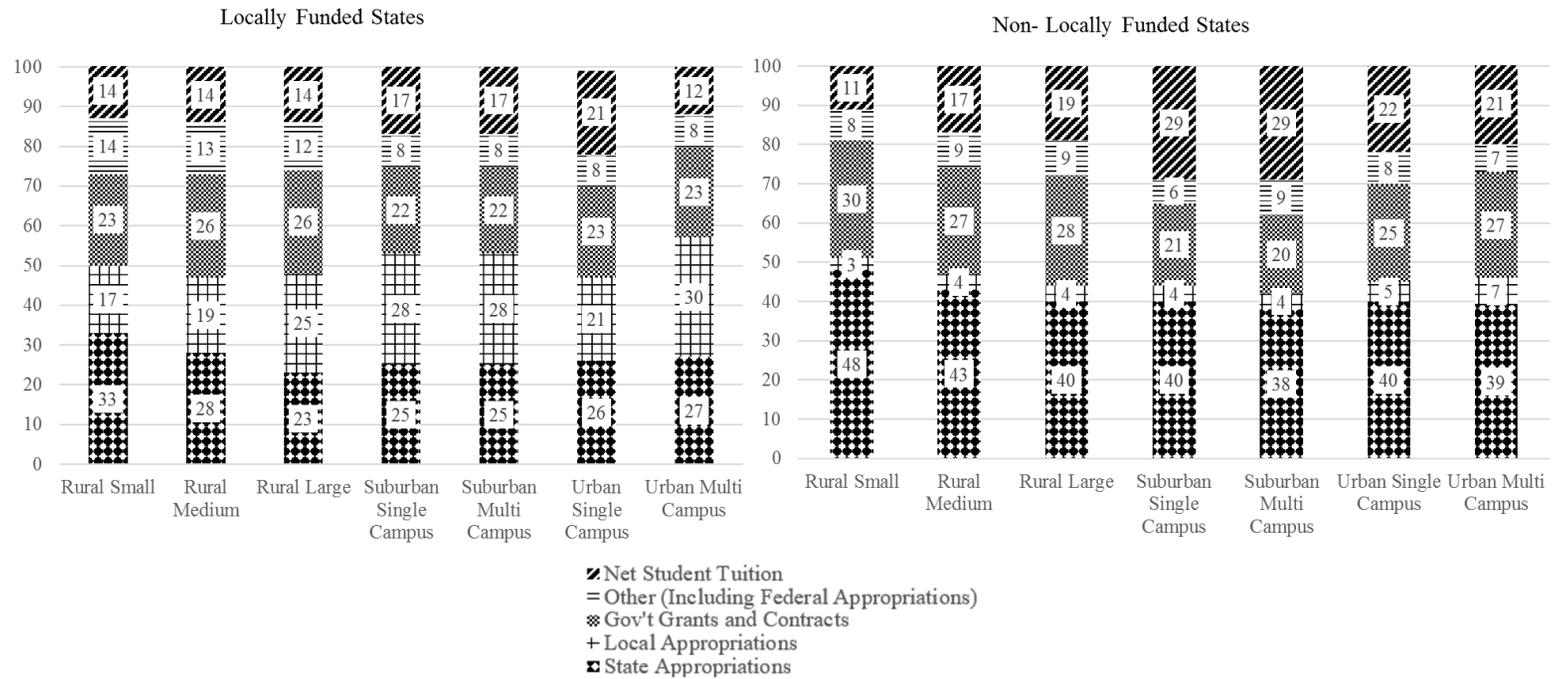
Source: Integrated Postsecondary Education Data System (IPEDS). Variable used is the "Reported Full-Time Equivalent Enrollment" for academic years 2003-04, 2008-09, and 2013-14. Indiana and Florida reported incomplete data to IPEDS. Therefore, Ivy Technical Community College Office of Institutional Research and Florida Department of Education FTE data were obtained and imputed to complete datasets.

Figure 1-1 – Six Major Revenue Streams as Percent of Total Revenue by MDCS Categories Still Masks Differences Across the States



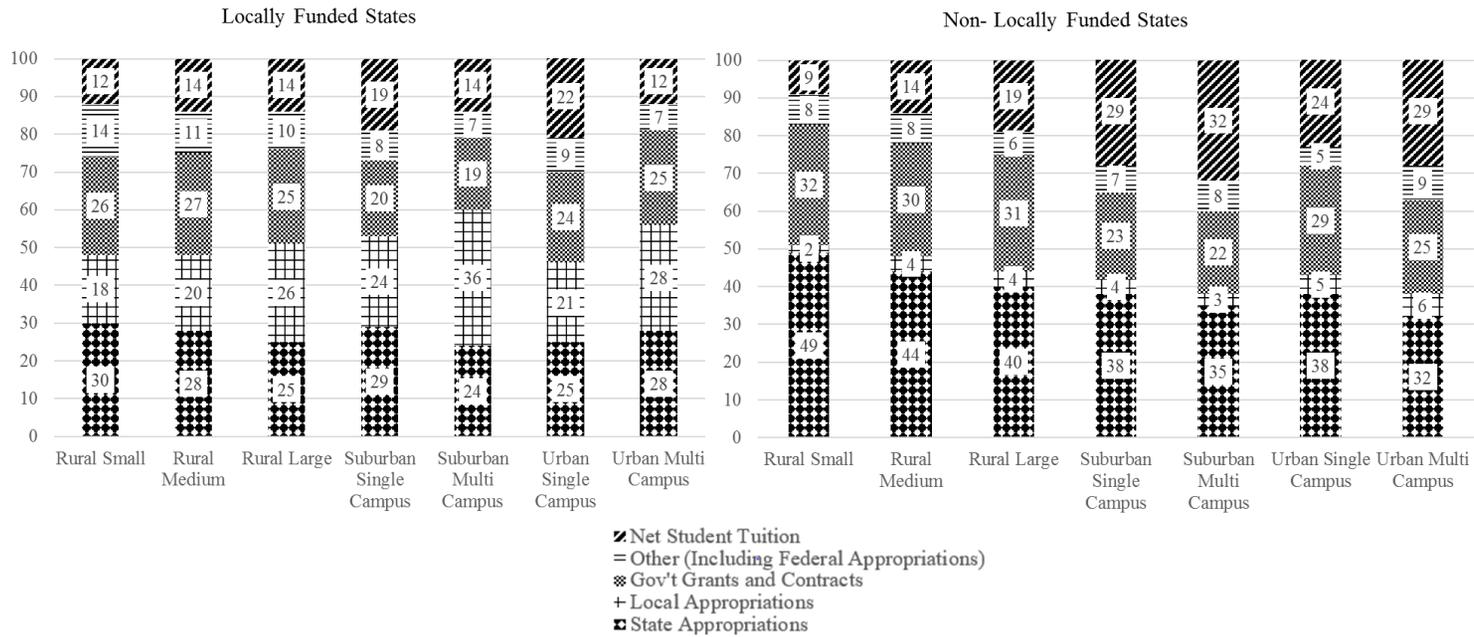
Notes: 1) All six revenue categories as defined by Delta Cost Project Data Dictionary and Mapping File with data derived from NCES IPEDS. 2) Data are totaled based on MDCS classifications. 3) Data are then divided by FTE in each respective category. 4) Data are presented in 5 year snapshots for the respective fiscal years.

**Figure 1-2 - Students and State Appropriations Fund a Much Larger Percentage of Public Community College Revenue in Non Locally Funded States  
FY 2003-04**



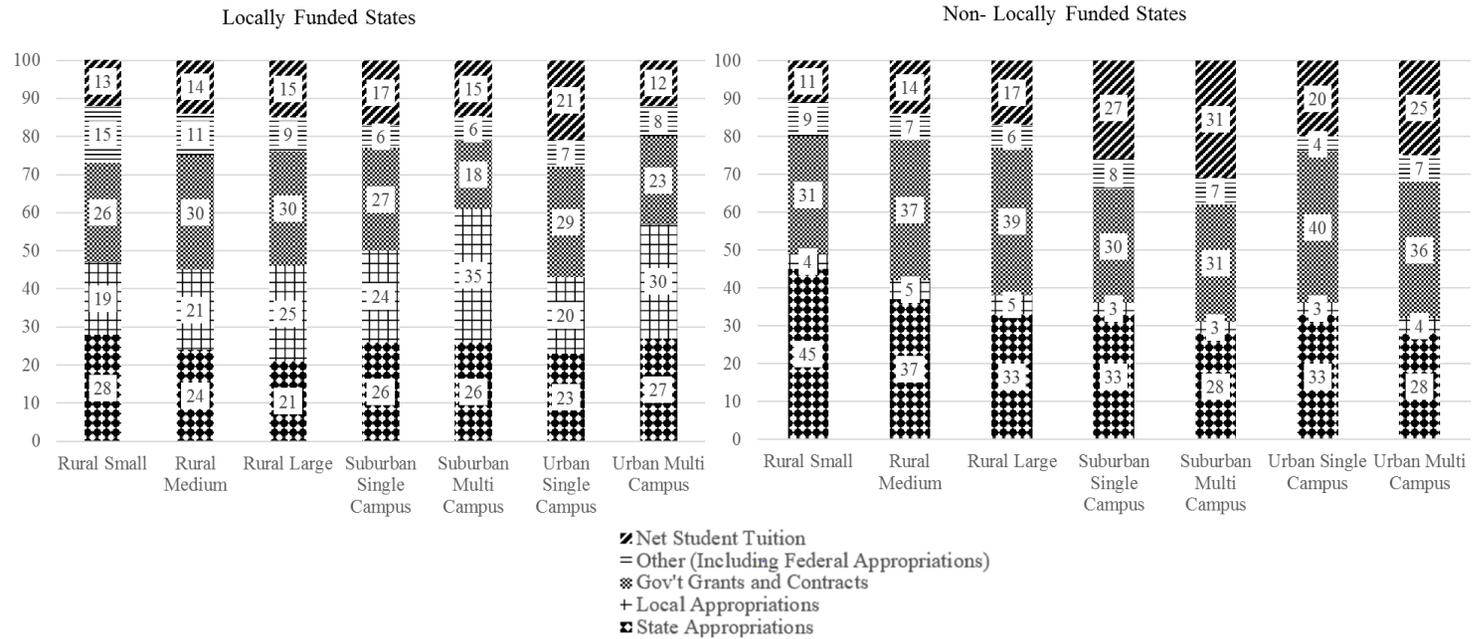
Notes: 1) All six revenue categories as defined by Delta Cost Project Data Dictionary and Mapping File with data derived from NCES IPEDS. 2) Data are totaled based on MDCS classifications and separated by Locally Funded States and Non-Locally Funded States. 3) Data are then divided by FTE in each respective category. 4) Figures for both local and non-local are then presented side by side for comparison purposes.

**Figure 1-3 - Students and State Appropriations Fund a Much Larger Percentage of Public Community College Revenue in Non Locally Funded States FY 2008-09**



Notes: 1) All six revenue categories as defined by Delta Cost Project Data Dictionary and Mapping File with data derived from NCES IPEDS. 2) Data are totaled based on MDSC classifications and separated by Locally Funded States and Non-Locally Funded States. 3) Data are then divided by FTE in each respective category. 4) Figures for both local and non-local are then presented side by side for comparison purposes.

**Figure 1-4 - Students and State Appropriations Fund a Much Larger Percentage of Public Community College Revenue in Non Locally Funded States  
FY 2013-14**



Notes: 1) All six revenue categories as defined by Delta Cost Project Data Dictionary and Mapping File with data derived from NCES IPEDS. 2) Data are totaled based on MDSC classifications and separated by Locally Funded States and Non-Locally Funded States. 3) Data are then divided by FTE in each respective category. 4) Figures for both local and non-local are then presented side by side for comparison purposes.

**Table 1-6 - Locally Funded States Receive Much More Revenue Per FTE than Non-Locally Funded States in FY 2004, 2009, and 2014**

| Non- Local / Local / Difference per FTE   | Delta Cost Project Revenue Variable                                      | 2003-2004  | % of Total | 2008-2009        | % of Total | 2013-2014        | % of Total |    |
|---|--|--|------------|------------------|------------|------------------|------------|----|
| <b>Non-Locally Funded</b>   | State Appropriations   | \$4,664  | 41         | \$3,715          | 40         | \$3,681          | 33         |    |
|   | Local Appropriations   | \$510  | 4          | \$373            | 4          | \$435            | 4          |    |
|   | FTE  |  |            |                  |            |                  |            |    |
|   | 2004: 1,449,850  | Net Student Tuition (not including Pell/Federal, State, or Local Grants) | \$2,352    | 21               | \$1,993    | 21               | \$2,239    | 20 |
|   |  | Government Grants & Contracts (Includes Pell Grants & WF Training)       | \$2,963    | 26               | \$2,606    | 28               | \$3,945    | 36 |
|   | 2009: 1,614,136  | Miscellaneous  | \$910      | 8                | \$692      | 7                | \$725      | 7  |
|   | 2014: 1,683,729  | Federal Appropriations   | \$21       | 0                | \$8        | 0                | \$8        | 0  |
|   | <b>Total Revenue Per FTE in Non-Locally Funded States</b>                | <b>\$11,420</b>  | <b>100</b> | <b>\$9,388</b>   | <b>100</b> | <b>\$11,033</b>  | <b>100</b> |    |
| <b>Locally Funded</b>   | State Appropriations   | \$3,639  | 24         | \$4,239          | 26         | \$3,597          | 22         |    |
|   | Local Appropriations   | \$4,130  | 27         | \$4,394          | 27         | \$4,361          | 27         |    |
|   | FTE  |  |            |                  |            |                  |            |    |
|   | 2004: 2,361,004  | Net Student Tuition (not including Pell/Federal, State, or Local Grants) | \$2,299    | 15               | \$2,473    | 15               | \$2,493    | 15 |
|   |  | Government Grants & Contracts (Includes Pell Grants & WF Training)       | \$3,488    | 23               | \$3,704    | 23               | \$4,593    | 28 |
|   | 2009: 2,698,561  | Miscellaneous  | \$1,512    | 10               | \$1,448    | 9                | \$1,326    | 8  |
|   | 2014: 2,742,935  | Federal Appropriations   | \$35       | 0                | \$39       | 0                | \$13       | 0  |
|   | <b>Total Revenue Per FTE in Locally Funded States</b>                    | <b>\$15,103</b>  | <b>100</b> | <b>\$16,295</b>  | <b>100</b> | <b>\$16,383</b>  | <b>100</b> |    |
| Difference between Non-Locally Funded and Locally Funded States in each DCP Category for 2004, 2009, and 2014 | State Appropriations   | \$1,024  | 17         | (\$524)          | 14         | \$84             | 11         |    |
|   | Local Appropriations   | (\$3,620)  | (23)       | (\$4,020)        | (23)       | (\$3,926)        | (23)       |    |
|   | Net Student Tuition (not including Pell/Federal, State, or Local Grants) | \$53   | 5          | (\$480)          | 6          | (\$253)          | 5          |    |
|   | Government Grants & Contracts (Includes Pell Grants & WF Training)       | (\$525)  | 3          | (\$1,097)        | 5          | (\$648)          | 8          |    |
|   | Miscellaneous  | (\$601)  | (2)        | (\$756)          | (2)        | (\$602)          | (2)        |    |
|   | Federal Appropriations   | (\$14)   | (0)        | (\$31)           | (0)        | (\$4)            | 0          |    |
|   | <b>Total Difference in funding per FTE</b>                               | <b>(\$3,684)</b>   | <b>0</b>   | <b>(\$6,908)</b> | <b>0</b>   | <b>(\$5,350)</b> | <b>0</b>   |    |

Notes: 1) All six revenue categories as defined by Delta Cost Project Data Dictionary and Mapping File with data derived from NCES IPEDS. 2) Data are totaled based on MDCS classifications and separated by Locally Funded States and Non-Locally Funded States. 3) Data are then divided by FTE in each respective category. 4) Figures for both local and non-local are then presented side by side for comparison purposes.

## DISPARITIES IN UNMET STUDENT FINANCIAL NEED AT PUBLIC COMMUNITY COLLEGES

The financing of higher education is ever-changing and in constant need of analysis. Funding flows have been analyzed by researchers in the field, most notably the Delta Project on Postsecondary Education Costs, Productivity, and Accountability (Delta Cost Project, 2016). However, due to the differences in reporting across years, including changing federal accounting standards, measuring trends from decade to decade are difficult. This underscores why the categorization of these funding differences should be done on a consistent basis, in order to determine the efficacies associated with each of the different funding mixes for community colleges. Vast differences in political and fiscal landscapes that effect higher education exist across the 50 United States of America.

Thanks to the newly released Mission-Driven Classification System (MDCS) developed by Stephen Katsinas, Vincent Lacey, Louis Shedd, Nathaniel Bray and Andrew Koricich institutional size and geographic setting can be accurately transposed onto the varying state funding mechanisms to display the stark differences that often exist within and between them. The MDCS presents the evolution of the Carnegie Basic Classification scheme as modified initially by Katsinas, Lacey and Hardy in to account for geospatial differences. In 2017, this scheme was revamped to reflect the 2013-14 higher education universe and in particular, all 980 associates degree granting public community colleges. MDCS essentially categorizes these public community colleges into seven categories arranged by institutional size and setting, based on the same mission of awarding associates degrees.

In 1999, James Leland Johnson calculated a net margin ratio between revenue and FTE expenditures, and found that the relative financial position of rural community colleges declined between 1993 and 1997. Johnson uncovered “significant differences in the revenue patterns at rural community colleges compared to the universe of community colleges” (Johnson, 1999). Seven years later, Billy Roessler’s 2006 study documented major gaps in community college finance literature. Roessler relates these research gaps to what Pascarella and Terenzini (1998) call an “empirical black hole.” Roessler’s study fills these gaps with an analysis of revenue and expenditure streams across all 50 states. His research spans two decades of legislation and funding differences from 1980-81 to 2000-01. Roessler found differences in community college type, location, governance, finance, and even diversification of course offerings. He also studied state disinvestment and the accompanying rise of tuition and fees at community colleges. Roessler found that state student aid was being cut along with state appropriations for higher education. Another key finding of Roessler’s that emphasizes this study’s significance is that, “the mix of revenues received by community colleges differs by geography and type of governance” (p. 189). In other words, state community college enabling law varies greatly (Friedel et al., 2014). It is useful for researchers to consistently analyze these variations as a means of researching policy to develop a baseline against which best practices can be identified.

No study has analyzed the different funding mixtures across all 50 states since Palmer’s *Grapevine Project* did so in 2008. In the 2008 Grapevine study of state aid to community colleges, Palmer analyzed the FY2006-2007 mix of funding streams to community colleges. This was the high point of state appropriations prior to the Great Recession. Palmer’s study was limited to data availability and consistency dating back to 1979. The Grapevine Project was only able to represent thirty states due to the aforementioned fact of reporting changes throughout the

three-decade analysis. Palmer's analysis resulted in categories he termed "state community colleges" and "state-aided community colleges." State community colleges were defined as "those in which local tax monies constituted less than 10% of total community college revenue from all government sources in fiscal year 2006-07" (Palmer, 2008). In contrast, State-aided community colleges are "those in which local tax monies accounted for 10% or more of all government funding" (Palmer, 2008). This researcher has termed these states non-locally-funded (less than 10%) and locally-funded states (more than 10%). Palmer's 2008 study identified an even split of 25 and 25, whereas this 2013-14 analysis of the data depicts a shift to 31 non-locally-funded state community college systems versus 19 locally-funded state systems.

Differences surely exist across institutional size and setting, and these are often magnified by the wide variations in state community college enabling legislation across the 50 states that may or may not allow for local funding of community colleges (Friedel et al., 2014). The enabling laws largely passed in the period between World War II and 1975, impact the coordination, governance, missions, organization, and finance of community colleges-and necessarily impacts their students.

These differences are well-known by experts in the field—former American Association of Community Colleges' President George A. Boggs noted differences exist between community colleges in states with and states without local funding in 2003 (McCormick & Cox, 2003). The need to analyze these differences still exists and, in fact, has been magnified due to the steep decline in state funding over the recent years. Furthermore, James Palmer's analysis of past research and trend data accurately portrays the time period which coincides with the era of privatization. In his analysis, he discusses how, "each state went its own way as policy-makers developed strategies for meeting this new fiscal obligation [of competition for scarce state

resources]” (Palmer, 2013). Palmer provides a useful take on the funding landscape of 2008-09 and calls for further research necessary to inform policy-makers of the changing fiscal landscape.

In 2009, Michael A. Kenamer et al. published a study analyzing the unmet student need in funding community college education. The analysis compared federal, state, institutional direct grant aid, unmet needs, and [enrollment] in 2000-01 and 2005-06 (Kenamer, p. 7). This study also took institutional size and setting along with legislative provisions of local funding across the states into account throughout the analysis of unmet need. Kenamer’s study found that enrollment increased and so too did student direct aid. Also realized in this study was an increase in tuition that averaged 40% (Kenamer, 2009). The overarching conclusion was that “by 2005-06 it was more difficult for low-income students to attend college without incurring debt” (p. 8). Leaning on Billy Roessler’s 2006 study which documented 20 years of community college finance, Kenamer’s 2009 analysis provided a roadmap by which to assess the cost of community college attendance in a way that acknowledges the important role financial factors (the presence or lack of local funding) and geography play. By exploring the difference in cost relative to available federal, state, local, and institutional student financial aid, Kenamer was able show that the amount of aid available to students and families to attend community college was overshadowed by the cost of attendance. Thus, unmet need refers to the cost that students and families are expected to contribute beyond financial aid.

Heavily influencing Kenamer and Roessler’s studies on community college finance is the fact that higher education finance at the state level in particular has become more volatile due to increasing competition for already scarce resources. This competition for resources has been dually noted as a contributor to the national trend of state disinvestment by the National Association of State Budget Officers (NASBO). The same budgetary competitors for scarce state

dollars - Medicaid and corrections - exist today (State Expenditure Report, 2016). All states can attest to the declining state support over recent years, and many higher education policy researchers identify the vulnerability of higher education in state funding cuts as a discretionary budget item (Delaney & Doyle, 2011; Palmer, 2008, 2013, 2014; Katsinas et al., 2005, 2017). From the nineties to now, we have seen a great shift in the cost of higher education, and rising costs have placed a premium on a four-year college education. Comparatively, two-year colleges are not fairing much better from a cost increase standpoint. Between 2003-04 and 2013-14, the average cost of tuition and fees, including books and supplies at community colleges had increased by approximately \$1,186 when adjusting for inflation. This rising cost, coupled with the effects of the 2008 Great Recession, justify a re-examination of community college finance as it relates to student access.

Compounded with rising tuition costs, the notion of available high skill and middle skill jobs combined with notable shortages of workers across the county have likely increased the demand for community college education. According to The University of Alabama Education Policy Center's 2012 report, "Workforce Training in a Recovering Economy," "reflecting on the rising cost and the ever-increasing demand for a postsecondary credential, alternative methods of higher education rely on the community college, such as workforce training" (Katsinas et al., 2012). This fact is noted along with the rising enrollments across the decade combined with increases in non-credit training at these important institutions. With the ability to provide quick training at a relatively affordable cost, community colleges are more important to the national economy now than ever before. From a societal perspective, the increasing amount that students and families are expected to contribute may represent a barrier or a hardship for students from low-income familial situations. Enter student financial aid.

Upon witnessing the effectiveness of the Serviceman's Readjustment Act of 1944 (GI Bill), the President's Commission on Higher Education (1947) noted the success and recommended "grant-based aid to students through federal legislation" (Mullin, 2013). Though this recommendation came with a valiant cause, implementation of a federal student aid program would be years in the making. As a foundation for the federal student aid program and building upon various historical trends that placed the burden of social mobility on the Federal government, the Pell Grant program spawned out of the Higher Education Act of 1965 (P.L 110-315). Beginning in 1973 as the Basic Educational Opportunity Grant (BEOG), then President Richard Nixon placed importance on the federal aid program by stating, "equal educational opportunity, which has long been a goal, must now become a reality for every young person in the United States, whatever his economic circumstances" (Nixon, 1970). Through gritty politics and years of lobbying, the BEOG was later renamed the Pell Grant to honor the role Senator Claiborne Pell played in creating and building the program.

As the years passed, the Pell Grant program has grown. Noting the growth of the program should add scope and scale to its importance. The sheer size of this program and the rate at which it expanded should add context to its history as well as the national debate surrounding it. The Pell Grant program when fully implemented in 1976-1977 served roughly 1.9 million students. These numbers rapidly increased to over 4 million students by 1992-1993 (Mullin, 2013).

The program has seen its greatest growth in recent years. From 2007-2008 to 2011-2012, the program has seen a 74% increase in participants and an \$18.7 million increase in funding (Mullin, 2013). According to the U.S. Department of Education (DOE), the rapid expansion of the program can be attributed to four factors: "Increases in the number of eligible students,

legislative changes in the needs analysis formula, implementation of the one-time year-round Pell funding, and an increase in the maximum award” (U.S. Department of Education, 2012).

[Insert Figure 2 - 1]

In 2013-14, community college students received a total of \$10.7 billion in Pell Grants to be used for access to postsecondary education and training. This represents 76% of the total grant aid used by community college students in 2013-14, as Figure 2 - 1 shows. This is a disproportionate amount of aid relative to other federal, state, and local student aid programs for community college students across the nation and has obvious implications on community college administration as noted by the Century Foundation (2013). Pell grants represent a means to access for low income students that are typically underrepresented in the workforce. Whether used to gain upgrades in technical skills, achieve a comprehensive education, and/or transfer to a four-year institution, Pell Grants effectively represent student financial aid in the United States when compared to state and local student aid programs which, when combined, barely exceed 12% of total aid to students in 2013-14. Whether a state has local funding provisions in place or not, the share of Pell Grants to other types of aid remains the same.

Considering the known differences in community college finance across the 50 United States, the principles in which community colleges were founded, and the importance of these institutions to the nation’s economy, analyzing access to community college education is of critical importance. Recent state disinvestment has led to increases in the cost of attendance. Noting the access mission that community colleges have to provide education for all who seek it (including students from low-income backgrounds that are looking for upward mobility), the natural inquiry that follows considers the amount of financial aid available to each student relative to the cost of attendance. Remembering Kennamer and Roessler’s analyses on the

subject, this study will analyze the “unmet needs” that exist when comparing the entirety of financial aid made directly to the students to the average cost of attendance.

This study seeks to address a lack of consistent analysis of the differing revenue streams for public community colleges from state to state, taking into account the institutional size and setting. Accounting for institutional size and geographical setting are important because most community colleges have their services areas assigned by state-level statute or regulation to a given region, county or set of counties. This pilot analysis utilizes MDCS to take a closer look at federal, state, and local student aid funding mechanisms as they relate to community college cost over the ten-year period from, 2003-04 to 2013-14. In conducting such an analysis, this study will answer the following research questions:

- 1) Did the gap of unmet need change between 2003-04 and 2013-14?
- 2) Did the presence or absence of local funding provisions matter to unmet student financial need?
- 3) Did Pell Grant funding increases and eligibility changes ameliorate differences across the different states and community college type by size and setting?

### **Methodological Approach**

The data presented in this analysis are derived from the National Center for Education Statistics’ (NCES) Integrated Postsecondary Education Data System (IPEDS) for the following years: 2003-04, 2008-09, and 2013-14. Fiscal Year 2003-2004 represents a good starting point as it builds on Roessler’s analysis and allows data to capture the state of the economy prior to the 2008 recession and the resolve that follows through 2014. FY 2013-14 data are the most recent data available in the National Center for Education Statistics’ (NCES) Integrated Postsecondary

Education Data System (IPEDS) at the time that this study was conducted. All data concerning finance were inflation adjusted to represent an even comparison with the final data year. In total, nine IPEDS variables were used in this study. The *Published Tuition and Fees* variable in IPEDS for all three fiscal years was combined with The College Board's "Annual Survey of Colleges" data presenting the average cost for Books and Supplies at public two- year institutions for each respective year in order to represent the cost of attendance for educational purposes. This does not account for frequent variables of cost to the student such as child care and transportation (College Board, 2004, 2009, 2014). IPEDS finance variables from the *Scholarships and Fellowships* tab were the source of the student financial aid variables. The variables used represent financial aid directly to students just as Kennamer et al. computed and include the following: Pell Grants, Other Federal Grants, Grants by State Government, Grants by Local Government, Institutional Grants from Restricted Sources and Institutional Grants from Unrestricted Sources. Throughout the following analysis, the data may be combined to present total student financial aid. These variables were used along with Full-Time Equivalent (FTE) enrollment of each community college type.

The seven community college types are defined by Katsinas, Lacey, Shedd, Bray, and Koricich in the creation of the Mission-Driven Classification System (MDCS) and allow for an "apples to apples" comparison of institutions by enrollment size and geographical setting to assess critical differences found across and within states. MDCS accounts for the similar size and setting of institutions, but its inherent purpose defines the institutional categories based on each institution's true mission as it relates to the entirety of U.S. higher education. Community Colleges as defined according to the MDCS, "are institutions with a service area mandated by some type of governing body. Their programs are considered two-years or shorter, for which

they award certificates or associate degrees. While Community Colleges can award four-year degrees, the majority of their programming consists of curricula that are two-years or shorter” (Shedd, 2017). Utilizing this classification system to aggregate community college revenue data provides for a more accurate comparison of colleges with a related size, setting, and mission. By utilizing the MDCS, this study will produce an analysis of the seven types of community colleges that are funded differently state-by-state and across geographical differences. The seven MDCS types of community colleges are: Rural Small, Rural Medium, Rural Large, Suburban Single Campus, Suburban Multi-Campus, Urban Single Campus, and Urban Multi-Campus.

## **Results**

The analysis of the above mentioned IPEDS variables yield stark differences across the seven MDCS categories and the two five-year snapshots. Increases in terms of enrollment and financial aid available to students on a per FTE average were seen each of the five years. However, tuition increased during each of these time frames as well. As Kennamer et al. noted in their 2009 analysis, the target certainly is moving. A major finding in 2009 was that the total amount of aid in every category grew, but so did unmet need (p. 13). Similarly, from 2003-04 to 2013-14 financial aid dollars grew in every category except “other federal aid to students” which accounted for American Recovery and Reinvestment Act (ARRA) funding like Supplemental Educational Opportunity Grants (SEOG) and Leveraging Educational Assistance Partnership Program (LEAP). These funds were awarded in 2009 as an effort to offset budget shortfalls that were due to the recession of 2008. The influx of funding from these federal programs were aimed at public education and in particular, state governments as an incentive to maintain level operating budgets for education in order to receive these supplemental grants.

The impact of ARRA from 2009 to 2011 was important to higher education as it leveraged federal dollars to maintain state support for higher education, briefly and temporarily stanching the decline for the last three decades or more (Chad Clark, forthcoming). It is worth noting that this funding impacted the state higher education budgets much more than it helped students access college with financial aid. That job of providing access to individuals from low income backgrounds was left to Pell Grants. As Figure 2 – 1 shows, Pell grants account for 76% of all financial aid received by U.S. community college students in 2013-14.

[Insert Table 2 -1]

In terms of need, Table 2 - 1 represents the 2003-04 total financial aid available to students relative to the cost of attendance at each of the seven MDCS categories compared to the 2013-14 total financial aid available to students relative to the cost of attendance at the respective institutions. Considering the Great Recession's impact on higher education finance between 2007 and 2009, it is somewhat surprising to find that the change in the cost of attendance and the average amount of financial aid to students over the decade this study examines has been steady. Steady increases in the cost of attendance are typically due to the decline in state appropriations for community colleges which translates into increased tuition and fees.

An interesting takeaway from Table 2 – 1 is the change in the average cost of attendance compared to the change in the average total financial aid. The average cost of attendance grew by \$1,186 or 27% from 2003-04 to 2013-14, while financial aid to students grew by an average of \$1,338. While the increase in financial aid per student is higher than the increases in the cost of attendance, the national averages again mask stark differences across institutional size and setting. Six of the seven community college types saw financial aid grow by more than the cost of attendance, but Rural Small community college students experienced a *decrease* in available

aid, and therefore an increase in the amount of unmet need (\$348) that they are personally responsible for. The choice for these students is to attend part-time and delay degree completion, leave altogether, or go to the student loan window as Katsinas and Hardy (2012) noted in the Handbook of Higher Education chapter on rural community colleges. As discussed earlier, this interesting finding presents additional challenges to these students as they already experience increased barriers to access via transportation. Furthermore, these Rural Small community colleges themselves are financially strained given the smaller operating budgets and considerably lower enrollment, which hovers around 2% of the total community college enrollment nationwide. Further compounding this issue is the decline in enrollment experienced at these institutions – approximately a 5% decline in FTE enrollment over the ten-year period examined in this study compared to increases in the other six MDCS categories.

The Urban Single Campus institutions experienced a major recovery in terms of helping community college students finance unmet need, though approximately \$1,070 dollars of unmet need still exists for students at these institutions. Essentially, the cost of attendance increased at a steady rate, but was outpaced by changes in the average financial aid that these students could use. Contrast this finding with the Suburban Single Campus community colleges, whose students experienced an increase in financial aid of only \$40 to help close the gap in unmet need. On average, these institutions' students are still responsible for \$1,637 of the cost of attendance compared to \$785 of unmet need that students at Urban Multi-Campus institutions are responsible for. The fact that these differences exist makes policy analysis and policy development an important task if the goal of achieving equitable funding for student access in this sector of higher education is to be attained.

Achieving equitable funding is certainly a tall task, and one federal policy makers should be considering given the large amount investment coming from the Federal Government in the form of Pell Grants, which are 76% of the total. The question begs: how is state legislation and any accompanying state funding supposed to move the needle if Pell Grants make up such a large percentage of the total financial aid dollars? A key to answering this important question can be found in looking at state provisions for community college operating budgets that include local funding. As previously discussed, local funding provisions in 19 states help support community colleges with additional tax revenues above 10% of the total revenue received. Previous analysis of states with and states without local funding support of any real capacity to incite change (Koh, 2017) revealed that the net student tuition revenue was markedly higher in states without local funding. The community college operating budgets in 31 states with no or very small local funding provisions built into enabling legislation receive an average of \$5,350 less than the 19 states that have local funding provisions. Without local funds, tuition as a source of revenue is much more important to these community colleges. Net student tuition comprises as much as 31% at the Suburban Multi-Campus institutions in non-locally funded states compared to 15% at the same Suburban Multi-Campus institutions in locally-funded states.

[Insert Figure 2 - 2]

Figure 2 - 2 presents an important finding from this analysis: in 2003-04, across all seven MDCS types of community colleges, students who attend community colleges that receive less than 10% of their total funds from local appropriations have higher unmet need. Figure 2 – 2 shows that local boards of trustees and local leaders used their taxing power to subsidize lower tuition and reduce unmet need thus allowing for the federal student aid to cover more students. In 2003-04, prior to changes in eligibility made in 2012, the average Pell Grant could cover up to

50% of the total cost of attendance at Rural Small institutions. That percentage was 27 at the Suburban Multi-Campus institutions, and once again illustrates differences in college types. The average percent of the cost of attendance that was covered by Pell Grants was 41% across all MDCS types. In 2013-14, that percentage of cost covered by the Pell Grant program averaged 55% and reached as high as 62% at the Urban Single Campus institutions. These changes in the Pell Grant program are key to providing access to needy students, and the average \$2,500 award per student represents a major revenue stream to the institutions that enroll them. In 2003-04 the average unmet need that community college students and families were expected to contribute ranged from \$1,709 at Suburban Multi-Campus institutions to \$888 at the Urban Multi-Campus institutions. An average of \$1,317 in unmet need was seen across all types of community colleges. This means that in order to attend, the average community college student could obtain a Pell Grant, State Student Aid, Local Student Aid, and some additional institutional or federal student aid, and it would not be enough to cover the cost of tuition, fees, books, and supplies. Factoring in childcare and transportation costs increases the amount of unmet need to students. Noting this stark difference in two MDCS types relative to the average across all types of community colleges, depicts why national averages do not account for major differences that exist between different institutional types.

As illustrated in Figure 2 - 3, the community college students in non-locally-funded states no matter the MDCS type, had more unmet financial need than if they were enrolled at a community college in a locally-funded state. This stark contrast between community colleges in locally-funded states versus non-locally funded states, regardless of institution size and geographical setting, can mean as much as \$1,254 more in the average cost of attendance if a student is attending a Suburban Multi-Campus community college in a non-locally funded state.

It is worth noting that while these differences certainly exist, the disparities are likely magnified by the State of California. This stark difference in funding seen at the Suburban Multi-Campus community colleges, prompted a closer analysis of the institutions included in this particular category. The average published tuition and fees for students at California community colleges is much lower than the rest of the country, regardless of the legislative funding provision differences (i.e. local or non-local). California is a locally-funded state, and they enrolled approximately 715,000 students on an FTE basis in 2003-04 and approximately 781,000 students on an FTE basis in 2013-14. This represents 19% and 18% respectively, of the nation's total FTE for each of those years. A good example of how California impacts these averages can be found in the tuition and fees data: the average tuition and fees in 2003-04 at California's Suburban Multi-Campus institutions, of which there are 34, was approximately \$484. The rest of the locally-funded Suburban Multi-Campus community colleges in the nation, of which there are 31, average \$2,004 in average published tuition and fees per student. This underscores the need to better identify differences for comparative analysis that informs policy, and the case of California, albeit unique in its own, demonstrates this point.

Due to space limitations a chart depicting year to year change across all seven MDSCS categories and across the local- and non-locally funded states is not feasible, but analyzing change in these same metrics from 2003-04 to 2008-09, we see that unmet need increased by approximately 15% per student across all seven MDSCS categories. This percentage increase in unmet need draws attention to an average 16% increase in tuition across the seven categories. At a time when Pell Grant increases were relatively modest in comparison to the more recent increases in Pell funding, the cost of attendance basically outpaced the total amount of available student aid from Federal, State and Local sources. In terms of change within the first five-year

snapshot of this study (2003-04 to 2008-09), the average unmet need per student increased greatly at Rural Small institutions and also at the Suburban Single Campus institutions. Students at Suburban Multi-Campus institutions however, seemed to have fared better in terms of unmet need to make up the cost for attendance. They saw an increase of 39% in Pell Grant aid combined with a 16% increase in tuition and therefore had a slight 1% increase in unmet need. In other words, the students at Suburban Multi-Campus institutions, on average, only had to come up with \$25 to make up the difference in cost of attendance from 2003-04 to 2008-09 compared to students at Rural Small and Suburban Single Campus institutions who had an average of \$411 and \$429 of additional unmet need to make up respectively.

[Insert Figure 2 - 3]

Figure 2 - 3 provides a snapshot of the average financial aid for community college students across all MDCS types and between local- and non-locally funded states in 2008-09. An interesting takeaway from this snapshot of change between 2003-04 and 2008-09 was that the average Pell Grant per student declined by 1%, or roughly \$20, at the Rural Small institutions as a whole. This affected the non-locally funded states unmet need more than the locally-funded states. It is fair to say that these institutions enroll a higher percentage of needy students that will on average have a longer distance to travel for their education compared to the other six MDCS categories; yet the students at these institutions are receiving less Pell Grant dollars than their urban or suburban counterparts on a per FTE basis. Pell Grant deficits, combined with a \$622 increase in tuition for students attending Rural Small community colleges translates into a 40% increase in unmet need between the first five years included in this analysis. Similarly, Urban Single Campus institutions saw their students receive only 8% more in Pell Grants in 2008-09 than in 2003-04, but seeing as how their tuition increased by the second lowest amount (\$438

versus \$622), it did not have the same impact on their unmet need change as it did for the Rural Small institutions. This suggests that Rural Small institutions, who are already in a "uniquely less secure" position financially due to enrollment size and geographic setting, are struggling to keep costs affordable relative to the type of student that they serve (Katsinas et al., 2003). The Rural Small and Rural Large community colleges in locally-funded states did not see any change in unmet need compared to the 2003-04 snapshot. Overall, unmet need gradually decreased between the first five years included in this analysis.

*Between 2008-09 and 2013-14 the unmet need between the cost of attendance and the amount of financial aid available to community college students decreased at every type of MDCS community college.* This is not to say that the unmet need did not exist, but the outlook for financially needy students improved. In 2003-04, the average unmet need for community college students was \$1,317, in 2008-09, it was \$1,520, and in 2013-14, the average unmet need per student was \$1,165. This is due to the unprecedented increases in Pell Grants which began in 2007-08 in the final year of the George W. Bush Administration, and accelerated greatly in the first term of the Barrack Obama Presidency. For perspective, between 2003-04 and 2008-09 an additional \$1.49 billion in Pell Grants were awarded to community college students to promote access compared to the \$4.4 billion increases that were had between 2008-09 and 2013-14. These major increases occurred while an average increase of 3% in FTE enrollment was reported across all seven MDCS community college types in this time period. It is clear that the increase in the number of students attending community colleges alone does not reflect the stark increases in Pell Grants to community colleges. Christopher Mullin (2013) analyzes the exponential growth that the Pell Grant program experienced in the second half of this study's timeframe and attributes the growth to increases in eligible students, changes to the needs analysis formula, the

introduction of year-round funding, and increases in the maximum amount that a student can receive (p. 9). Simply put, more students were eligible to receive these federal dollars, the maximum amount they could receive increased, and the calculation for awarding these dollars changed so that more students could receive more dollars for access.

[Insert Figure 2 - 4]

Another takeaway from this five-year snapshot was the "leveling out" of unmet need at the Rural Small institutions. Generally speaking, an average of 18% increase in tuition across all MDCS community college types was had between 2008-09 and 2013-14. That translates to an average increase of \$663 and an average of \$1,520 of unmet need was had across all of the nation's community colleges. Tuition increases at the Rural Small Community Colleges were comparatively modest, at 16%. This amount of unmet need existed while students at community colleges saw an average of 64% increases in Pell Grant aid. This illustrates, that for the average community college student, financial aid from all sources was not enough to cover the increases in tuition, fees, books, and supplies. Considering transportation, childcare, and other recognized costs that are common in this sector of higher education, community college students still have unmet needs that are not captured in this study.

In terms of local and non-local states, increases in Pell Grants have begun to ameliorate differences between them. This suggests a consistent and comparable student population across all community college types regardless of the state in which they are located. Pell Grants have helped bring more equitable access to community colleges across the nation. This is not surprising given the rapid increases in Pell Grants during the 2008-09 and 2013-14 frame of reference. While there was a greater increase in enrollment between 2003-04 and 2008-09 compared to the second five-year snapshot analyzed in this study, overall enrollment still

increased by 3% across all community college types. Over the ten years of study Rural Small institutions saw an enrollment decline every year after 2008-09, however. Additionally, the students at Urban Multi-Campus institutions located in locally-funded states have enjoyed the lowest cost of attendance compared to non-locally-funded states. However, as mentioned earlier, California skews this data. Particularly at Suburban Multi-Campus and Urban Multi-Campus MDCS categories where California has over 70 institutions combined, their average cost of attendance pulls down the average for these sector. If one removes California from the data set accounting for the cost of attendance, the average cost to the student is \$2,814 while including California brings the average cost down to \$2,147. This underscores the need for policy frames that make sense, with consistent analysis over time.

Over the course of the ten years that this study analyzed the cost of attendance per student relative to the average financial aid per student, a 46% increase in the average Pell Grant award helped offset the average 27% increase in cost of attendance. In other words, the cost of attending a community colleges increased at an average per student rate of \$1,186 while Pell Grants increased at an average of \$1,143. While the surface level perspective of this finding may reflect an adequate increase in the amount of financial aid provided to community college students relative to the cost of attendance, one must also consider the fact that national averages tend to mask differences across institutional size and setting. The average unmet need at all seven MDCS community college types was \$1,165 in 2013-14, but it neared \$1,700 at Suburban Single Campus institutions. This contrasts with the \$785 in unmet need at Urban Multi-Campus institutions. Additionally, over the ten years analyzed in this study, the average student at a Rural Small community college actually saw an increase in unmet need, as 2013-14 inflation adjusted averages show \$1,017 in unmet need in 2003-04 and \$1,365 in 2013.

The MDCS institution category whose students fared best through this time period in terms of unmet need gains were the Urban Single Campus institutions. In 2003-04, students at these community colleges had an average of \$1,709 in unmet need that they had to come up with to attend; in 2013-14, this was \$1,070. While this is good news, it is important to note there are only 19 of these colleges, a relatively small number.

While these overall decreases in unmet need across all seven MDCS types suggest access improvements in student financial aid policy over this decade, the amount is still not enough to cover the actual cost of attendance. Nevertheless, harkening back to the research questions that guided this study, the gap of unmet need has changed between 2003-04 and 2013-14. An influx of Federal dollars from Pell Grants and state incentive grants to maintain level funding for higher education seems to have improved the overall picture of unmet need. In particular the gap closed greatly from 2008-09 to 2013-14, however, the difference in cost did not improve for Rural Small community college students in non-locally-funded states. Therefore, the presence or absence of local funding provisions does matter. The locally funded states fared better prior to the Pell Grant increases, and when Pell increased the Urban Multi-Campus institutions in local-funded states almost had a zero net unmet need. In reviewing the three figures depicting snapshots of community college funding prior to, during, and after the Great Recession of 2008 one notes that Pell Grant increases and eligibility changes most certainly ameliorated differences between institutional size, setting, and even state funding laws. That said, tuition increases of over 27% across all MDCS community college types during this same time period suggest that community college revenue is declining. Could state disinvestment to higher education, and community colleges in particular, be hindering federal efforts aimed at improving the situation related to unmet need for financially disadvantaged students to attend?

## **Discussion**

For policymakers and researchers alike, it is important to understand how financial aid impacts the cost of attendance to students in order to tailor policies for efficient use of public resources. A notion that is central to financing for community colleges remains constant no matter the study: States are disinvesting in higher education and the cost is being deferred to students and families. Financial aid has been a key factor in maintaining access to higher education and in particular community colleges. Given the open access mission community colleges operate under, increasing workforce training demands tied to high cost technical programs, and the unique relationships that community colleges have with their localities, policy analysis that accounts for the varying funding streams at the various community college types is important. Differences in funding higher education across the states have long been recognized, but aid directly to students attending these vital institutions also differs greatly across the states and institution size and geographic setting. Therefore, combined with varying cost of attendance averages, unmet need varies greatly.

This study analyzes trends over a ten year period, from 2003-04 to 2013-14 in an attempt to uncover the differences in financial aid to students and its effect on the overall cost of attendance. Differences certainly exist at every measure except one. Unmet need - the difference in total financial aid available directly to the student and the cost of attendance - exists at every community college type and in every state. With open access missions and the ability to serve students from all backgrounds, this finding is particularly important to community college finance.

The unmet need presented as the central theme to this study, accounts for the average published tuition and fees and the average cost of books and supplies. This does not factor in

room and board, transportation, and other living expenses. Additionally, Thomas Mortenson has identified a term called “opportunity costs” in which researchers may consider “the wages lost during the time the student could be working rather than attending class or studying.” (Mortenson, 1988). The data used and presented in this analysis are essentially conservative estimates, and yet still reflect unmet financial need in excess of \$1,000 on a national average. At a time when community college access is paramount and discussions of free tuition to these institutions are being had, understanding the nuances of student expenditures to access these educational opportunities is of vital importance. These additional costs associated with attending college should be taken into account by policymakers and researchers alike.

The notion of equitable funding in reference to institutions raises an interesting debate. It has been noted that differences in community college revenue exist at the state level and at the local level. Differences in revenue also exist across institutional size and geographic setting. Differences also exist in terms of cost to the student, and therefore in unmet needs from high cost and not enough financial aid. Equitable funding is important to consider as these institutions are of public origins and therefore should be funded by equal distribution relative to state and local demographics. Perhaps the most divergent institution type of all community colleges are the Rural Small institutions. These institutions are categorized through MDCS based on an enrollment of less than 2,500 students on a 12-month unduplicated headcount calculation as well as a geographic sub categorization that accounts for the US Census Bureau’s core-based statistical areas. If the institution was located outside of a metropolitan statistical area, or in an area with a population of less than 500,000, it was subcategorized as “Rural” (Shedd, 2017). Thus Rural Small community colleges face very different challenges than their Urban and Suburban and even Rural (Medium and Large) MDCS counterparts. These institutions are not

only unique in the amount of students they serve and the geographic location they are positioned within, but they essentially mean more to their constituents and have a greater impact on the communities that they serve (Katsinas & Hardy, 2012). They are basically the only option for social mobility, higher education, and workforce training for their rural communities.

The core mission of these institutions is to provide access. Katsinas, Alexander, and Opp (2003) provide perspective on these institutions through the Rural Community College Initiative and their article titled, “Preserving Access with Excellence: Financing for Rural Community Colleges.” Some of the concerns that these authors discussed in 2003, are still evident today and in some cases have exacerbated. The authors state that:

1. Rural community colleges are especially dependent on state funding,
2. Rural community college students are particularly effected by the cost of attendance and available financial aid,
3. Traditional funding formulas fail to support expanded community college missions,
4. And state funding formulas ignore the unique needs of rural colleges, particularly in the technical education areas that are essential to rural development.

As state funding declines annually, the rural institutions are facing access issues that will translate to revenue that keeps important programs and services running. The lack of state student aid programs across the nation hinder access, and federal financial aid to low-income students through Pell Grants are not enough to cover the unmet needs found in the cost of attendance relative to available financial aid. Furthermore, state disinvestment coupled with expanding missions of the entirety of the community college sector presents what can be termed a “double whammy” on community college budgets (Katsinas et al., 2016). Particularly, Rural Small community colleges are more sensitive to this given the inherent low enrollments and lack

of diversified programs stemming from the size of their budgets. Finally, the rural nature of these institutions, are not accounted for in states that utilize funding formulas for state appropriations, as small as they might be (Katsinas & Hardy, 2012).

The authors' findings and recommendations in 2003 ring true today. Recommendations such as changing financial aid policies to reflect the real costs of attending college, employing programs and fiscal investments that are not tied to economic fluctuations, and recognizing the higher operating expenses of rural colleges in state appropriation formulas (Katsinas et al., 2003) would all improve the fiscal outlook for these institutions. If specific policy was implemented to address the rural challenges, it would serve to decrease operating costs and dependence on revenues such as student tuition, therefore decreasing that cost to students and their families.

The federal role in ameliorating some of the differences illustrated in this particular study seems to be progressing well. A key takeaway from this study depicts the leveling out of unmet need through the three series of figures showing the closing of the unmet needs gap. The influx of Pell Grant dollars through eligibility and funding provisions (Mullin, 2013) have certainly improved the outlook for millions of low-income students. While this may not directly impact the institutions themselves, the indirect impact is unquestionably there. As a recommended policy approach to further ameliorating these financial disparities that exist, the federal position on student financial aid should be used to leverage policy and practice. King Alexander (2010) noted an argument of counter productivity put forth by critics to federal student aid, where institutions were actually incentivized to increase tuition by federal financial aid to students. As a central finding in Alexander's study, he notes that this concept is valid, but at proprietary two and four- year institutions as opposed to public community colleges. Since federal Pell is direct grant aid to low-income students, it acts as a voucher to be used at any institution of the student's

choice, more aid is provided to students' who choose institutions that cost more to attend. Since uncovering this important trend, additional restrictions have been implemented and further investigation is ongoing.

An important takeaway from Alexander's analysis is that the federal government has an important policy role and is able to legislate its role through bipartisan policies and programs like Title IV aid, or Pell Grants. Similar to Maintenance of Effort (MOE) provisions that require states to maintain spending above a set level to receive specified federal funding, the federal government has a unique opportunity to leverage Title IV funding through state higher education systems and coordinating bodies. Further research will be necessary to uncover funding across the varying local districts in state that have local funding provisions, and further research would need to be conducted on the effects of Pell Grants to low-income students as to do no harm. The important thing to remember is the possibility that federal aid can be used to ameliorate differences in funding, provide access to students, maintain or increase state support for institutions and students alike, and improve outcomes. While much is being discussed in this arena currently, a few things are certain: differences exist across and within the 50 United States, some college types are doing worse than others, and local funding matters. Further research is necessary to inform an effective policy on the matter, but Pell Grants are an ever-growing revenue source that could be used as a lever to dictate that policy.

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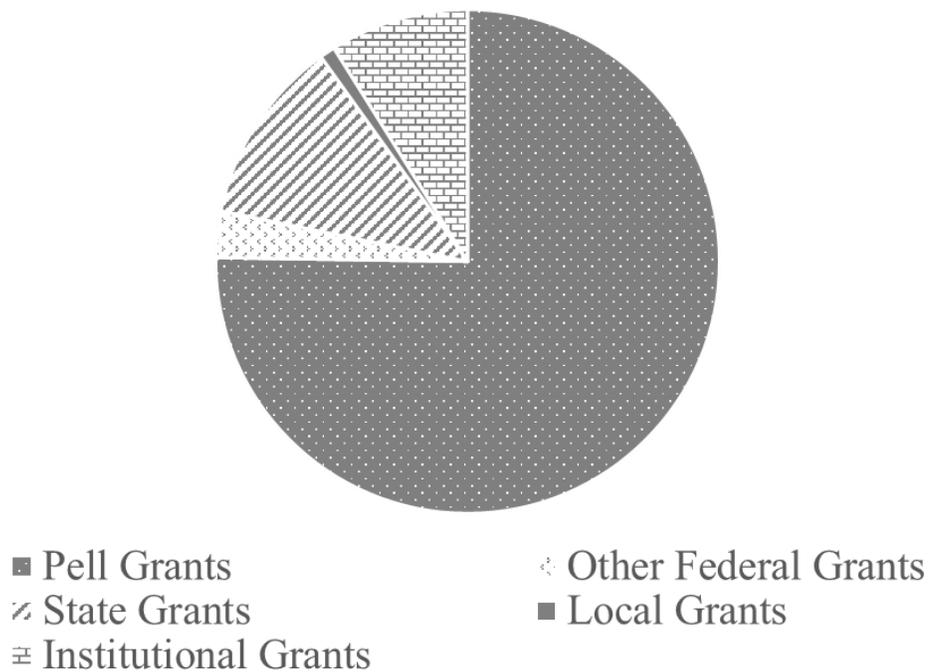
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Figure 2-1 Pell Grants Represent 76% of the Total Grant Aid Directly to Students in 2013-14



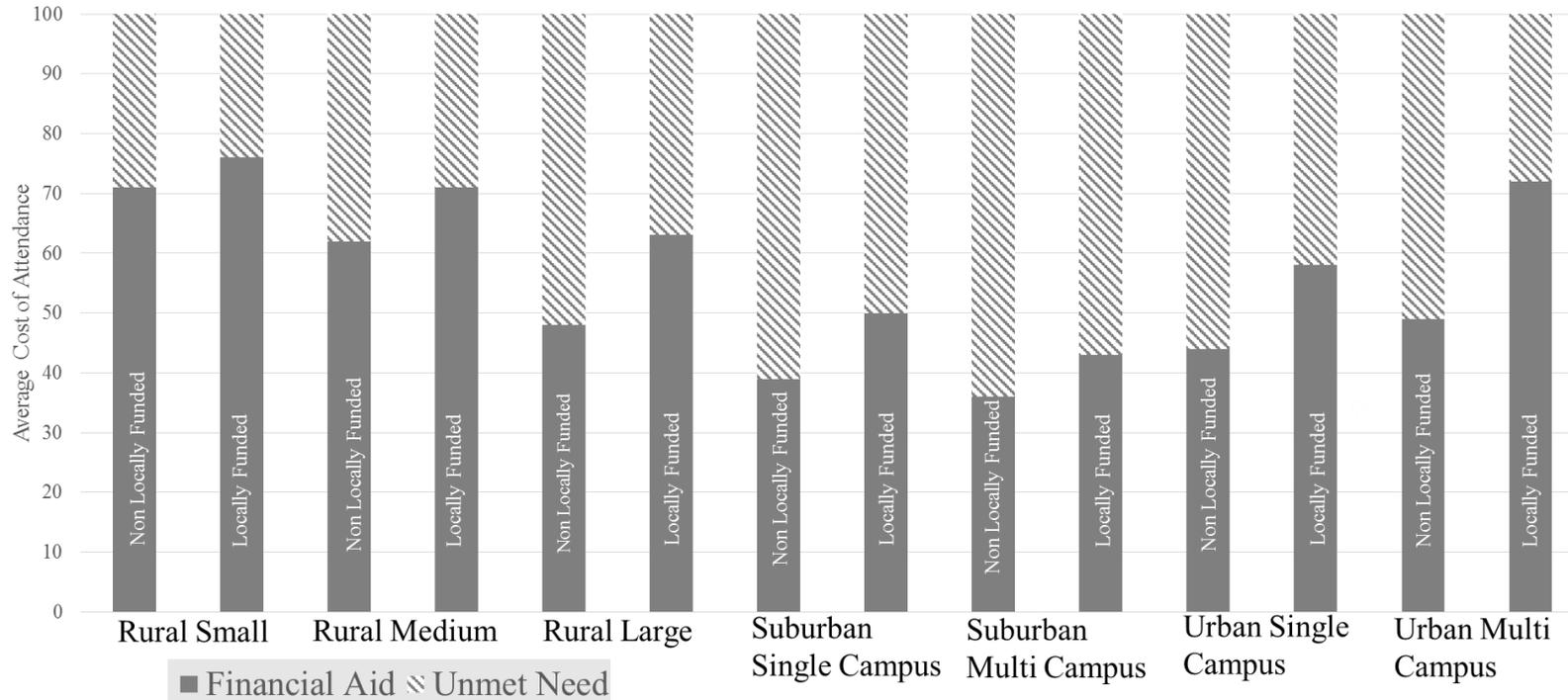
Source: Data are from the NCES IPEDS.

**Table 2 -1- Changes in Cost of Attendance and Financial Aid between 2003-04 and 2013-14 Still Result in Unmet Need for Students to Attend Community College**

| Mission Driven Classification Scheme | Cost of Attendance |           |           |         | Financial Aid to Students |           |           |         | Unmet Need |           |           |         |
|--------------------------------------|--------------------|-----------|-----------|---------|---------------------------|-----------|-----------|---------|------------|-----------|-----------|---------|
|                                      | Average            |           | Change in |         | Average                   |           | Change in |         | Average    |           | Change in |         |
|                                      | 2003-2004          | 2013-2014 | Dollars   | Percent | 2003-2004                 | 2013-2014 | Dollars   | Percent | 2003-2004  | 2013-2014 | Dollars   | Percent |
| Rural Small                          | \$3,630            | \$4,911   | \$1,281   | 26      | \$2,613                   | \$3,546   | \$933     | 26      | \$1,017    | \$1,365   | \$348     | 26      |
| Rural Medium                         | \$3,418            | \$4,609   | \$1,191   | 26      | \$2,354                   | \$3,731   | \$1,377   | 37      | \$1,064    | \$878     | (\$187)   | (21)    |
| Rural Large                          | \$3,115            | \$4,329   | \$1,214   | 28      | \$1,893                   | \$3,265   | \$1,373   | 42      | \$1,222    | \$1,064   | (\$158)   | (15)    |
| Suburban Single Campus               | \$3,294            | \$4,506   | \$1,212   | 27      | \$1,616                   | \$2,868   | \$1,252   | 44      | \$1,677    | \$1,637   | (\$40)    | (2)     |
| Suburban Multi Campus                | \$2,927            | \$4,116   | \$1,189   | 29      | \$1,218                   | \$2,761   | \$1,544   | 56      | \$1,709    | \$1,355   | (\$354)   | (26)    |
| Urban Single Campus                  | \$3,660            | \$4,772   | \$1,111   | 23      | \$2,015                   | \$3,702   | \$1,686   | 46      | \$1,645    | \$1,070   | (\$575)   | (54)    |
| Urban Multi Campus                   | \$2,714            | \$3,815   | \$1,101   | 29      | \$1,826                   | \$3,030   | \$1,204   | 40      | \$888      | \$785     | (\$103)   | (13)    |
| Average                              | \$3,251            | \$4,437   | \$1,186   | 27      | \$1,934                   | \$3,272   | \$1,338   | 41      | \$1,318    | \$1,165   | (\$153)   | (13)    |

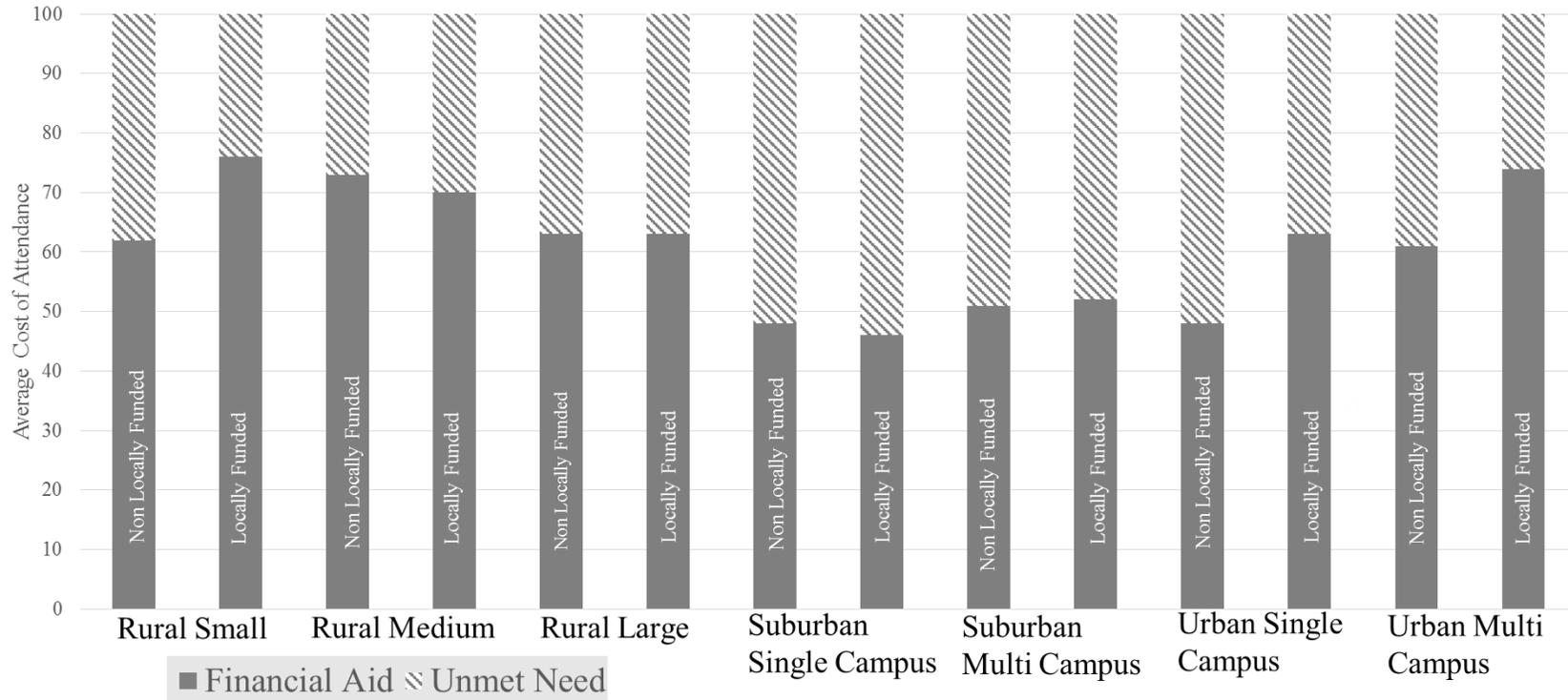
Notes: 1) Inflation adjusted calculations for dollar change in two 5-year periods and one 10-year period- FY 2003-04, 2008-09, and 2013-14 by Mission Driven Classification Scheme (Shedd, 2017). 2) Average Cost of Attendance represents the Average Published Tuition and Fees for the full academic year plus the average cost of books and supplies for the respective years. These data are published at the IPEDS College Navigator Web site. 3) Financial Aid to Students represents Pell Grants, Other Federal Grants, State Grants, Local Grants and Institutional Grant Aid Directly to Student variables in IPEDS. 4) Full-Time Equivalent Enrollment is used to calculate the Average Financial Aid to students from each of the above mentioned sources. 5) Unmet Need is the difference between the Average Financial Aid to students and the Average Cost of Attendance. 6) Data are from NCES IPEDS Scholarships and Fellowships tab. 6) Dollars are adjusted for 2014 inflation according to the BLS Inflation Calculator.

**Figure 2 -2- Differences in Cost, Financial Aid, and Unmet Need Vary Across Locally and Non Locally Funded States and Community College Type, 2003-04**



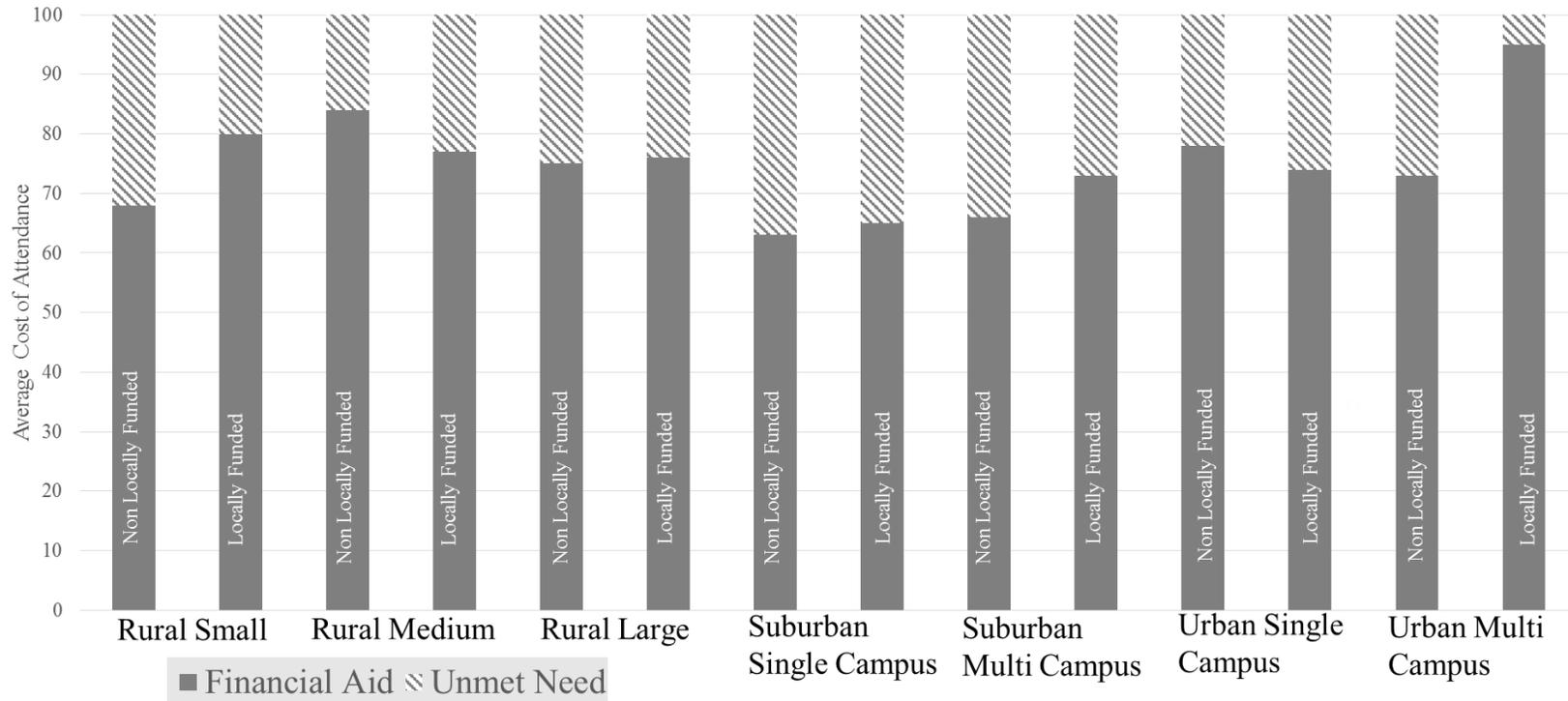
Notes: 1) Colleges categorized by Mission Driven Classification System (Shedd, 2017). 2) Data are presented as a percentage of the Average Cost of Attendance which represents the Average Published Tuition and Fees for the full academic year plus the average cost of books and supplies. 3) Financial Aid to Students represents Pell Grants, Other Federal Grants, State Grants, Local Grants and Institutional Grant Aid Directly to Students. 4) Full-Time Equivalent Enrollment is used to calculate the Average Grant Aid to students from each of the above mentioned sources. 5) Unmet Need is the difference between the average grant aid to students and the average tuition and fees. 6) Data are from NCES IPEDS Data Center and have been adjusted for 2014 Inflation according to the BLS Inflation Calculator.

**Figure 2 - 3 - Differences in Cost, Financial Aid, and Unmet Need Vary Across Locally and Non Locally Funded States and Community College Type, 2008-09**



Notes: 1) Colleges categorized by Mission Driven Classification System (Shedd, 2017). 2) Data are presented as a percentage of the Average Cost of Attendance which represents the Average Published Tuition and Fees for the full academic year plus the average cost of books and supplies. 3) Financial Aid to Students represents Pell Grants, Other Federal Grants, State Grants, Local Grants and Institutional Grant Aid Directly to Students. 4) Full-Time Equivalent Enrollment is used to calculate the Average Grant Aid to students from each of the above mentioned sources. 5) Unmet Need is the difference between the average grant aid to students and the average tuition and fees. 6) Data are from NCES IPEDS Data Center and have been adjusted for 2014 inflation according to the BLS Inflation Calculator.

**Figure 2 - 4 - Differences in Cost, Financial Aid, and Unmet Need Vary Across Locally and Non Locally Funded States and Community College Type, 2013-14**



Notes: 1) Colleges categorized by Mission Driven Classification System (Shedd, 2017). 2) Data are presented as a percentage of the Average Cost of Attendance which represents the Average Published Tuition and Fees for the full academic year plus the average cost of books and supplies. 3) Financial Aid to Students represents Pell Grants, Other Federal Grants, State Grants, Local Grants and Institutional Grant Aid Directly to Students. 4) Full-Time Equivalent Enrollment is used to calculate the Average Grant Aid to students from each of the above mentioned sources. 5) Unmet Need is the difference between the average grant aid to students and the average tuition and fees. 6) Data are from NCES IPEDS Data Center.

## STATE FINANCING FOR PUBLIC COMMUNITY COLLEGES: A COMPARATIVE STUDY OF FISCAL CAPACITY AND TAX EFFORT

The late Robert P. Pederson, a noted community college scholar and former senior editor of *Community College Week*, noted the changing landscapes of early community college funding in 2005:

Our understanding of the funding of public junior colleges prior to 1940 has been strongly influenced by the ideology of current scholars. A close reading of the historical record reveals that early junior colleges were rarely subsidized by states. Rather, their costs were met by approximately equal contributions of local tax revenue and unaided tuition, in an era that can best be characterized as one of high tuition and low aid. (pg.5 )

Pederson's words ring true, sadly, today and provide a launching point for researchers to realize the significance of a comparative analysis that accounts for state by state funding differences. Pederson believed that it was the role of the federal government to ameliorate differences across the states. He also believed that it was the role of the 50 state governments to ameliorate differences across the local districts. However, vast differences exist in the funding of community colleges across the states, even accounting for enrollment and geographic setting, institutions across and within the different states are funded at very different rates relative to their counterparts.

The ever-changing landscape of community college finance requires consistent baseline data against which, best practices can be developed. Much has changed since Joliet Junior College opened its doors in 1901, but some things remain the same. Policy and economics

continue to drive education finance. Higher education finance, and state level finance in particular, is becoming more volatile due to increasing competition for already scarce resources. This severe competition for resources has long been noted as a contributor to the national trend of state disinvestment. Many of the same budgetary competitors that were on the rise in the early 1990's are present today. All states can attest to the declining support for higher education in recent years, and many experts identify the vulnerability of higher education in state funding cuts due to its status as the largest discretionary item in state budgets (Delaney & Doyle, 2011; Palmer, 2008, 2013; Katsinas et al., 2005, 2017). This study uncovers the funding differences between the states, in order to inform policy analysis and provide a baseline for best practices for this important sector of higher education.

James Leland Johnson's 1999 doctoral dissertation calculated a net margin ratio between revenue and FTE expenditures. Johnson found that the relative financial position of rural community colleges declined between 1993 and 1997 (Johnson, 1999). In 2006, Billy Roessler documented gaps in community college finance literature, consistent with the research gaps Pascarella and Terenzini (1998) called an "empirical black hole." Roessler's analyzed revenue and expenditure streams across all 50 states. His research spanned two decades from 1980-81 to 2000-01, and revealed differences in community college type, location, governance, revenues, and expenditures. Roessler also studied state disinvestment and the accompanying rise of tuition and fees, and found that state student aid was being cut along with appropriations for operating budgets. Roessler concluded that, "the mix of revenues received by community colleges differs by geography and type of governance" (p. 189). In other words, state by state legislation and intrastate legislation varies greatly and it is useful for researches to consistently analyze these

variations as a means of researching policy for best practices. This provides impetus for the study at hand.

In his 2013 study of *State Fiscal Support*, James Palmer, editor of the annual Grapevine studies that have documented state tax appropriations for public higher education operating budgets back to 1960, introduces a central theme of *consistent analysis*. He states, “overall national averages mask the considerable differences between states in terms of the mix of revenues used to support the colleges” (Palmer, 2013). The wide range of key revenue streams for U.S. community colleges has been documented by many researchers in the field, yet has rarely been consistently analyzed. The vital importance of recognizing the wide range between stated minimums and maximums across the funding stream mixtures of the 50 states cannot be understated, particularly when viewing state and local appropriations as a percentage of the states’ total community college revenue. These stark differences surely mask disparities resulting in substantial differences that affect each states’ institutions differently. For example, the percentage of total revenue derived from local tax appropriations at public community colleges in Colorado equals 0; in Arkansas it equals 6%; and in Wisconsin, appropriations from local taxes reflect 57% of total operating revenue at their community colleges (Koh, forthcoming).

Such differences are well-known by experts in the field—former American Association of Community Colleges’ President George A. Boggs noted differences exist between community colleges in states with and states without local funding in 2003 (McCormick & Cox, 2003). The need to analyze these differences still exists and, in fact, has been magnified due to the steep decline in state funding over the recent years. Furthermore, Palmer’s analysis of past research and trend data accurately portrays the time period which coincides with the era of privatization. In his analysis, Palmer discusses how, “each state went its own way as policy-makers developed

strategies for meeting this new fiscal obligation [of competition for scarce state resources]” (2013). Palmer provides a useful take on the funding landscape of 2008-09 and calls for further research necessary to inform policy-makers of the changing fiscal landscape.

Given the relatively small amount of federal dollars (excluding Pell Grants and Workforce Training dollars) that make up total operating budgets at public community colleges, analyzing state and local investments in the form of appropriations and student aid to public community colleges makes sense. With data from 2000-2001, F. King Alexander conducted a comparative study of state tax effort. In his 2003 article published in *New Directions for Institutional Research*, Alexander documents disparities across all 50 states in tax capacity and tax effort. Alexander believes that “state fiscal capacity and effort are vital and pivotal aspects of any definition of an equitable system and therefore, should frequently be considered when conducting comparative financial studies” (Alexander, 2003). His 2003 study entitled, “Comparative Study of State Tax Effort and the Role of Federal Government Policy in Shaping Revenue Reliance Patterns” sheds light on state level financing for all of higher education. Including public and private, two and four- year institutions, Alexander’s analysis is unique and pertinent to understanding the current fiscal landscape that higher education experiences. Realizing that community college education and workforce training has increased in relevancy and importance over the last decade, this particular study revisits Alexander’s 2003 study with fiscal and enrollment data for public community colleges in FY 2013-14. It takes a deeper look into the differences and inequalities experienced across the different states, and is intended for reference by policy makers looking to develop comparative baseline data upon which best practices can be investigated and disseminated.

One would assume that a wealthy state has the capacity to levy taxes and provide additional funding for community colleges, but just because that capacity exists, it doesn't mean that they do. The purpose of this study is show that disparities exist across the 50 states in terms of fiscal capacity to provide funding for community colleges, but also in the effort that is exerted to fund community colleges. Analyzing each state's income on a per capita basis relative to the funding that is appropriated by state and local governments on a per student basis, one is able to compare and contrast state fiscal capacity and, in turn, state tax effort to support their community colleges as a means to answer the following research questions:

- 1) Do states with higher per capita income fund their community colleges more than states with low per capita income?
- 2) Do states with local funding provisions fund their community colleges more than states without local funding provisions?

### **State Tax Effort Comparisons**

As numerous researchers and policy analysts note, since the passage of the Morill Act in 1862, tax revenue fuels all sectors of public higher education. A central theme can be noted in most community college literature concerning the development and coordination of community colleges. These institutions have experienced an expanding role in society since their inception and through state legislation have become an integral part of state finance. This finding is consistent with Raymond J. Young's (1950) belief that community colleges should be formally recognized in state legislation, and that community involvement is paramount. Furthermore, as recently as 2015, this concept was discussed in a book aimed at informing community college administrators of their varying revenue streams from government appropriations: "Government revenue originating from income taxes paid to the federal and most state governments, sales

taxes paid to the states and many local authorities, or property taxes paid to local governments all are essential to the operation of all sectors of higher education” (Mullin et al., 2015, p. 13). A major point that tends to be overlooked in studies related to higher education finance however, is the fickle nature of the community college sector. This study focuses on community colleges in an effort to fill this gap and provide useful information for policy makers, researchers, and administrators alike.

In 1972, Kent D. Halstead was commissioned by the U.S. Department of Health, Education, and Welfare to write an 870-page book, *Statewide Planning in Higher Education* (1972), that identified major statewide planning issues, problems, and solutions to promote greater efficiency and coordination at the state level. This book introduced many comparisons across the states, including the socioeconomic climate for support of education and the financial support of higher education. Halstead discussed the importance of these analyses:

“Interstate comparisons, must, nevertheless, be regarded as a useful research instrument, albeit a technique not likely to provide definitive answers. Central to the usefulness of interstate comparisons is the concept of comparability. Comparison is the process of examining relative values to discover characteristic qualities, whether similar or dissimilar. The objects to be compared must share some common identity which equates similarities or differences, i.e. an identity which places them side by side to reveal their true relative character.” (Halstead, 1972, pg. 46).

The above statement emphasizes the importance of this proposed study in terms of linking best practices to policy analysis. The ability to compare similar and dissimilar funding proportions across the nation by classifying and categorizing data for these important institutions, further presents the focus of this study in measuring the relative willingness or effort to support

community colleges. In his 2003 article, F. King Alexander notes the use of tax effort as an important indicator to be used in comparing and monitoring changes at the state and local level.

[Insert Table 3 - 1]

Table 3 - 1 shows the amazingly wide range of state and local appropriations to support their public community colleges across 48 states. State Appropriations represents the amounts received by the institution through acts of state legislative body for current operating expenses. Local Appropriations are received from property or other taxes assessed directly by or for an institution below the state level (Integrated Postsecondary Education Data System, 2017). Delaware and Alaska were not included in this study due to missing data variables and in an effort to maintain consistency in the results. Kern Alexander and Richard P. Salmon provided a useful roadmap to determining fiscal capacity and effort to support public education in their 1995 book Public School Finance. In the chapter regarding state fiscal capacity and effort, they note “considerable variation” among states and students relative to population size, adding, “the personal income per pupil rather than either population or children of school age population are superior measures for determining the state fiscal capacity to support the public schools” (Alexander & Salmon, p. 161).

In the postsecondary education sector, Full-Time Equivalent (FTE) enrollment is used to appropriately aggregate the varying state and local investments for relative comparisons. State and local appropriations still vary greatly across the states, even when factoring in enrollment. Additionally, personal income and per capita personal income varies across states, ranging from \$34,600 in Mississippi to \$67,937 in Connecticut (Bureau of Economic Analysis, 2017). Finally, state and local appropriations per FTE is divided by the per capita personal income for each state to illustrate the stark differences in the states’ “perceived willingness” to support their

community colleges. The range for this calculation is vast— approximately \$4.20 per \$1,000 of personal income is allocated to public community colleges in Vermont, whereas approximately \$33.20 is appropriated in Wisconsin.

It is worth noting that local appropriations do not exist in every state. In fact, a recent analysis of 2013-14 community college finance data gathered from the National Center of Education Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS) by this researcher documents that 31 states receive less than 10% of their total operating revenue for community colleges from local appropriations, while 19 states received more than 10% of their total operating revenue from local appropriations. In Wisconsin, for example, community colleges as much as 57% of their total operating revenue from local appropriations, hence the larger share of “perceived willingness.”

[Insert Table 3 - 2]

Table 3 - 2 presents those states, and their respective share local appropriations (amounts received from property or other taxes assessed directly by or for an institution below the state level) as a percentage of total revenue for community colleges. James Palmer’s 2008 study identified an even split of 25 and 25, whereas this 2013-14 analysis of the same data reveals a shift to 31 non-locally-funded state community college systems versus 19 locally-funded state systems. A key takeaway from this analysis is that the locally-funded states (defined as those with over 10% of their total community college operating budgets from local appropriations) enroll 62% of the entire community college student population on a FTE basis. Additionally, five of the eight Mega-States are locally-funded state systems. A Mega-State is defined by *Grapevine* as a consortium of states that account for over 50% of state appropriations for higher education. The Mega-States included in the locally-funded category enroll approximately 43% of the total

FTE in that category. Consider these differences throughout this article as we explore the varying state fiscal capacities relative to the amount of dollars that they allocate. Just because a state is termed “locally-funded” it doesn’t necessarily mean that they exert a high level of tax effort for their community colleges.

### **Methodological Approach**

The foundation to conducting a comparative analysis is to organize data and information that is relative on all levels of calculation as a means to reveal similar and dissimilar characteristics. As stated by King Alexander in his 2003 article, “one of the most widely accepted approaches to determining how much tax effort states exert to support higher education is measured by spending per student relative to per capita income” (p. 16). This section elaborates on Alexander’s 2003 methodology which is followed closely in this study to provide a consistent illustration of the different tax bases across the nation and each state’s effort to support community colleges.

Using the Bureau of Economic Analysis’ (BEA) data on personal income by state along with the IPEDS variables on state and local revenues to community colleges will allow for a relative comparison of tax capacity and then tax effort by state. Aggregating all of the state data for each variable allows for a national average that, in turn, illustrates differences relative to each state and therefore comparable across all states. Alexander and Salmon’s methodology referred to the Advisory Commission on Intergovernmental Relations (ACIR) 1962 study entitled, “Measures of State and Local Fiscal Capacity and Tax Effort of State and Local Areas” to derive capacity and effort methodology. This study follows suit with those calculations for FY2013-14, and essentially measures the socioeconomic strength of each state to support their community colleges and their effort to do so.

In order to uncover “tax effort” for a given state, the “tax capacity” must first be calculated. Fiscal capacity or tax capacity referenced by Alexander and Salmon refers to the tax base of a governmental entity measured in terms of income, wealth, or other fiscal measures of economic productivity. From a description standpoint, tax capacity refers to the ability of a state system to obtain revenues from their own sources through taxation. It is essentially a measurement of economic resources within a governmental unit which can be used to support public functions (Alexander & Salmon, 1995). This research will build upon the works of Alexander and Salmon on public school finance, and King Alexander’s analysis of higher education finance to analyze community college finance on a state- by state basis. Personal income (in thousands) was obtained from the U.S. Department of Commerce’s Bureau of Economic Analysis. The BEA data are seasonally adjusted to reflect quarterly earnings and changes. The data are estimates, but are necessary to compute a given state’s tax capacity. Then, FTE enrollment at community colleges gathered from NCES IPEDS is aggregated for each state along with personal income (in thousands). To compare the tax capacity across the states the data are then presented as a percentage relative to the national average. This means that the average tax capacity of all 48 states included in this study (\$4,468.27) is used as a divisor to scale for relative tax capacity.

The broad definition of tax effort according to the ACIR refers to the ratio of revenue to the tax base (i.e.  $\text{Revenue} \div \text{Tax Base} = \text{Effort}$ ). Here the tax base, is the state’s tax capacity, or personal income. By aggregating state appropriations, local appropriations, state operating grants, local operating grants, and state student aid appropriations for each state we can represent “revenue” in the above mentioned equation. The state and local tax revenue data are totaled and divided by the state’s respective FTE enrollment at public community colleges in order to

compute a per FTE tax revenue. The “per FTE tax revenue” metric represents a variable that can be divided by the state’s actual tax capacity to then derive tax effort. Thus, tax effort as a ratio of the state’s tax capacity yields aggregated percentages that can be translated into high degrees of effort and low degrees of effort relative to each state’s own tax base. Each state has a relative effort tied to its own capacity. To show effort on a national scale, the tax effort in each state represents the dividend used to divide by the national average effort of 171.27%. The data and findings are presented in the following section to provide discussion pertinent to relevant policies and practices that effect funding for community colleges.

This study seeks to provide comparable data with reliable methodology that is consistent so that it can be re-calculated in the future. Limitations certainly exist. Comparing finance data across the states and within the states can be easily misconstrued. States vary greatly in population, natural resources, industry, climate, housing costs, and personal income. Higher education systems are quite different across the states as well. This study aggregates state data based on per student spending metrics and compares each state’s capacity and effort as a percentage of the national average as to develop a position of relativity for comparison purposes.

### **State Tax Effort for Public Community Colleges**

As previously noted, many disparities exist among the states. From the presence or absence of local funding from property tax or sales taxes, states have different policies for appropriating resources to community colleges. Similarly, every state has a different method for obtaining appropriations from its citizens. Wealth across the states obviously varies. This is due to population, industry, natural resources location, and a variety of other factors including the willingness of the citizens to tax themselves and how valuable they perceive community college education to be. Thus the previously mentioned methodology has been useful in aggregating this

data state by state to generate comparisons that are relative to the national average as a means of presenting rankings and practical findings that can inform policy making. While not within the scope of this study due to page and time restrictions, it is important to note that this analysis can and should be conducted within each state to identify the disparities that exist across the various local districts within a specified state.

[Insert Table 3 - 3]

Table 3 - 3 presents an analysis that has been routinely reported by Illinois State University's *Grapevine*. The ability to rank the states on appropriation per \$1,000 of personal income presents an effective means of benchmarking a perceived willingness to support public higher education, including community colleges. State tax revenues for community colleges per \$1,000 in personal income reveals disparities in the amount of funding to community colleges across and between the 48 states represented in this study. With a median amount of \$12.81 on every \$1,000 of personal income, states like Vermont (48), Colorado (47), New Jersey (46), and Louisiana (45) hover between \$4.00 and \$7.00 per \$1,000 of personal income and are therefore perceived to have an "unwillingness" to increase taxes in support of their community colleges. States like Wisconsin (1), Wyoming (2), New Mexico (3), and North Dakota (4) are perceived to be very willing to tax themselves in support of their community colleges. The appropriations per \$1,000 in personal income in those states are \$33.20, \$23.50, \$20.98, and \$18.29 respectively. Additionally, Table 3-3 displays a ranking of states by personal income, or in other words, the relative wealth of the states and representative capacity per capita. Note the four "unwilling" states and their per capita income rank: Vermont (18), Colorado (12), New Jersey (3), and Louisiana (29). Now, note the states that have a perceived "willingness" to provide tax appropriations as a viable revenue stream for community colleges: Wisconsin (24), Wyoming

(6), New Mexico (44), and North Dakota (4). These stark differences begin to shed light on the states that are doing more with less and less with more, but that is not all. Ranking states based solely on per capita income and total state and local revenues to their community colleges does not tell the entire story. While it is nice to see states that “have less and do more” their “perceived willingness” could be solely based on local funding provisions in state legislation or that they simply have more resources to appropriate.

[Insert Table 3 - 4]

Table 3 - 4 displays the per capita personal income (in thousands) divided by the total amount of state and local revenues per community college FTE student. This table is unique in that it highlights the 19 states that have local funding provisions which account for at least 10% of the total operating revenue for community colleges (Koh, forthcoming). Among the top 24 states in FTE appropriations per \$1,000 in personal income, half are termed “locally-funded states,” where at least 10% of the community colleges total operating revenue is derived solely from local appropriations. The main takeaway from this table is that local funding provisions do not necessarily mean that a state is appropriating an adequate amount of resources to its community college. While local funding certainly matters, especially in light of state disinvestment as a means of maintaining a solid revenue stream and offsetting some of the cost to the students (Koh, forthcoming), this table shows that local funding provisions do not make up for a perceived “unwillingness” to increase appropriations from tax revenue to community colleges. Simply put, local funding generally matters, but not always.

As a topic for further research, it would be interesting to revisit the high tuition and high aid model of funding with this dataset, in order to see just where some of these state community college systems are receiving their resources. It is fair to reconsider King Alexander’s approach

as described in the initial 2003 article in *New Directions for Community Colleges* that inspired this study. In his findings, Alexander (2003) posits that “federal policies on direct student aid have exacerbated inequalities between states because funds are disproportionately awarded to student attending institutions that have higher costs. States that do not restrict their public colleges and universities from increasing their reliance on tuition-based revenues are more likely to benefit disproportionately from federal funds for direct student aid [and visa versa]” (Alexander, p. 22).

Table 3 - 5 accounts for state and local funding to community colleges per FTE in order to depict the relative fiscal capacity and state tax effort across the forty-eight states included in this study. As mentioned earlier, the ratio of students to total population of a given state varies considerably, so it is useful to include enrollment factors to aggregate the data on a per student basis in order to gain a relative perspective on the financing capacity and effort. Furthermore, it is also essential that the capacity and effort are adjusted and presented as a percentage relative to the national average. It is worth noting that the 19 states receiving local funding drew down \$3,597 and \$4,361 dollars, respectively from state and local appropriations per FTE. That represents 22% and 27% of those states’ community colleges’ total operating revenue per FTE. Conversely, the 31 non-locally-funded states saw \$3,681 and \$435 from state and local appropriations per FTE, respectively. That represents 33% and 4% of those states’ community colleges’ total operating revenue per FTE (Koh, forthcoming). Reiterating that differences surely exist in local funding provisions offers a lens to view table 3-5 though.

[Insert Table 3 - 5]

The first takeaway is represented by the stark differences in capacity and effort that this table depicts. It is interesting to note the states that have the capacity yet do not exert effort.

Colorado, Vermont, New Hampshire, Nevada, and Montana all have a high relative tax capacity as a percent of the national average, yet they exert little tax effort when it comes to funding their community colleges as a percentage of the national average. Alternatively, Wyoming, New Mexico, Mississippi, Oregon, and Arizona exert a much higher tax effort relative to their capacity as a percentage of the national average. That requires looking at the difference in tax capacity compared to fiscal capacity. Similarly, the states with the highest ranking of effort follow suit through the top four (WY, NM, MS, OR) but then Wisconsin, North Carolina, and Arizona follow suit. The states of Mississippi, North Carolina, and Washington are considered non-locally-funded states under the 2013-14 update of the 2008 Grapevine methodology, so depicting them as high tax effort states with little capacity represents progress since King Alexander's analysis in 2003.

There are nine states with a smaller tax capacity but a markedly higher tax effort. It is worth noting that the latter three of these states (MS, NC, and WA) receive less than 10% of their total operating budgets for community colleges from local appropriations and are categorized as non-locally-funded states. New Mexico, Arizona, Iowa, Oregon, Wyoming, Kansas, Mississippi, North Carolina, and Washington all represent the bottom quartile of relative tax capacity as a percentage of the national average, yet they exert within the top quartile of tax effort to fund their community colleges. The funding models and policies in these states should be explored further to garner possible best practices. Some less wealthy states have little capacity yet still exert little effort thus increasing their chances to continue down their current path. For example, Kentucky ranks 30th in tax capacity and 33rd in tax effort. This all but guarantees a steady future, if not a decline, in regards to state funding relative to their capacity. Some more wealthy states have a great capacity to fund their community colleges, yet exert little to no effort. New Hampshire

ranks fourth in terms of capacity, but their \$4,825 per FTE funding from state and local sources represents a ranking of 44<sup>th</sup> in terms of effort. This typically reflects a high aid, high-tuition funding model.

[Insert Table 3 - 6]

Table 3 - 6 depicts the same exact states that King Alexander referenced in his 2003 study for comparison purposes. This update shows improvement in six of the previously "low tax effort" states, as South Carolina, North Dakota, Maryland, New York, Vermont, and South Dakota all increased their financial support for public community colleges relative to the national average. This analysis also shows improvement in tax effort for states that were already termed "high tax effort" states in the 2003 analysis: New Mexico, Iowa, Kansas, California, Oregon, Nebraska, and Wisconsin all increased their state tax effort relative to the national average.

There were some states that are free falling in terms of effort relative to their capacity, however. Notable "high effort" states that fell and by which amount they decreased include: Maine, which fell by 110%, Louisiana by 132%, Kentucky by 86% and Utah by 92%. Also, some of the "low effort" states saw declines in effort relative to capacity as a percent of the US average. The "low effort" states that fell the most were Connecticut, Colorado, and New Hampshire.

These findings suggest that vast disparities in how states fund their community colleges. Recalling the research questions that bared the focus of this study, it is not enough to assume that just because a state has high per capita income level and even a high level of perceived willingness to contribute to their state's community colleges that they will do so. Additionally, just because a state has local funding provisions that does not necessarily mean that a state is

appropriating an adequate amount of resources to its community colleges relative to the national average. Local funding certainly matters, but not always.

## **Discussion**

Noting the decline of state resources to higher education compounded with the increased competition from healthcare and corrections initiatives, public community colleges are certainly in a precarious position. Especially in light of the rising need for high skill workers in technical fields that do not require four-year degrees, community colleges are just as important as ever to the prosperity of the nation (D'amico et al, 2012). If the funding goal is to improve the outlook or at least maintain the current share of fiscal resources for these important institutions, it is imperative that policy makers are aware of the current funding landscape. Additionally, as King Alexander discusses in his 2003 article, some instances of federal support, like federal direct student aid, actually incent states to maintain flat or lower funding for their institutions in critical times of need. It seems entirely logical that federal support would, could and should be used as leverage to incentivize state's to maintain and invest in higher education and with that, community colleges. As a concluding recommendation to accompany this research, further exploration of this leveraged federal support is provided below.

King Alexander's 2003 article which informed this study was built around a discussion of the federal role in maximizing revenue for all higher education sectors. This 2017 study focuses on community colleges, yet the findings and the effects of new legislation leveraging other funding influences to maintain state funding levels remains the same. With such great disparities in existence across the nation, we must not be content in the current funding situation at our nation's community colleges. The ambiguous nature of tax capacity and tax effort in this sector of higher education calls for federal policies that attempt to preserve state funding to community

colleges, especially considering the broadening missions in workforce and economic development seen recently. King Alexander concluded his 2003 article by calling for Maintenance of Effort (MOE) provisions from the Federal Government through incentivized packages in the form of grants.

King Alexander, Thomas Harnisch, Daniel Hurley, and Robert Moran provide an update on the federal role in offsetting the current decline in state funding in the form of MOE provisions. Their 2010 article in the *Journal of Education Finance* documents the shift in state funding to the students and provides a useful description of those MOE provisions. MOE is a federal legislation that establishes “minimum funding thresholds that states must meet in order to receive specified federal funds” (Alexander et al., 2010). This incentivized approach to maintaining state effort in funding their public institutions was designed to at least maintain the pre-recession funding levels for higher education and deter the discretionary cuts that were bound to follow the 2008 recession. All in all, only three states budgeted right at the minimum threshold and the other were able to hold steady. This suggests that the incentive package was effective. Focused on the provision of affordable and equitable access across the nation, the conclusion drawn from this 2010 study revealed that MOE provisions stymied state budget cuts for higher education.

While the MOE provisions have seemingly protected state investments from what could have happened, that finding does not necessarily mean that states are continuing to provide adequate funding levels relative to their given fiscal capacities. The importance of community colleges to the economic vitality of each state by means of workforce development and industry recruitment ought to be considered at every level of funding. Considering a federal role in incentivizing a maintained and equitable funding level across the states would certainly take into

account tax capacity and tax effort information to model the policies. Ideally, these policies would consider the findings in this study, or a similar one that reflect a particular philosophy in some of the poorer states. State funding philosophies, policies, and models in New Mexico, Arizona, Iowa, Oregon, Wyoming, Kansas, Mississippi, North Carolina, and Washington should be further analyzed for possible best practices. These states tend to exert more effort in funding their community colleges, even though they rank in the lowest quartile of tax capacity. Perhaps they recognize the importance of this sector in improving the socioeconomic conditions of that state as a whole, which would perpetuate in the years ahead. Furthermore, states that are exerting an increased tax effort are finding their community college revenues to be less tuition dependent and thus lifting up their students and families. Whatever the case in a given state, one thing is certain: disparities exist in funding for community colleges across the nation. It is the opinion of this researcher that the federal government continue to implement and explore policies that incentivize states in time of economic downturn, and that times of economic improvement not be held against the community colleges. Why not strive for equitable and steadily maintained funding streams for the very institutions that play such a vital role in creating the workforce of the future?

Throughout this study, the importance of equitable funding across the states remains a critical factor in considering access to community colleges for economic development. That the federal and state governments should strive to identify and incentivize equitable funding, represents a stance taken by many researchers in the field. While disparities certainly exist across the 50 United States, it is well known that disparities also exist within each state at the local district level. Additionally, institution size and geospatial setting provide complexities in analyzing those local district revenues per capita and per FTE. Nevertheless, additional research

to uncover those disparities relative to each institution and local district should be conducted. It is recommended that this study, conducted under the Mission-Driven Classification System (Shedd, 2017) and including local district analyses, could inform policy to enhance the effectiveness of state funding in creating a more equitable funding environment.

This study uncovered the vast differences across the states in funding for community colleges. Wealthy or poor, states do not necessarily fund their community colleges based on their relative financial position. Further research documenting the practices in states that exert high levels of tax effort even though they have a low level of tax capacity should be conducted. Additionally, the effects of any and all MOE provisions should continue to be researched and would inform best practices for policy. Examining the federal provisions granted through MOE and the relative funding levels prior to and after those provisions were granted in those states could allow for contrasts and comparisons to be made. All of these research suggestions would develop a research base to help provide further information necessary for increased maintenance of effort legislation on the federal level and hopefully a steadier funding stream to community colleges and the students they serve.

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| <b>Table 3 - 1 - Disparities Exist in Personal Income and Appropriations to Community Colleges by State</b> |                         |                 |               |
|---|-------------------------|-----------------|---------------|
| 2013-14 State and Local Appropriations to Community Colleges and Personal Income                            | Range across the states |                 |               |
|   | Minimum                 | Maximum         | Median        |
| Local Appropriations  | \$0                     | \$2,329,497,144 | \$197,670,377 |
| State Appropriations  | \$5,424,037             | \$2,582,870,863 | \$286,000,150 |
| Total State and Local Appropriations per FTE  | \$2,019                 | \$15,013        | \$5,836       |
| Per Capita Personal Income  | \$34,600                | \$67,937        | \$45,986      |
| State and Local Appropriations per \$1,000 of Personal Income   | \$4.20                  | \$33.20         | \$12.80       |

Notes: 1) Personal income data are for the 4th quarter of 2013. They are seasonal estimates from the Bureau of Economic Analysis, U.S. Department of Commerce. Retrieved on September 10, 2017. from <https://bea.gov/itable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1> 2) State and Local Appropriations represent the exact variables from IPEDS. State Appropriations represents the amounts received by the institution through acts of state legislative body for current operating expenses. Local Appropriations represent amounts received from property or other taxes assessed directly by or for institutions below the state level. Data retrieved on October 20, 2016 from Integrated Postsecondary Education Data System found at <http://nces.ed.gov/ipeds/datacenter>.

| Less than 10% of Total Revenue comes from Local Appropriations |                      |                             |                     |                | Over 10% of Total Revenue comes from Local Appropriations |                      |                             |                     |                |
|--|----------------------|-----------------------------|---------------------|----------------|---|----------------------|-----------------------------|---------------------|----------------|
| State  | % from Local Approp. | # of Institutions reporting | 2014 FTE Enrollment | % of Total FTE | State   | % from Local Approp. | # of institutions reporting | 2014 FTE Enrollment | % of Total FTE |
| AK   | 0.0                  | 0                           | NA                  | NA             | OK  | 10.2                 | 12                          | 40,112              | 0.9            |
| CO   | 0.0                  | 14                          | 49,774              | 1.1            | <b>OH</b>   | <b>10.5</b>          | <b>26</b>                   | <b>126,974</b>      | <b>2.9</b>     |
| CT   | 0.0                  | 14                          | 33,874              | 0.8            | ID  | 12.3                 | 4                           | 15,428              | 0.3            |
| DE   | 0.0                  | 0                           | NA                  | NA             | IA  | 13.9                 | 16                          | 65,181              | 1.5            |
| <b>FL</b>  | <b>0.0</b>           | <b>28</b>                   | <b>330,142</b>      | <b>7.5</b>     | WY  | 15.4                 | 7                           | 13,953              | 0.3            |
| HI   | 0.0                  | 6                           | 16,255              | 0.4            | MO  | 15.5                 | 14                          | 72,201              | 1.6            |
| IN   | 0.0                  | 1                           | 67,265              | 1.5            | OR  | 16.9                 | 17                          | 72,133              | 1.6            |
| LA   | 0.0                  | 15                          | 48,592              | 1.1            | <b>NJ</b>   | <b>17.0</b>          | <b>19</b>                   | <b>122,456</b>      | <b>2.8</b>     |
| MA   | 0.0                  | 16                          | 67,121              | 1.5            | <b>NY</b>   | <b>22.0</b>          | <b>35</b>                   | <b>236,382</b>      | <b>5.3</b>     |
| ME   | 0.0                  | 7                           | 11,510              | 0.3            | MD  | 25.9                 | 16                          | 87,126              | 2.0            |
| MN   | 0.0                  | 29                          | 88,238              | 2.0            | <b>CA</b>   | <b>26.8</b>          | <b>107</b>                  | <b>781,853</b>      | <b>17.7</b>    |
| ND   | 0.0                  | 6                           | 4,427               | 0.1            | NM  | 28.6                 | 17                          | 47,328              | 1.1            |
| NH   | 0.0                  | 7                           | 9,310               | 0.2            | MI  | 28.7                 | 22                          | 119,318             | 2.7            |
| NV   | 0.0                  | 1                           | 6,372               | 0.1            | KS  | 30.5                 | 25                          | 56,502              | 1.3            |
| RI   | 0.0                  | 1                           | 10,233              | 0.2            | <b>TX</b>   | <b>33.5</b>          | <b>57</b>                   | <b>429,662</b>      | <b>9.7</b>     |
| SD   | 0.0                  | 4                           | 6,189               | 0.1            | IL  | 37.2                 | 48                          | 244,796             | 5.5            |
| TN   | 0.0                  | 13                          | 57,350              | 1.3            | NE  | 38.1                 | 6                           | 29,728              | 0.7            |
| UT   | 0.0                  | 1                           | 20,007              | 0.5            | AZ  | 50.5                 | 19                          | 126,650             | 2.9            |
| VT   | 0.0                  | 1                           | 3,314               | 0.1            | WI  | 56.8                 | 15                          | 55,152              | 1.2            |
| WA   | 0.0                  | 32                          | 49,051              | 1.1            |   |                      |                             |                     |                |
| KY   | 0.0                  | 16                          | 52,830              | 1.2            |   |                      |                             |                     |                |
| <b>GA</b>  | <b>0.0</b>           | <b>24</b>                   | <b>88,487</b>       | <b>2.0</b>     |   |                      |                             |                     |                |
| VA   | 0.2                  | 23                          | 120,829             | 2.7            |   |                      |                             |                     |                |
| AL   | 0.3                  | 25                          | 66,035              | 1.5            |   |                      |                             |                     |                |
| WV   | 0.6                  | 9                           | 10,848              | 0.2            |   |                      |                             |                     |                |
| MT   | 4.4                  | 6                           | 5,430               | 0.1            |   |                      |                             |                     |                |
| AR   | 5.5                  | 22                          | 38,805              | 0.9            |   |                      |                             |                     |                |
| SC   | 7.8                  | 20                          | 73,147              | 1.7            |   |                      |                             |                     |                |
| MS   | 8.9                  | 15                          | 65,003              | 1.5            |   |                      |                             |                     |                |
| <b>NC</b>  | <b>9.1</b>           | <b>58</b>                   | <b>188,694</b>      | <b>4.3</b>     |   |                      |                             |                     |                |
| PA   | 9.5                  | 20                          | 94,597              | 2.1            |   |                      |                             |                     |                |
| <b>Total</b>   | <b>-</b>             | <b>434</b>                  | <b>1,683,729</b>    | <b>38</b>      | <b>Total</b>  | <b>-</b>             | <b>482</b>                  | <b>2,742,935</b>    | <b>62</b>      |

Notes: 1)Total Operating Revenue calculated through sum of all operating revenue categories defined by NCES Digest of Ed. Statistics (Snyder and Dillow, 2014). 2)Variable definitions as defined by Delta Cost Project Data Dictionary. 3)Percentages derived by total Local Appropriations for each State's community colleges divided by Total Operating Revenue for each State's community colleges. Local Appropriations represent amounts received from property or other taxes assessed directly by or for institutions below the state level. Data retrieved on October 20, 2016 from Integrated Postsecondary Education Data System found at <http://nces.ed.gov/ipeds/datacenter>. 4) Megastates (CA, FL, GA, NY, NC, OH, NJ, TX) are listed in bold. Megastates are the eight states that accounted for approximately 50% of the state appropriations for higher education in FY 2013-14 (Palmer, 2017) (<https://education.illinoisstate.edu/grapevine/tables/>).

**Table 3 - 3 - Appropriations and Per capita Personal Income Rankings by State in 2013-14 Show "Perceived Willingness" to Fund Community Colleges**

| State       | State and Local Tax Revenues per FTE | Rank | Per capita personal income | Rank | FTE Tax Revenues from State and Local Sources per \$1,000 in personal income | Rank | State       | State and Local Tax Revenues per FTE | Rank | Per capita personal income | Rank | FTE Tax Revenues from State and Local Sources per \$1,000 in personal income | Rank |
|-------------|--------------------------------------|------|----------------------------|------|--|------|-------------|--------------------------------------|------|----------------------------|------|--|------|
| AL          | \$4,848                              | 30   | \$37,551                   | 45   | \$12.91  | 21   | NC          | \$6,226                              | 16   | \$39,977                   | 37   | \$15.57  | 13   |
| AR          | \$6,189                              | 18   | \$38,178                   | 41   | \$16.21  | 9    | ND          | \$10,666                             | 3    | \$58,307                   | 4    | \$18.29  | 4    |
| AZ          | \$6,049                              | 22   | \$38,548                   | 39   | \$15.69  | 12   | NE          | \$7,912                              | 4    | \$49,022                   | 15   | \$16.14  | 10   |
| CA          | \$7,365                              | 10   | \$52,164                   | 9    | \$14.12  | 16   | NH          | \$4,825                              | 32   | \$54,671                   | 8    | \$8.83   | 37   |
| CO          | \$2,378                              | 47   | \$50,712                   | 12   | \$4.69   | 47   | NJ          | \$3,703                              | 40   | \$58,782                   | 3    | \$6.30   | 46   |
| CT          | \$7,759                              | 6    | \$67,937                   | 1    | \$11.42  | 30   | NM          | \$7,894                              | 5    | \$37,621                   | 44   | \$20.98  | 3    |
| FL          | \$3,801                              | 39   | \$43,575                   | 26   | \$8.72   | 38   | NV          | \$4,821                              | 33   | \$41,224                   | 34   | \$11.70  | 29   |
| GA          | \$3,587                              | 42   | \$39,566                   | 38   | \$9.06   | 36   | NY          | \$7,433                              | 8    | \$57,800                   | 5    | \$12.86  | 23   |
| HI          | \$6,053                              | 21   | \$47,247                   | 19   | \$12.81  | 24   | OH          | \$4,840                              | 31   | \$42,904                   | 27   | \$11.28  | 31   |
| IA          | \$6,286                              | 15   | \$44,964                   | 25   | \$13.98  | 17   | OK          | \$5,706                              | 25   | \$45,688                   | 23   | \$12.49  | 27   |
| ID          | \$6,040                              | 23   | \$37,821                   | 42   | \$15.97  | 11   | OR          | \$7,595                              | 7    | \$42,461                   | 28   | \$17.89  | 5    |
| IL          | \$6,209                              | 17   | \$49,331                   | 14   | \$12.59  | 26   | PA          | \$4,118                              | 37   | \$48,832                   | 17   | \$8.43   | 40   |
| IN          | \$4,373                              | 35   | \$41,254                   | 33   | \$10.60  | 32   | RI          | \$4,631                              | 34   | \$48,889                   | 16   | \$9.47   | 35   |
| KS          | \$6,960                              | 12   | \$47,053                   | 20   | \$14.79  | 15   | SC          | \$5,092                              | 28   | \$37,426                   | 46   | \$13.60  | 18   |
| KY          | \$3,134                              | 45   | \$37,664                   | 43   | \$8.32   | 42   | SD          | \$3,686                              | 41   | \$46,258                   | 22   | \$7.97   | 43   |
| LA          | \$2,960                              | 46   | \$42,346                   | 29   | \$6.99   | 45   | TN          | \$4,868                              | 29   | \$40,878                   | 36   | \$11.91  | 28   |
| MA          | \$5,792                              | 24   | \$60,936                   | 2    | \$9.50   | 34   | TX          | \$6,114                              | 19   | \$46,486                   | 21   | \$13.15  | 20   |
| MD          | \$7,418                              | 9    | \$54,892                   | 7    | \$13.51  | 19   | UT          | \$3,937                              | 38   | \$38,323                   | 40   | \$10.27  | 33   |
| ME          | \$5,439                              | 27   | \$42,144                   | 30   | \$12.91  | 22   | VA          | \$3,580                              | 43   | \$50,899                   | 11   | \$7.03   | 44   |
| MI          | \$6,313                              | 14   | \$41,659                   | 32   | \$15.15  | 14   | VT          | \$2,019                              | 48   | \$48,058                   | 18   | \$4.20   | 48   |
| MN          | \$4,284                              | 36   | \$50,070                   | 13   | \$8.56   | 39   | WA          | \$6,504                              | 13   | \$51,314                   | 10   | \$12.68  | 25   |
| MO          | \$3,478                              | 44   | \$41,709                   | 31   | \$8.34   | 41   | WI          | \$15,013                             | 1    | \$45,224                   | 24   | \$33.20  | 1    |
| MS          | \$5,631                              | 26   | \$34,600                   | 48   | \$16.28  | 8    | WV          | \$6,100                              | 20   | \$36,408                   | 47   | \$16.76  | 7    |
| MT          | \$7,145                              | 11   | \$41,115                   | 35   | \$17.38  | 6    | WY          | \$13,369                             | 2    | \$56,881                   | 6    | \$23.50  | 2    |
| <b>Avg.</b> | <b>\$5,836</b>                       |      | <b>\$45,987</b>            |      | <b>\$12.81</b>   |      | <b>Avg.</b> | <b>\$5,836</b>                       |      | <b>\$45,987</b>            |      | <b>\$12.81</b>   |      |

Source: 1) Personal income data are for the 4th quarter of 2013. They are seasonal estimates from the Bureau of Economic Analysis, U.S. Department of Commerce. Retrieved on September 10, 2017. from <https://bea.gov/itable/itable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1> 2) State and Local Tax Revenues represent State Appropriations, Local Appropriations, State Operating Grants, Local Operating Grants, and State Grants directly to Students. Data retrieved on October 20, 2016 from the Integrated Postsecondary Education Data System found at <http://nces.ed.gov/ipeds/datacenter>.

Note: Data are calculated by Dividing the Per capita Personal Income by the total State and Local Tax Revenues per FTE. Alaska and Delaware were not included in this study due to incomplete data.

**Table 3 - 4 - Local Funding Provisions Do Not Necessarily Translate to Perceived Willingness to Fund Community Colleges**

| State | FTE Tax Revenues from State and Local Sources per \$1,000 in personal income | Rank | State | FTE Tax Revenues from State and Local Sources per \$1,000 in personal income | Rank |
|-------|--|------|-------|--|------|
| *WI   | \$33.20  | 1    | WA    | \$12.68  | 25   |
| *WY   | \$23.50  | 2    | *IL   | \$12.59  | 26   |
| *NM   | \$20.98  | 3    | *OK   | \$12.49  | 27   |
| ND    | \$18.29  | 4    | TN    | \$11.91  | 28   |
| OR    | \$17.89  | 5    | NV    | \$11.70  | 29   |
| MT    | \$17.38  | 6    | CT    | \$11.42  | 30   |
| WV    | \$16.76  | 7    | *OH   | \$11.28  | 31   |
| MS    | \$16.28  | 8    | IN    | \$10.60  | 32   |
| AR    | \$16.21  | 9    | UT    | \$10.27  | 33   |
| *NE   | \$16.14  | 10   | MA    | \$9.50   | 34   |
| *ID   | \$15.97  | 11   | RI    | \$9.47   | 35   |
| *AZ   | \$15.69  | 12   | GA    | \$9.06   | 36   |
| NC    | \$15.57  | 13   | NH    | \$8.83   | 37   |
| *MI   | \$15.15  | 14   | FL    | \$8.72   | 38   |
| *KS   | \$14.79  | 15   | MN    | \$8.56   | 39   |
| *CA   | \$14.12  | 16   | PA    | \$8.43   | 40   |
| *IA   | \$13.98  | 17   | *MO   | \$8.34   | 41   |
| SC    | \$13.60  | 18   | KY    | \$8.32   | 42   |
| *MD   | \$13.51  | 19   | SD    | \$7.97   | 43   |
| *TX   | \$13.15  | 20   | VA    | \$7.03   | 44   |
| AL    | \$12.91  | 21   | LA    | \$6.99   | 45   |
| ME    | \$12.91  | 22   | *NJ   | \$6.30   | 46   |
| *NY   | \$12.86  | 23   | CO    | \$4.69   | 47   |
| HI    | \$12.81  | 24   | VT    | \$4.20   | 48   |

Note: 1) \*Shaded States Receive 10% or more of their total operating revenue from Local Appropriations. 2) Data are calculated by Dividing the Per capita Personal Income by the total State and Local Tax Revenues per FTE. Alaska and Delaware were not included in this study due to incomplete data.

Source: 1) Personal income data are for the 4th quarter of 2013. They are seasonal estimates from the Bureau of Economic Analysis, U.S. Department of Commerce. Retrieved on September 10, 2017. from <https://bea.gov/itable/itable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1> 2) State and Local Tax Revenues represent State Appropriations, Local Appropriations, State Operating Grants, Local Operating Grants, and State Grants directly to Students. Data retrieved on October 20, 2016 from Integrated Postsecondary Education Data System found at <http://nces.ed.gov/ipeds/datacenter>.

**Table 3 - 5 - Disparities Across the United States in Capacity and Effort to Fund Community Colleges**

| State       | Total State and Local Tax Revenue Per FTE | Relative Fiscal Capacity as a % of the US Average | Rank     | State Tax Effort as a % of the US Average | Rank     | State       | Total State and Local Tax Revenue Per FTE | Relative Fiscal Capacity as a % of the US Average | Rank     | State Tax Effort as a % of the US Average | Rank     |
|-------------|---|---|----------|---|----------|-------------|---|---|----------|---|----------|
| AL          | \$4,847.79                                | 62  | 35       | 103                                       | 19       | NC          | \$6,225.65                                | 47  | 45       | 172                                       | 6        |
| AR          | \$6,189.09                                | 65  | 34       | 124                                       | 14       | ND          | \$10,665.85                               | 221   | 2        | 63  | 28       |
| AZ          | \$6,048.81                                | 46  | 46       | 172                                       | 7        | NE          | \$7,912.10                                | 70  | 31       | 148                                       | 12       |
| CA          | \$7,365.22                                | 58  | 38       | 166                                       | 10       | NH          | \$4,825.46                                | 175   | 4        | 36  | 44       |
| CO          | \$2,378.12                                | 123   | 12       | 25  | 46       | NJ          | \$3,703.12                                | 96  | 20       | 50  | 39       |
| CT          | \$7,759.07                                | 161   | 6        | 63  | 30       | NM          | \$7,893.63                                | 37  | 47       | 278                                       | 2        |
| FL          | \$3,801.04                                | 59  | 36       | 85  | 23       | NV          | \$4,821.30                                | 391   | 1        | 16  | 47       |
| GA          | \$3,586.51                                | 101   | 18       | 46  | 40       | NY          | \$7,432.67                                | 108   | 15       | 90  | 21       |
| HI          | \$6,053.36                                | 92  | 21       | 86  | 22       | OH          | \$4,840.45                                | 88  | 24       | 72  | 26       |
| IA          | \$6,285.98                                | 48  | 44       | 171                                       | 8        | OK          | \$5,705.63                                | 99  | 19       | 75  | 25       |
| ID          | \$6,039.79                                | 86  | 26       | 91  | 20       | OR          | \$7,594.94                                | 53  | 43       | 189                                       | 4        |
| IL          | \$6,209.09                                | 58  | 37       | 140                                       | 13       | PA          | \$4,118.01                                | 148   | 7        | 36  | 43       |
| IN          | \$4,372.88                                | 91  | 23       | 63  | 29       | RI          | \$4,630.60                                | 113   | 13       | 54  | 38       |
| KS          | \$6,959.68                                | 54  | 40       | 168                                       | 9        | SC          | \$5,091.64                                | 56  | 39       | 120                                       | 16       |
| KY          | \$3,133.85                                | 71  | 30       | 58  | 33       | SD          | \$3,686.41                                | 135   | 10       | 36  | 45       |
| LA          | \$2,960.13                                | 91  | 22       | 43  | 41       | TN          | \$4,867.87                                | 105   | 17       | 61  | 31       |
| MA          | \$5,791.68                                | 137   | 9        | 55  | 36       | TX          | \$6,113.91                                | 66  | 33       | 122                                       | 15       |
| MD          | \$7,417.72                                | 87  | 25       | 112                                       | 17       | UT          | \$3,936.97                                | 127   | 11       | 41  | 42       |
| ME          | \$5,439.44                                | 109   | 14       | 65  | 27       | VA          | \$3,580.28                                | 79  | 27       | 60  | 32       |
| MI          | \$6,313.01                                | 78  | 29       | 106                                       | 18       | VT          | \$2,018.76                                | 203   | 3        | 13  | 48       |
| MN          | \$4,284.11                                | 69  | 32       | 81  | 24       | WA          | \$6,504.12                                | 54  | 41       | 158                                       | 11       |
| MO          | \$3,478.04                                | 78  | 28       | 58  | 34       | WI          | \$15,012.83                               | 106   | 16       | 185                                       | 5        |
| MS          | \$5,631.47                                | 36  | 48       | 206                                       | 3        | WV          | \$6,100.19                                | 139   | 8        | 57  | 35       |
| MT          | \$7,145.30                                | 174   | 5        | 54  | 37       | WY          | \$13,369.43                               | 53  | 42       | 327                                       | 1        |
| <b>Avg.</b> | <b>\$5,836.31</b>                         | <b>100</b>  | <b>-</b> | <b>100</b>                                | <b>-</b> | <b>Avg.</b> | <b>\$5,836.31</b>                         | <b>100</b>  | <b>-</b> | <b>100</b>                                | <b>-</b> |

Notes: 1) State and Local Tax Revenue per FTE generated using IPEDS FTE enrollment figures divided by the IPEDS Finance Variables listed under "source" below. 2) Tax Capacity (not displayed in this chart but used to derive relative fiscal capacity) is calculated by dividing the State's personal income total by the state's total FTE at Public Community Colleges. 3) Relative Fiscal Capacity is the personal income per FTE as a percentage of the US average. 3) Unadjusted Tax Effort (not displayed in this chart, but used to derive relative tax effort) is the ratio of State and Local Tax revenue per FTE to State's Tax Capacity. 4) State Tax Effort is presented as a percentage relative to the US Average.  
Source: 1) Personal income data are for the 4th quarter of 2013. They are seasonal estimates from the Bureau of Economic Analysis, U.S. Department of Commerce. Retrieved on September 10, 2017, from <https://bea.gov/itable/itable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1> 2) State and Local Tax Revenues represent State Appropriations, Local Appropriations, State Operating Grants, Local Operating Grants, and State Grants directly to Students. Data retrieved on October 20, 2016 from the Integrated Postsecondary Education Data System found at <http://nces.ed.gov/ipeds/datacenter>.

**Table 3 - 6 Changes in State Tax Effort Disparities for Public Two-Year Colleges in 2000-01 compared to 2013-14**

| States with High Tax Effort Percentage in 2000-01 |                              |                        | States with Low Tax Effort Percentage in 2000-01 |                               |                        |
|---|------------------------------|------------------------|--|-------------------------------|------------------------|
| State   | 2000-01<br>(Alexander, 2003) | 2013-14<br>(Koh, 2017) | State  | 2000- 01<br>(Alexander, 2003) | 2013-14<br>(Koh, 2017) |
| Maine   | 176                          | 65                     | Vermont & South Dakota                           | 0 & 0                         | 13 & 36                |
| Louisiana   | 176                          | 43                     | South Carolina                                   | 24                            | 120                    |
| North Carolina                                    | 172                          | 172                    | North Dakota                                     | 24                            | 63                     |
| Wisconsin   | 163                          | 185                    | Georgia  | 54                            | 46                     |
| Kentucky  | 144                          | 58                     | Maryland   | 56                            | 112                    |
| Arkansas  | 140                          | 124                    | New Jersey                                       | 67                            | 50                     |
| Nebraska  | 139                          | 148                    | New Hampshire                                    | 71                            | 36                     |
| Utah  | 134                          | 41                     | New York   | 75                            | 90                     |
| Oregon  | 131                          | 189                    | West Virginia                                    | 76                            | 57                     |
| California  | 125                          | 166                    | Tennessee  | 79                            | 61                     |
| Delaware  | 122                          | NA                     | Connecticut                                      | 80                            | 25                     |
| Michigan  | 122                          | 106                    | Indiana  | 80                            | 63                     |
| Kansas  | 118                          | 168                    | Rhode Island                                     | 80                            | 54                     |
| Iowa  | 117                          | 171                    | Colorado   | 81                            | 25                     |
| New Mexico  | 117                          | 278                    | Ohio   | 82                            | 72                     |

Notes: 1) State and Local Tax Revenue per FTE generated using IPEDS FTE enrollment figures divided by the IPEDS Finance Variables listed under "source" below. 2) Tax Capacity (not displayed in this chart but used to derive relative fiscal capacity is calculated by dividing the State's personal income total by the state's total FTE at Public Community Colleges. 3) Relative Fiscal Capacity is the personal income per FTE as a percentage of the US average. 3) Unadjusted Tax Effort (not displayed in this chart, but used to derive relative tax effort) is the ratio of State and Local Tax revenue per FTE to State's Tax Capacity. 4) State Tax Effort is presented as a percentage relative to the US Average.

Source: 1) Personal income data are for the 4th quarter of 2013. They are seasonal estimates from the Bureau of Economic Analysis, U.S. Department of Commerce. Retrieved on September 10, 2017. from <https://bea.gov/itable/itable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1> 2) State and Local Tax Revenues represent State Appropriations, Local Appropriations, State Operating Grants, Local Operating Grants, and State Grants directly to Students. FTE represents Full-Time Equivalent Enrollment. Data retrieved on October 20, 2016 from Integrated Postsecondary Education Data System found at <http://nces.ed.gov/ipeds/datacenter>. 3) Alaska and Delaware were not included in this study due to incomplete data.

## CONCLUSION

This study has illustrated the stark differences that exist between states due to enabling laws that provide significant revenue from local appropriations. While these differences are well known by experts in the field, they are not necessarily common knowledge to policy makers, social scientists, political constituents, or institutional administrators. This study was intended to inform these individuals and include information of interest to a variety of policy arenas. Further research is still needed to uncover the policy nuances associated with these stark differences, but best practices can be garnered through this studies comparative approach.

Three five-year snapshots spanning a decade were analyzed to show differences over time and to account for the funding levels prior to, during, and after Great Recession of 2008. Overall, differences still exist and those differences are stark. Local funding matters greatly. Article one shows that on average in FY2008-09, as much as \$6,908 of additional revenue per student could be had at a community college in a state with significant local funding versus a state without. Community colleges in a state with local funding provisions essentially have an entirely separate revenue stream that, in 2008-09, accounted for as much as \$4,020 in additional revenue per student. This revenue stream is not afforded to community colleges in 31 states without local funding provisions of significant value. The situation is worse at rural institutions, especially the Rural Small institutions that essentially lack economies of scale.

Illustrating student unmet financial need over the decade studied, article two suggests that the gap of unmet need closed but also that the presence of local funding made a difference in how much unmet need was covered. Unmet need still exists and averages over \$1,000 when

factoring in books and supplies. Accounting for other well-known costs such as room and board, transportation, and child care exacerbates the situation. Article two also shows that federal policy, in the form of Pell Grant increases and eligibility changes, has helped to ameliorate the differences that exist.

The third article informing policy in this study considers state fiscal capacity and the effort exerted in each state to fund their community colleges. This comparative analysis placed state and local tax revenues per community college student on a scale relative to the national average that also accounted for per capita income. This study found that just because a state has a relatively high capacity and even a high level of perceived willingness to contribute to their community colleges, does not mean that they will do so. This study also illustrates that local funding provisions do not necessarily mean that a state is appropriating a relatively adequate amount of funds to their community colleges. In essence, local funding matters but does not always make a difference.

Throughout this study of community college revenue and the disparities that exist across the different institutions and state funding laws, a common topic of discussion is how policies at the federal level have impacted community college revenue streams. Whether through Maintenance of Effort funding that greatly impacted operating budgets in 2009, 2010, and 2011; or through the unprecedented Pell Grant increases which translated to \$4.4 billion increase in revenue between 2008-09 and 2013-14, federal policy has proven to improve equitable access and funding measures. While additional funding at the federal level has certainly bolstered operating budgets, it could also be leveraged to maintain state funding similar to Maintenance of Effort provisions. Similarly, these federal dollars could and should be leveraged to ameliorate geospatial funding differences at the state level.

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