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University Budget Models, Institutional Size, and Student Outcomes

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by

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December 2020

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ABSTRACT

University Budget Models, Institutional Size, and Student Outcomes

by

James Batchelder

The purpose of the non-experimental quantitative research study was to identify if there is a

significant difference between the types of budget model an institution utilizes, institutional size,

and student enrollment, retention, and graduation rates. This study was to identify if there is

significant difference between institutional size and the type budget model utilized.

Member institutions of the American Association of State Colleges and Universities (AASCU)

were selected to participate in this study due to their similarities of mission and admissions

policy. AASCU institutions share a common mission that focuses on access, innovation, regional

support, and inclusion. AASCU institutions are all public regional institutions.

Larger institutions within the study presented significantly higher retention and graduation rates

compared to medium size institutions. I used the Carnegie classification of size as institutions

that have enrollments less than 3,000 as small, institutions that have enrollments less than 10,000

as medium, and institutions with enrollments greater than 10,000 as large. I study found no

significant difference in the types of budget model utilized and the student outcomes related to

enrollment, retention, or graduation rates. I did indicate that institutions that utilized a more

decentralized budgeting approach had higher enrollment percentages and higher retention and

graduation rates than institutions that utilized a centralized budget model. I also did not identify

any significant difference in the size of an institution and the type of budget model utilized.

DEDICATION

This is for my grandsons Luke and Jake. As a non-traditional student and a first-generation college student, I want to emphasize the importance of education to my grandsons. Horace Mann, 1848, stated, "Education, then, beyond all other devices of human origin, is the great equalizer of the conditions of men, the balance wheel of the social machinery" (Mathis, 2016). Education opens the mind to new possibilities and explores the reasons why. Why the wind blows or why trees are green and then change colors in the fall. I want them to ask why and to explore. I want them to see the world through books and then to explore it in person.

I want my grandsons to benefit from my experiences and take advantage of educational opportunities that come their way earlier in life than I did. As a non-traditional student, I have spent a great deal of my adult life in pursuit of higher education. I have been fortunate to have the opportunities to return to school to complete my studies and dreams. Access to education is a true gift and it is a gift that I hope to help you embrace. It is a privilege to be your Grandfather. I hope you never stop dreaming and never stop learning.

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Chapter 1. Introduction

A budget represents the values of an entity. A budget states, in fiscal terms, the purpose or values of the institution (Lampley, 2015). Universities operate through either a centralized, decentralized, or a hybrid budget model. The locus of control is different in each of these three budget models. The changing economic climate has caused institutions to seek ways to improve their student outcomes through many different approaches. One of these approaches is to move away from a centralized budget model to a budget model that places more responsibility on the educational unit (Curry et al., 2013).

> Across the range of diverse manifestations, decentralized budgeting in education attempts to empower fundamental unit personnel with the ability to participate in, influence, and take ownership of expense and/or revenue decisions for which they are ultimately and uniquely responsible. (Hall et al., 2003, p. 1)

Altering the level at which budget decisions are made increases the number of individuals involved in the budget process. This devolution of decision making has the potential to provide a greater diversity of thought in the decision process (Kosten, 2009).

The three main approaches to budgeting and decision making are centralized, decentralized, and hybrid budget models (Barr & McCellan, 2011). Centralized budgeting is a top-down budgeting approach (Curry et al., 2013). Decentralized models expand budget control beyond expenditure control to allow units to control and impact revenue sources and control surplus revenues (Hall et al., 2003). Responsibility Center Management (RCM) is the purest form of a decentralized budget model and incremental budgeting is the most common centralized budget model. Hybrid models incorporate aspects of both decentralized and centralized models (Curry et al., 2013).

Rylee (2011) showed that institutional size can influence the locus of control. For example, smaller institutions can control personnel positions easier in response to budget issues (Rylee, 2011). Smaller institutions are well suited for a centralized budget model and most employ an incremental budgeting approach, but as institutions increase in size so does the complexity of operating the institution and the ability to understand each college or program becomes more difficult (Szatmary, 2011; Whalen, 1991). Decentralized budget models appear to be well suited for larger institutions that are diverse in nature (Szatmary, 2011; Whalen, 1991). Carnegie classification is a measure of size and identifies institutions that have enrollments less than 3,000 as small, institutions that have enrollments less than 10,000 as medium, and institutions with enrollments greater than 10,000 as large ("Carnegie Classifications, Size & Setting Classification," n.d.).

The most recognized decentralized budget model is RCM, in which, revenue ownership is devolved to the unit as well as direct and indirect costs. Subvention is used as a form of support for institutional mission (Curry et al., 2013). A hybrid model is a mixture of centralized and decentralized methods that are utilized to develop and manage budgets.

The competition for funding complicates the budget process. Competition for students and the cost to recruit students is ever increasing, as is the cost to support students on campus with technology (Barr & McClellan, 2011). Bryan Alexander said "The historical fact is that America grew higher education enrollment for a generation, from 1980 to 2012. That was a great achievement. But 2012 was the peak, and we've fallen away from it every year – every semester, in fact" (Lorenzo, 2020). There are fewer students entering college and increasing the competition between institutions. As the pressure on budgets grow, institutions look for ways to manage that pressure.

Barr and McCellan (2011) indicated there is competition for funding that comes from multiple layers. The layers include the increased cost of compliance to federal and state regulations, the increased cost of technology, and the cost of maintaining or replacing aging infrastructure. As state and federal funding have decreased institutions have been competing for philanthropic dollars at an even greater pace. Zumeta et al. (2012) also indicated that the growth in for-profit institutions has increased the competition for students and has taken market share from the traditional public and private institutions. All these factors increase an institution's need to find ways to manage budgets that will improve student outcomes.

Academic Deans in higher education "preside over colleges, schools, or divisions, such as arts and sciences, business, education, engineering, music, fine arts, … and health sciences" (Tucker & Bryan, 1991, p. x). Academic Deans have traditionally been the chief academic officer for a college, now they are ultimately chief executive officers as well. What once was a scholarly endeavor has become a business, finance, and human resource management position as well (Kosten, 2009). In 1991, Tucker and Bryan noted:

> There are times when the dean must be the dove of peace, intervening among warring factions that are causing an unacceptable level of turbulence in the college. Academicians can fight among themselves with an almost religious zeal, … It is the duty of the deans to see that departments and programs under their jurisdiction are enriched, not improvised … Sometimes deans must be dragons and drive away internal or external forces that threaten the value system, the financial health, or the integrity of their academic units … sometimes only a dragon can conquer them … External criticisms of the academic community are often just as fierce and unrelenting as those internal ones. Only a diplomat

can guide, inspire, and encourage the people who live and work in such an environment.

(p. ix)

In the budget process, a dean wears two hats, spender and cutter (Meisinger, 1994). A dean must seek appropriate resources for his different programs but also must manage current resources through reallocations. This can be a balancing act between where to cut resources and where to spend resources. Wilhelm (2019) specified that Deans need to be entrepreneurial to increase revenues while cutting costs and at the same time preserve the core vision and mission of their institution. Curry et al. (2013) indicated, "RCM's alignment of financial accountability with revenue ownership simply highlights an institution's internal economy better to enable entrepreneurship and enhance both local and central decision-making" (p. 9). One dean exclaimed "Power. I have never had such power. I've been in charge of large federal agencies and served as a dean at other schools, but this kind of discretion has not been available to me. It's almost scary" in reference to working in an RCM budget model (Whalen, 1991, p. 144).

Deans in a decentralized budget model have both responsibility and accountability for their budgets and look for entrepreneurial opportunities to enhance their college's success (Kosten, 2009). Deans in a decentralized budget model are empowered to manage their domain. Strauss and Curry (2002) wrote "People play better games when they own the rules" (p. 8). Diep (2020) reported that the University of Florida, because the wanted to move up in the rankings, lobbied the Governor to reward institutions in Florida based on *U.S. News and World Report's* college ranking metrics. They owned the rules and received $61.9 million in additional state funding between 2013 and 2018. In addition, accountability and empowerment bring a greater number of people into the arena of leading and managing the institution (Kosten, 2009). Politics played an important part in the centralized budget process, but in a decentralized budget model,

there is a shift to a more rational process that is supported by formulas and revenue generation (Cekic, 2010).

 With federal and state support for higher education declining, institutions are struggling to find ways to manage in the new paradigm of declining federal and state support. There have been significant reductions in state and federal support due to the recession of 2008-2009. Dumestre (2018) indicates that higher education is transitioning from being a "common good to a private good," where students are responsible for the majority of tuition costs. Alaska Governor Mike Dunleavy observed:

> The university is a bad investment for the state because of low retention and graduation rates. On the Fairbanks campus, the six-year graduation rate is 39.2 percent. At Anchorage, its 24.9 percent, and at Southeast, it's 19 percent. Retention rates for first-year students are 64 to 75 percent. Nationally, the average six-year graduation rate at public universities is 60 percent, and the average retention rate at institutions with open-enrollment policies is 62 percent. (Brown, 2019, p. 4)

 Research has worked to advance scholarship concerning how budgets or institutional size affect or do not affect student outcomes including enrollment, retention, and graduation rates. If a significant difference can be established that one budget model can improve student outcomes more than another budget model, this information can assist institutions in decision making about budget modeling. If no significant difference is identified institutions may find it advisable not to alter their budget model, but to seek other more effective ways to improve student outcomes. If the size of an institution has a significant difference on enrollment, retention, and graduation rates, this may indicate the need for additional review of the impact of institutional size on these measures of successful outcomes.

Enrollment, retention, and graduation rates are the lifeblood of higher education. Institutions must be responsible and accountable for budget development in order to be successful. They need to be successful in identifying budgeting strategies that can assist in moving institutions forward.

This study examined institutions that are members of the America Association of State Colleges and Universities (AASCU). AASCU institutions are regional public institutions embracing similar institutional missions and demographics. It identified 259 institutions that are members of the AASCU and were considered for inclusion in this study (see Appendix A) and includes as many of the 259 institutions that completed a census (see Appendix B) to determine the institution's budget model. I also included institutions with an identified budget model and that had complete Integrated Postsecondary Educational Data System (IPEDS) data for the research criteria included in the present study for academic years 2009-2018. To aid in the completion of the census I emailed a letter (see Appendix C) and a link to the electronic version of the census. I made follow up phone calls to the Chief Financial Officer(s) to ask for their participation. The study included institutions that identified as having a centralized and hybrid budget models in the present study. There were more than 20 respondents in each of these budget model categories. There were less than 20 respondents indicating the use of a fully decentralized model. I also analyzed how the size of an institution influenced the choice of budget model implemented and if institutional size affects the student outcomes included in the present study.

Statement of the Problem

The purpose of this non-experimental quantitative study is to determine if there is a significant difference between the type of budget model an institution utilizes and student enrollment, retention, and graduation rate. This study intended to determine if there is a difference between the size of an institution and the type of budget model an institution utilizes. This study intended to determine if there is a significant difference between the size of an institution and student enrollment, retention, and graduation rate. Archival data from the IPEDS database was used as the primary source of my data. A census was administered to determine the type of budget model an institution is utilizing. The census asked the Chief Financial Officers at institutions to select the budget model that reflects their institution's budget model for the academic period under consideration. By examining IPEDS' enrollment, retention, and graduation data and identifying the institution's budget model the significance or lack of significance may be determined. The evaluation of enrollment included degree/certificate-seeking first-time undergraduate student enrollment, transfer-in undergraduate student enrollment, and continuing undergraduate enrollment. This evaluation was based on the percentage of first-time undergraduate enrollment, transfer-in undergraduate enrollment to total undergraduate enrollment, and continuing undergraduate enrollment. The evaluation of retention included first to second-year retention rates of full-time degree-seeking undergraduates. Graduation rates were evaluated based on full-time, first-time**,** degree/certificate-seeking undergraduates within 150% of normal time to program completion, the six-year graduation rate.

Research Questions

The researcher addressed several research questions to determine the difference(s) between a budget model and institutional size and student outcomes. For the purpose of this study fall to fall retention rates are being utilized.

1. Is there a significant difference in the percentage of first-time degree/certificate-seeking undergraduate enrollment between institutions using centralized and hybrid budget models?

2. Is there a significant difference in the percentage of transfer-in undergraduate enrollment between institutions using centralized and hybrid budget models?

3. Is there a significant difference in the retention rate for all continuing undergraduate enrollment between institutions using centralized and hybrid budget models?

4. Is there a significant difference in the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment between institutions using centralized and hybrid budget models?

5. Is there a significant difference between the size (medium and large) of an institution and the type of budget model utilized?

6. Is there a significant difference in the percentage of first-time degree/certificate-seeking undergraduate enrollment between medium and large size institutions

7. Is there a significant difference in the percentage of transfer-in undergraduate enrollment between medium and large size institutions?

8. Is there a significant difference in the retention rate for all continuing undergraduate enrollment between medium and large size institutions?

9. Is there a significant difference in the six-year graduation rate of full-time, first-time**,** degree/certificate-seeking undergraduate enrollment between medium and large size institutions?

Significance of the Study

As federal and state support for higher education is decreasing and institutions are relying heavily on tuition and fees, philanthropy, and other external sources of funding to continue the operations of the institution, many are looking at new budget models for sustainability. Higher education administrators, faculty, and staff seeking avenues to improve student outcomes and budget management will potentially be interested in the research findings. Changing to a new budget model is complex and can have significant implications on the financial health of an organization. It is important to understand if a new model will have the desired effects that an institution is seeking. Enrollment, retention, and graduation rates are universally acceptable outcomes for measuring institutional success. This study seeks to identify if there is any significant difference between these student outcomes based on the type of budget model utilized or the size of an institution.

Limitations and Delimitations

Limitations of this study include assumptions that the researcher may have made concerning connections between budget models and student outcomes having a quantifiable difference. Another limitation is the assumption that data is normally distributed, if the data is not normally distributed the findings may be skewed. Another limitation is the ability of the

analysis to statistically detect a significant difference. Another limitation is the representations made by the participants concerning the budget model utilized at their institution. Budget models identified may or may not be accurate. One final limitation is the degree to which the results are generalizable to the overall population.

This study is delimited to institutions that are members of the American Association of State Colleges and Universities. It is assumed that IPEDS data is reliable and reported consistently by the institutions included in the study. The analysis chosen for the study is another delimitation. The study is delimited to student outcomes: enrollment, retention rate of continuing undergraduates, and graduation rate.

Definitions of Terms

Defining terms is a crucial safeguard to a shared understanding of the key ideas and terminology between the author and the reader. The following terms are critical to an appropriate understanding of this research.

1. Centralized Budget Model: Budget model in which decisions are made centrally allowing stringent control and management of the budget and budget process for congruence with the institution's strategic plan. (Barr & McCellan, 2011)

2. Continuing Undergraduate Student: A student who was enrolled at the institution in the previous term or in the previous spring term if the current term is fall. ("FAQ and Glossary," 2019)

3. Decentralized Budget Model: Budget model in which decisions are made at the unit level and flow up from the unit to the central administration. Units have control and responsibility for revenues and expenses. (Barr & McCellan, 2011)

4. Enrollment: The unduplicated headcount for the total number of students by gender, race/ethnicity, and level (undergraduate, graduate, first professional) enrolled throughout the reporting period. ("2019-20 Survey Materials," n.d.)

5. Graduation Rate: Percentage of students entering the institution as full-time, first-time, degree/certificate-seeking undergraduate students in a particular year and completing their program within 150 percent of normal time to completion; the number that transfers to other institutions if transfer is part of the institution's mission. ("2019-20 Survey Materials," n.d.)

6. Hybrid Budget Model: Budget model in which attributes of both centralized and decentralized budget models are incorporated. Budget guidelines are provided from the central administration to direct the budget process at the unit level. (Barr & McCellan, 2011)

7. Retention Rate: A measure of the rate at which students persist in their educational program at an institution, expressed as a percentage. For four-year institutions, this is the percentage of first-time bachelors (or equivalent) degree-seeking undergraduates from the previous fall who are again enrolled in the current fall. For all other institutions, this is the percentage of first-time degree/certificate-seeking students from the previous fall who either re-enrolled or successfully completed their program by the current fall. ("2019-20 Survey Materials," n.d.)

Overview of the Study

       This is a non-experimental quantitative study presented here in five chapters. Chapter 1 is an introduction to the study and includes a brief introduction, statement of the problem, research questions, limitations and delimitations, and an overview of the study. Chapter 2 is a literature review that includes student success, the rationale for different budget models, budget allocations, the role of the dean, and accountability and empowerment. Chapter 3 is a description of the study including design, the population, data collection, and data analysis. Chapter 4 is a presentation of the data collected related to the research questions. Chapter 5 contains a summary of the findings from the study, the conclusions, and recommendations for future research and for current practice and policy.

Chapter 2. Review of Literature

Research estimates that "four-fifths of high school graduates will need some form of postsecondary education to acquire the knowledge, skills, and competencies necessary to address the complex social, economic, and political issues they will face" (Kuh et al., 2005, p. 8). The need for postsecondary education correlates with the mission of postsecondary institutions, to provide educational opportunity and access to a community, region, country, or the world. With this common theme, student success should be very high. However, this is not the current reality. Historically, college graduation rates have lingered around 50% and at some institutions, less than one-third of the full-time first-time freshman will graduate in six years (Kuh et al., 2005). Complete College America (CCA) indicates that only 19% of students graduating with a bachelor's degree complete their degree in four years (Complete College America, n.d.). Low completion rates continue to plague at-risk populations, and this limits their social mobility. As a country, the United States is near the bottom of the rankings of the developed world in educational attainment (Cruz, 2016). Institutions are striving to find ways to improve student success.

Efforts to improve student success are not localized at the institutional level but may reside at the state level. Currently, there appears to be a strain between institutions of higher education and society. Because of this strain governments have started to consider education from a cost-benefit perspective and are funding institutions based on outcome-based models (Donald, 1997). In the United States, some states have implemented funding models based on performance outcomes. Tennessee was one of the first states to implement a performance-based outcome program in 1979 (Lampley, 2015). Obergfell (2018) reported that 36 states now have

adopted or endorsed a performance-based funding model. The effectiveness of state

performance-based funding models is being questioned. Fain (2017) wrote that "two new studies

add to a growing amount of research that indicates the policies may not work or have unintended

consequences, with some of those problems being linked to design flaws" (para. 3). Labi (2015)

indicated that outcome-based funding models assist in student outcomes. Institutions understand

the outcome-based formula and build programming to assist students based on student needs.

The alignment of the institutional budget with the state's funding model provides motivation for

institutional or even programmatic change. Institutions of higher education are asked to improve

quality, increase completion rates, increase access, increase the knowledge base, produce

workforce-ready graduates in fields that meet their state's needs, and better serve the community

while keeping cost low for students and the state (Cruz, 2016). These efforts emphasize the

importance of student success and that institutions will need to be the key drivers to increase

student success. Budget development and management at the institutional level can influence this

success.

Student Success

White (2016) suggested that the rekindled American focus on student success is a

recognition that our institutions of higher education are not delivering on their promise to

students. One measure of student success is the completion rate. Student success consists of

retention and completion that includes academic achievement and advancement to employment

or advanced education (Cuseo, n.d.). Bailey (2017) specified that, in order to make institution-

wide increases in student completion rates three components of reform will need to be evident:

student outcomes that are measurable, an evidence-based culture, and intentional design of cohesive program components.

The six-year completion rate is a key indicator of student success. For the fall 2012 cohort of first-time degree-seeking students at two-year and four-year institutions the overall completion rate was 58.31%, this is an increase of 4.24% over the fall 2006 cohort (National Student Clearinghouse Research Center, 2018, p. 10). Manning et al. (2013) showed that there is great pressure for institutions to increase graduation rates. Manning et al. also wrote that states have placed incentives for institutions to increase graduation rates and that the Obama administration set a goal for the United States to proportionally lead the world in the number of graduates. Another measure of student success is the full-time retention rate. The full-time retention rate is the percentage of full-time first-time students who are enrolled in the current fall semester and were enrolled in the previous fall semester. In 2017, the fall retention rate was 75.4% based on 5,468 reporting institutions. The retention rate has been on a slight increase over the last 10 years: in 2007 the fall retention rate was 71.1% (IPEDS, n.d.).

Student Success: Factors beyond institutional control

Lampley (2015) identified that there are factors outside the control of institutions that contribute heavily to individual student success. Literature has identified four common areas that contribute to student success that are individualistic in nature: cognitive and non-cognitive variables, co-curricular activities, and family backgrounds. For example, Martin et al. (2014) identified that students that are motivated, set clear goals, feel in control, and that cope with their external demands can succeed even if they are underprepared for college. Co-curricular activities like having to work on or off-campus can have detrimental effects on student success. Students

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who work 15 hours or less a week tend to earn higher grades than students who work more than 15 hours a week (Sherman, 2018). Sherman also wrote that lower-income students have less opportunity for higher paying jobs and internships compared to higher-income students. Martin et al. (2014) specified that students who have set clear goals and are highly motivated do not conform to the norm of social integration that Tinto (1975) established. These students do not need interactions outside the classroom to succeed. When examining student success, it is important to remember that attributes of the individual student can influence success and that these attributes are outside institutional control (Boden, 2011). Institutions that attract a higher percentage of students that possess the four common attributes highlighted above may have higher student outcomes than other institutions (Martin et al., 2014).

Performance Funding and Student Success

Rutherford and Rabovsky (2014) used a national data set over a ten-year period to evaluate performance funding on completion and retention rates. These researchers found that graduation rates declined in conjunction with the implementation of performance funding. Rutherford and Rabovsky also found that performance funding had a similar effect on retention. Tennessee's long history with performance funding has not yielded significant improvements in student outcomes (Sanford & Hunter, 2011). Wright (2016) indicated in the context of Tennessee's performance funding model that the state-level focus should be on the *what* not the *how*. Institutions need to have an incentive to improve student outcomes, but the institution needs to be free to take ownership of the process and to make their own innovations for campus success.

Institutional Advising Efforts

Soria et al. (2017) examined how student strength assessment and advising can improve retention, student engagement, and graduation rates. The researchers built their study off the work of the Clifton *StrengthsFinder* assessment. The S*trengthsFinder* assessment consisted of two phases. Phase One dealt with a student survey and Phase Two with the perspective of advisors. Results of Phase One of this study pertained to the student outcomes. Phase One showed that students who engaged in conversations with their advisor about their strengths were 1.53 times more likely to enroll in their second year of college. Phase One also indicated that these students were 1.9 times more likely to graduate in four years than their counterparts who did not participate in strength-based discussions in their first year of college. According to Soria et al., institutions can utilize advising techniques to affect retention, progression, and graduation.

Kincanon (2009) correlated academic advising to a music genre called *mashup*. Mashup is the mixing of "two or more existing songs together to create a new song" (para. 1). Kincanon wrote that through the splicing of multiple pieces of different songs Greg Gillis creates new music, academic advisors can mashup to customize a student's experience. Kincanon examined Baxter Magolda and King's 2008 theory of self-authorship and wrote how "Academic advising is a key venue through which educators can assist students through this transformation" (para. 4). Student life is a critical aspect of the college experience. Redmond et al. indicated students "were more likely to withdraw for social reasons, external to the university environment" (2011, p. 11). Addressing the backlog in the counseling center is critical to maintaining a healthy learning environment. The more engaged advisors can be in understanding the student's experience the better the outcome of success for the student.

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Advising students to complete 15 credits a semester is also an effective approach to increase student retention and completion. Research has shown that students who enroll for at least 15 credits per semester earn higher GPAs and are more likely to persist in their enrollment than those taking fewer courses, and yet, whether it's a two-year or four-year school, the majority of students complete fewer than 30 credits per year. (Nietzel, 2019, para. 3)

The University of Hawaii at Mānoa (2016) highlights a greater retention rate for the fall of 2015 for first-time freshman. The system-wide retention rate for first-time freshman taking 15 or more credit hours is almost 4% more than students taking 12 to 14.5 credit hours and over 24% more when compared to students taking less than 12 hours (University of Hawaii, 2016). The University of Hawaii system has implemented the 15 to Finish program (Complete College America, 2018).

Student Engagement at the Institutional Level

Swanbrow Becker et al. (2017) researched the mental well-being of first-generation college students. Most of the current research tends to be centered on the academic outcomes of first-generation students. This research is focused on first-generation students who participated in an academic enrichment program called GenOne. GenOne uses a summer bridge program to orient first-generation college students to the university and the community. This summer bridge program lasts two months during which participants take college courses, log study time in a dedicated study lab, and live in university housing. These activities expose the participants to a new level of academic rigor and afforded them the opportunity to improve study habits that could increase their capacity to handle these new academic challenges. Living in university housing with the other participants allows the sense of community to develop and the formation

of close relationships. This research found that participants in GenOne felt supported in mental well-being by, "(a) feel cared for, (b) develop a sense of belonging within both GenOne and the broader university community, (c) prevent stressful situations from becoming overwhelming, (d) remediate distress that materialized, and (e) become resilient when faced with obstacles" (p. 1171). Students indicated that they felt cared for because of the time that was spent with them, because they were chosen for the project, and because of the relationships they formed. Students felt the sense of belonging due to the home and family feeling of the GenOne project and social media and other apps increased the feeling of connection. Stress was reduced by the availability of resources, increased skills in time management and goal setting, and increased preparation to handle life challenges. Lowering distress was also communicated as a benefit. Students also indicated that the program fosters resilience by building confidence, learning experiences, and through lessons in autonomy. Bridge programming can assist in acclimating first-generation students to college and thereby increase student success.

Focusing on first-year students can help increase retention in the population that is most at risk. First-year seminars that are designed to help the learner learn are effective programs. Guiding students to take courses that are from areas of interest can allow the students to gain early academic success and allow them to have confidence during this transition to a new academic environment (Donald, 1997; Pascarella et al., 1986). Mitchell and King wrote that "Good student life programs nurture and sustain a sense of campus community" (2018, p. 88). "For most students entering college, embarking on this new chapter is a time of great stress," a freshman seminar can help to alleviate some of the stress associated with college life (Swanbrow Becker et al., 2017, p. 1166).

Chickering and Gamson (1987) identified seven principles for a good learning and teaching environment. These principles require action and commitment from both instructors and students. Chickering and Gamson suggested that a good teaching and learning environment includes: faculty and student contact, increased cooperation and reciprocity among students, active learning, prompt feedback, stressed time on task, contained high expectations, and values the diversity of talents and learning processes. Collaco (2017) suggested that student engagement is important to student success. Furthermore, Collaco showed that students that are engaged have greater learning and that good teaching methods increase student engagement. Collaco's research concurs with the research of Chickering and Gamson (1987) and the seven principles of good teaching they outlined. Bryson and Hand (2007) found that student engagement is critical to improving student learning and autonomy. Engagement behaviors "are characterized by being active, e.g. participation by asking questions or collaborative work with other students" (p. 352). "Because students relate to one another as peers, they can often communicate more effectively than the instructor in class" (Christensen & Eyring, 2011, p. 162). Christensen and Eyring also showed that the entire being of the student must be engaged to allow the student to receive an understanding on multiple levels. Institutions can affect the teaching and learning environment in ways that affect student outcomes.

Project DEEP (Documenting Effective Educational Practice) was a collaborative effort of the National Survey of Student Engagement (NSSE) and the American Association for Higher Education (AAHE) that sought to identify practices of institutions that had graduation rates that were better than expected (NSSE, n.d.). This project included 20 diverse institutions (NSSE, n.d.). The primary common themes that were identified are: focused and clear institutional mission, high student performance standards, provisions for student exploration of self and

human differences, attention to the first year of study with an emphasis on the first months, values the diversity of talents, inclusion of previous experience and learning, active learning, feedback that includes assessment, collaborative student learning, sufficient time on task, and contact with faculty outside the classroom (Kuh et al., 2005). These findings are similar to the seven principles identified by Chickering and Gamson (1987) and Collaco (2017). Student learning outcomes are affected at the student level. Institutions are better equipped to identify the different levels at which the student environment or learning experience can be enhanced. Student success is an individual and institutional effort.

Budget Allocations on Student Success

Hamrick et al. (2004) found that increased budget allocations for instruction and academic support, including libraries, can contribute to an increase in completion rates. Ryan's 2004 study concurs with the study by Hamrick et al. Ryan found that a one percent increase in instructional expenditures could yield a quarter of a percent in graduation rate for the cohort. Lampley (2015) found increased funding for academic support had a positive correlation with degree completion, but that increased funding in other areas did not provide positive correlations. Barton (2011) wrote there does not appear to be one approach to budgeting that is better than another to influence student outcomes.

Budgets as a Management Tool

Budgeting in higher education is no small endeavor. In 2015-16, the total postsecondary revenue at degree-granting institutions in the United States was $564 billion (NCES, n.d.). Institutions of higher education began the budgeting process in the late 1800s (Cekic, 2010). Barr and McClellan (2011) indicate that a budget "is a plan for getting and spending money to reach specific goals by a specific time" (p. 55). Meisinger (1994) wrote "resources will always be insufficient to meet existing demands: therefore, a budget becomes a mechanism for setting priorities" (p. 1). According to Christensen & Eyring (2011), Gordon Gee, when the president of Ohio State University, stated:

> When times are flush, we are apt to spread the wealth around like marmalade. But when resources are tight, our hand is forced, and we must make real, strategic decisions about academic direction, about programs for investment and disinvestment, and about how we meet today's enormous challenges. We must finally learn to say "no," a word rarely used in higher education. (pp. 204-205)

Budgets represent the values of an entity. Management of an institution's budget is the management of that entity's values represented in fiscal terms. Budgets link human behavior to financial resources in order to reach institutional objectives (Wildavsky, 1988).

Institutions have strategic plans that outline the mission and vision of the institution. The institutional budget is the road map to accomplish the mission and vision of the institution. Salluzzo (1999) wrote "Properly executed, the budget represents the implementation of the strategic plan over a shorter time horizon" (p. 62). Strategic planning is a long-term effort and budgets are a short-term annually based effort to meet the long-term objectives of the strategic plan.

A budget has two basic purposes. The first is to allocate resources in a logical, predictable, and efficient manner and the second is to provide a system to guide or incentivize the decisions or activities of faculty and administrators (Salluzzo, 1999). Properly aligning resources can deliver positive outcomes. Schloss and Cragg (2013) highlighted that positive outcomes associated with appropriately aligned resource allocations; the supported curriculum will help meet institutional goals, learning outcomes will be reflective of stakeholder needs and the curriculum, and improved outcomes will be responsive to the knowledge and skill levels needed by students who graduate. "Developing a budget is both an art and a science. Since there are never enough resources to satisfy every institutional need, a budget helps set and communicate institutional priorities within the limited resources available" (Paulsen & Smart, 2001, p. 501).

Factors Influencing Budgets

Multiple factors influence budget formation in higher education. These influences come from external and internal sources. External factors include federal and state policies, the economy, federal and state funding, and competition. Internal factors include the history of the institution, the institutional mission, and the size of the institution.

Political Influences

State funding has a significant impact on the budget process at public institutions. The politics involved at the state level determine the focus of state appropriations. Performance-based funding has been adopted by many states even though the research is not indicating that student

success is increasing in these states (Fain, 2017). Federal student financial aid support and policy have an indirect effect on institutional budgets (Paulsen & Smart, 2001). The cost of compliance with federal and state regulations continually drives up the cost of doing business in higher education (Barr & McCellan, 2011).

Economic Influences

The economy influences what is happening within institutions. State and federal funding are tied to tax revenues, so in strong economies funding from state or federal sources tends to increase and in weak economies, the opposite happens, and funding is reduced. Funding reductions may not be directly related to the institution but maybe reductions in student aid, thus reducing the number of students able to attend or the need for institutions to increase the amount of institutional aid that is available (Paulsen & Smart, 2001). Also, there is greater competition for all levels of funding. This competition includes competing for research dollars and philanthropic support (Barr & McCellan, 2011).

Competition

Competition in higher education comes in many different forms. In states with performance-based funding models, institutions compete based on the performance-based formula. The state funding pools for performance-based models are usually relatively static; so, institutions that perform better than their sister institutions tend to pull funding from the lower producing institutions (Fain, 2017). Competition for student enrollment affects how institutions attract students. Traditional public and private institutions now must compete with for-profit

institutions for students (Zumeta et al., 2012). Competing for students drives up enrollment costs and impacts budget development and implementation.

Internal Influences

Internal institutional factors can impact budget formation and these factors include institutional mission, characteristics of the student body, financial health, governance structure, athletic investments, age of the institution and facilities, institutional size, and the institution's location. Governance can be oversight by a system, a local board, or a combination of both a system and local board. The poor financial health of an institution can impact its ability to budget beyond basic operations. Good financial health can allow institutions to strategically look for growth opportunities. Older institutions generally have aging buildings that drive up capital maintenance costs and the campus location may impede growth agendas if the institution is land locked. Investment in athletics at smaller institutions can be a drain on resources and at larger institutions can be a source of revenue (Lasher & Sullivan, 2004).

Faculty and staff are the institution, not the facilities or the grounds. Mitchell and King (2018) indicated that "While facilities (e.g., libraries and laboratories) are important, they are not as important as the faculty and academic staff" (p. 69). Meisinger (1994) also wrote that "Across-the-board salary increases help to maintain the real income of the entire group" (p. 18). Maintaining appropriate support of the faculty and staff is critical to morale and retention. Barr and McCellan (2011) also indicate that there is increased competition for faculty and staff in not just the higher education sector but in all employment sectors. Costs to retain and attract faculty and staff have a considerable impact on budgeting. Williams (2018) highlighted that retention of faculty for 20 plus years is not seen as a long-term investment that adds more to the

accomplishment of the university mission than a capital improvement project like the paving of a parking lot which is seen from an accounting perspective as a long-term asset. Capital projects and assets are necessary for the basic functions of an institution, but the investment in human capital is also critical in higher education.

Types of Institutional Budget Models

Centralized Budget Models

Funding models within institutions of higher education fit into one of three categories; centralized, decentralized, or hybrid budget models (Barr & McCellan, 2011). From the beginning of higher education in the United States, centralized budget models have been the traditional type of budget control (Salluzzo, 1999). Curry et al. (2013) wrote that incremental budgeting is the most prevalent type of centralized budgeting and that it is a top-down budgeting approach. Smaller institutions still tend to use centralized budget models. Zero-based budgeting is another centralized budgeting approach that requires units to annually justify their budgets starting at zero (Birnbaum, 2000). The development of a budget in a centralized model starts at the top and filters down to colleges and units. Central administration usually requests more information from colleges and units than it needs, and central administration usually does not provide all the necessary feedback that a subordinate unit needs (Paulsen & Smart, 2001). This creates an imbalance in information flow and is inefficient.

Centralized budget models have more stringent controls and allow less flexibility and transparency. Centralized decisions that are not congruent with the values of departments or units are more difficult to implement (Zabojnik, 2002). Centralized budget models are simpler to

administer (Curry et al., 2013). As institutions grow in size they also grow in complexity. The ability for the institutional administration to comprehend or manage colleges and departments centrally becomes increasingly more difficult as institutions become larger and programming becomes more diverse. Kretovics (2011) wrote that "a highly centralized approach to budgeting does not encourage sound fiscal management within individual units" (p. 84). Units are incentivized to increase their portion of the resource pie and not to consider the whole institution.

Decentralized Budget Models

Whalen (1991) suggested that decentralized budget models are a good fit for larger more diverse institutions. Curry et al. (2013) indicated that Responsibility Centered Management (RCM) is the best recognized of the decentralized budget models. In a decentralized model revenue and expense ownership is devolved to a college or unit. A method of subvention is used to support institutional mission. Kaludis (1973), speaking of a decentralized budget model versus a centralized budget model indicated, "In sum, an over-simplified, monolithic, periodic, unresponsive, and secretive budget system is a vestige of the past. A comprehensive, pluralistic, continuous, responsive, and openly straight-forward system is where we need to move-now!" (p. 101). As institutions are asked to meet their missions with less funding, accountability and control are being decentralized. Mid-level managers, academic deans, and unit managers have budget authority and control. This devolution of control coupled with an awareness of state objectives can increase student success (Kosten, 2016). Jaquette et al. (2018) found that, at the four institutions they studied, RCM did not influence tuition revenue.

The ability to be competitive in the long-term requires focused investments that will increase the value and quality of educational programs. These focused investments are in

material and human capital within decentralized budget models allow this type of investment strategy (Bava, 2001). Deans and unit managers must manage revenues, spending, and cost reductions (Meisinger, 1994). Dave Checketts, former president and CEO of Madison Square Garden, said, "I believe people will do much more with their bad idea than they will with your good idea" (Zabojnik, 2002, p. 1).

Decentralized models bring a more diverse population into budget development and management of the institutional budget (Kosten, 2009). Decentralized models expand control beyond expenditures, control over revenue allows units to act more strategically (Hall et al., 2003). Increased participation and diversity broaden budget discussions. Decentralized budget models allow greater flexibility and promote greater transparency. Curry et al. (2013) cited increased transparency as possibly the greatest benefit of a decentralized model. Curry et al. recognized that there is tension between academic units and administration that can be relieved by increased transparency. Research also indicates that central leadership still needs to maintain enough fiscal control to ensure an institutional balance between programs, the ability to address stakeholder initiatives, and the ability to achieve institutional goals (Bava, 2001).

Hybrid Budget Models

Hybrid models are budget models that incorporate attributes of both the centralized and decentralized budget models. An example of a hybrid model is a formula-based funding model. These models still have a strong central influence but push funding to units based on some weighted outcome(s) (Curry et al., 2013). Barr and McClellan (2011) stated that a single budget model is not sufficient to meet the ever-changing landscape in higher education. This variability in budgeting needs has caused institutions to develop hybrid budget models that fit an institutions

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specific need. Using a blended approach to budgeting has become more attractive (Barr &

McClellan, 2011, p. 77).

Chapter Summary

Barr and Turner (2013) explored the effects of the Great Recession on higher education,

finding that enrollments increased during the recession at institutions that had the greatest

elasticity to meet the demand; open-access public institutions, for-profit institutions, and

community colleges (Barr & Turner, 2013). These enrollment growths have since leveled and

even retreated. However, another effect of the Great Recession that Barr and Turner (2013)

identified was the decline in funding by state governments for higher education. This decline has

led to a dramatic shift in who pays for higher education. According to Webber (2016), the cause

of the shift in cost to students bearing more of the burden of paying for higher education at

public institutions is the decrease in state support for higher education. Barr and McClellan

(2011) indicated that resources are sparse and that the budgeting process allows an institution to

focus on immediate needs and the most impactful goals.

Chapter 3: Research Methodology

This chapter includes the methodology and research design for this study and it also includes the Research Questions and null Hypotheses, the instrumentation utilized, the population, the data collection, and the data analysis. The researcher used a non-experimental quantitative research methodology that included multivariate correlations to analyze the secondary data. McMillan and Schumacher (2014) indicated that correlation research is "research in which information on at least two variables is collected for each subject in order to investigate the relationship between the variables" (p. 2).

The purpose of the quantitative study was to determine if there is a significant difference between the budget model an institution utilizes and/or institutional size and corresponding student enrollment, retention, and graduation rates. By examining IPEDS enrollment, retention, and graduation data, and identifying institutions' budget model, the significance or lack of significance may be determined. The evaluation of enrollment will include freshman enrollment and transfer student enrollment. The evaluation of retention will include the transitions between first to second-year full-time degree-seeking undergraduate enrollment and continuing undergraduate enrollment. The evaluation of graduation will include full-time, first-time, degree/certificate-seeking undergraduates within 150% of normal time to program completion, the six-year graduation rate.

Research Questions and Null Hypotheses

The researcher addressed several research questions to determine the difference(s) between the budget model and institutional size and student outcomes.

Research Question 1: Is there a significant difference in the percentage of first-time degree/certificate-seeking undergraduate enrollment between institutions using centralized and hybrid budget models?

H_01: There is no significant difference in the percentage of first-time degree/certificate-seeking undergraduate enrollment between institutions using centralized and hybrid budget models.

Research Question 2: Is there a significant difference in the percentage of transfer-in undergraduate enrollment between institutions using centralized and hybrid budget models?

H_02: There is no significant difference in the percentage of transfer-in undergraduate enrollment between institutions using centralized and hybrid budget models.

Research Question 3: Is there a significant difference in the retention rate for all continuing undergraduate enrollment between institutions using centralized and hybrid budget models?

H_03: There is no significant difference in the retention rate for all continuing undergraduate enrollment between institutions using centralized and hybrid budget models.

Research Question 4: Is there a significant difference in the six-year graduation rate of full-time, first-time**,** degree/certificate-seeking undergraduate enrollment between institutions using centralized and hybrid budget models?

H_04: There is no significant difference in the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment between institutions using centralized and hybrid budget models.

Research Question 5: Is there a significant difference between the size (medium and large) of an institution and the type of budget model used?

H_05: There a significant difference between the size (medium and large) of an institution and the type of budget model used.

Research Question 6: Is there a significant difference in the percentage of first-time degree/certificate-seeking undergraduate enrollment between medium and large size institutions?

H_06: There is no significant difference in the percentage of first-time degree/certificate-seeking undergraduate enrollment between medium and large size institutions.

Research Question 7: Is there a significant difference in the percentage of transfer-in undergraduate enrollment between medium and large size institutions?

H_07: There is no significant difference in the percentage of transfer-in undergraduate enrollment between medium and large size institutions.

Research Question 8: Is there a significant difference in the retention rate for all continuing undergraduate enrollment between medium and large size institutions?

H_08: There is no significant difference in the retention rate for all continuing undergraduate enrollment between medium and large size institutions.

Research Question 9: Is there a significant difference in the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment and the size of total enrollment between medium and large size institutions?

$H_0$9: There is no significant difference in the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment between medium and large size institutions.

Population and Sample

Each institution included in the study are members of the America Association of State Colleges and Universities (AASCU). AASCU institutions are regional public institutions embracing similar institutional missions and demographics. AASCU institutions drive student access and economic development in their region ("AASCU strategic plan - Vision and mission," n.d.). There were 259 institutions identified as members of AASCU for this study. The research intent is to use a non-random sample of the 259 institutions that complete the census to determine if the institution is using a centralized, decentralized, or hybrid budget model and that have complete IPEDS data for the research variables. Only institutions that complete the census indicating type of budget model used and the length of time the budget model has been in place and that have complete IPEDS data will be included in the study. The research intent is to have at least 20 institutions represented from each budget model type: centralized, decentralized, and hybrid. The sample consists of the institutions for which a particular budget model can be identified.

Data Source

Data for this study were collected from the Integrated Postsecondary Education Data System (IPEDS) and by a census of the Chief Financial Officer of the sample institutions. The

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census asked the Chief Financial Officers at institutions to classify the institution's budget model: centralized, decentralized, or hybrid. The longitudinal data collected from IPEDS included final release information from 2009-2018. This is the most recent complete data available. IPEDS is:

> A system of interrelated surveys conducted annually by the U.S. Department of Education's National Center for Education Statistics (NCES). IPEDS gathers information from every college, university, and technical and vocational institution that participates in the federal student financial aid programs. The Higher Education Act of 1965, as amended, requires that institutions that participate in federal student aid programs report data on enrollments, program completions, graduation rates, faculty and staff, finances, institutional prices, and student financial aid. These data are made available to students and parents through the College Navigator college search Web site and to researchers and others through the IPEDS Data Center. (IPEDS, n.d., para. 1)

Data Collection

This research was deemed exempt from review by the ETSU Institutional Review Board (IRB) because it did not meet the definition of research involving human subjects. This quantitative study was an analysis of secondary data collected from IPEDS, except for the census presented to the Chief Financial Officers identifying the budget model type each institution utilizes. To aid in the completion of the census the researcher will email a copy and will follow-up with a phone call to the Chief Financial Officer(s). The IPEDS data were collected by querying the IPEDS database for the research variables involved in this study. The variables are

enrollment, retention, institution size, and graduation rates. IPEDS data are publicly available information. Individuals can view a single institution or query multiple institutions. IPEDS reports are delivered in a comma-separated values (CSV) format.

Data Analysis

IBM SPSS Statistics Version 24 and Intellectus Statistics were used for data analysis. Inferential statistics (multivariate correlations) was used on budget model used, institutional size, and performance outcomes. The budget function variables are the model used: centralize, decentralized, or hybrid model and institutional size. The performance variables are enrollment percentages, retention rate, and graduation rate. A series of two-tailed independent samples t-tests were used to analyze for any differences between the function variables and performance variable. The analysis utilized 0.05 as the level of significance.

Chapter Summary

Chapter 3 discussed the procedures and methodology utilized for this quantitative study. This included an introduction, a description of the research design, Research questions with null hypotheses, the population and sample, data source and collection, and the data analysis processes are presented. The researcher reviewed whether a significant difference exists between the institutional budget model and institutional size and student outcomes at public institutions. Chapter 4 contains the results of the data analysis.

Chapter 4: Results

The purpose of this non-experimental qualitative study was to determine if there is a significant difference between the types of budget model an institution uses or the size of an institution and student enrollment, retention, and graduation rates for member institutions of the AASCU. Data analysis examined student outcome measures that included the percentage of first-time degree/certificate seeking undergraduate enrollment, percentage of transfer-in undergraduate enrollment, retention rate for all continuing undergraduate enrollment, and the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment. The 10-year sampling window used academic years 2009 through 2018. Data were collected from the IPEDS Data Center.

The AASCU institutions included in this study provided the type of budget model used by the respective institution during the 10-year time frame for academic years 2009 through 2018 by replying to the study census administered through Qualtrics. Institutions that did not utilize the same budget model for the entire 10-year period of 2009 through 2018 were not included in the data analysis.

The dependent variables for all institutions were: budget model (centralized, decentralized, and hybrid) or institutional size (small, medium, and large). The independent variables were: percentage of first-time degree/certificate seeking undergraduate enrollment, percentage of transfer-in undergraduate enrollment, retention rate for all continuing undergraduate enrollment, and the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment. The purpose of the data analysis was to determine if a significate differences existed between the dependent variables and the fixed

factor variables. Only two institutions identified as using a decentralized budget model through the census that had complete IPEDS data for the study window. Due to the low number of responses using a decentralized budget model, these were omitted from analysis. The study did not include small institutions in the analysis due to the low number of respondents from small institutions. An alpha level of .05 was set to establish the significance of the findings.

Research Question 1

Research Question 1: Is there a significant difference in the percentage of first-time degree/certificate-seeking undergraduate enrollment between institutions using centralized and hybrid budget models?

$H_0 1$: There is no significant difference in the percentage of first-time degree/certificate-seeking undergraduate enrollment between institutions using centralized and hybrid budget models.

A two-tailed independent samples t-test was conducted to examine whether the mean of the percentage of first-time degree/certificate-seeking undergraduate enrollment was significantly different between the categories of centralized or hybrid budget model. Shapiro-Wilk tests were conducted to determine whether the percentage of first-time degree/certificate-seeking undergraduate enrollment could have been produced by a normal distribution for each category of centralized or hybrid budget model (Razali & Wah, 2011). The result of the Shapiro-Wilk test for the percentage of first-time degree/certificate-seeking undergraduate enrollment in the centralized category was not significant based on an alpha value of 0.05, $W = 0.97$, $p = .641$. This result suggests that a normal distribution cannot be ruled out as the underlying distribution for the percentage of first-time degree/certificate-seeking undergraduate enrollment in the

centralized category. The result of the Shapiro-Wilk test indicate the percentage of first-time degree/certificate-seeking undergraduate enrollment in the hybrid category was not significant based on an alpha value of 0.05, $W = 0.93$, $p = .139$. This result suggests that a normal distribution cannot be ruled out as the underlying distribution for the percentage of first-time degree/certificate-seeking undergraduate enrollment in the hybrid category.

The Shapiro-Wilk test was not significant for either the centralized or the hybrid categories of budget model, indicating the normality assumption is met. Levene's test was conducted to assess whether the variance of the percentage of first-time degree/certificate-seeking undergraduate enrollment was equal between the categories of centralized or hybrid budget model. The result of Levene's test for the percentage of first-time degree/certificate-seeking undergraduate enrollment was not significant based on an alpha value of 0.05, $p = .449$. This result suggests it is possible that the variance of the percentage of first-time degree/certificate-seeking undergraduate enrollment is equal for each category of centralized or hybrid budget model, indicating the assumption of homogeneity of variance was met.

The result of the two-tailed independent samples t-test was not significant based on an alpha value of 0.05, $t(43) = 0.45$, $p = .658$, indicating the null hypothesis should not be rejected. This finding suggests the mean of the percentage of first-time degree/certificate-seeking undergraduate enrollment was not significantly different between the centralized and the hybrid categories of budget model. For centralized budget models the mean and standard deviation were 20.87 and 3.57. For hybrid budget models the mean and standard deviation were 21.21 and 3.02. The Cohen's d was 0.13. A bar plot of the means is presented in Figure 1.

Figure 1

The Mean of the Percentage of First-time Degree/Certificate-seeking Undergraduate Enrollment by Budget Model
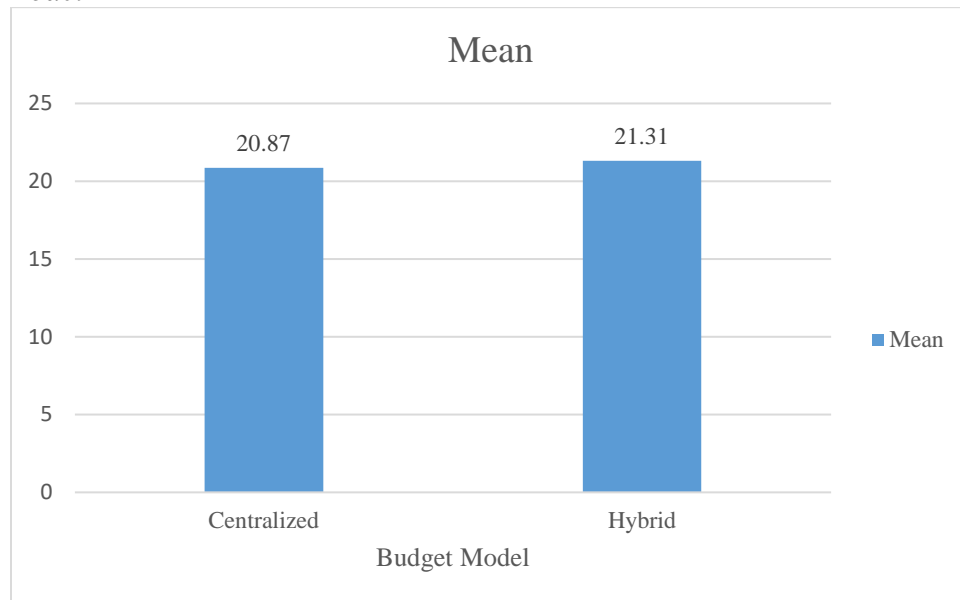
Research Question 2

Research Question 2: Is there a significant difference in the percentage of transfer-in undergraduate enrollment between institutions using centralized and hybrid budget models?

$H_0 2$: There is no significant difference in the percentage of transfer-in undergraduate enrollment between institutions using centralized and hybrid budget models.

A two-tailed independent samples *t*-test was conducted to examine whether the mean of the percentage of transfer-in undergraduate enrollment was significantly different between the categories of centralized or hybrid budget model. Shapiro-Wilk tests were conducted to determine whether the percentage of transfer-in undergraduate enrollment could have been produced by a normal distribution for each category of budget model (Razali & Wah, 2011). The result of the Shapiro-Wilk test for the percentage of transfer-in undergraduate enrollment in the

centralized category was not significant based on an alpha value of 0.05, $W = 0.95$, $p = .338$. This result suggests that a normal distribution cannot be ruled out as the underlying distribution for the percentage of transfer-in undergraduate enrollment in the centralized category. The result of the Shapiro-Wilk test for the percentage of transfer-in undergraduate enrollment in the hybrid category was not significant based on an alpha value of 0.05, $W = 0.97$, $p = .741$. This result suggests that a normal distribution cannot be ruled out as the underlying distribution for the percentage of transfer-in undergraduate enrollment in the hybrid category.

The Shapiro-Wilk test was not significant for either the centralized or the hybrid categories of budget model, indicating the normality assumption is met. Levene's test was conducted to assess whether the variance of the percentage of transfer-in undergraduate enrollment was equal between the categories of budget model. The result of Levene's test for the percentage of transfer-in undergraduate enrollment was not significant based on an alpha value of 0.05, $p = .055$. This result suggests it is possible that the variance of the percentage of transfer-in undergraduate enrollment is equal for each category of budget model, indicating the assumption of homogeneity of variance was met.

The result of the two-tailed independent samples t-test was not significant based on an alpha value of 0.05, $t(43) = 0.39$, $p = .696$, indicating the null hypothesis should not be rejected. Although the percentage of transfer in undergraduate enrollment was slightly, but not significantly higher for hybrid institutions than centralized institutions. The mean and standard deviation for centralized budget models were 9.00 and 3.49. the mean and standard deviation for hybrid budget models were 9.35 and 2.47. The Cohen's d was .012. A bar plot of the means is presented in Figure 2.

Figure 2

The Mean of the Percentage of Transfer-in Undergraduate Enrollment by Budget Model
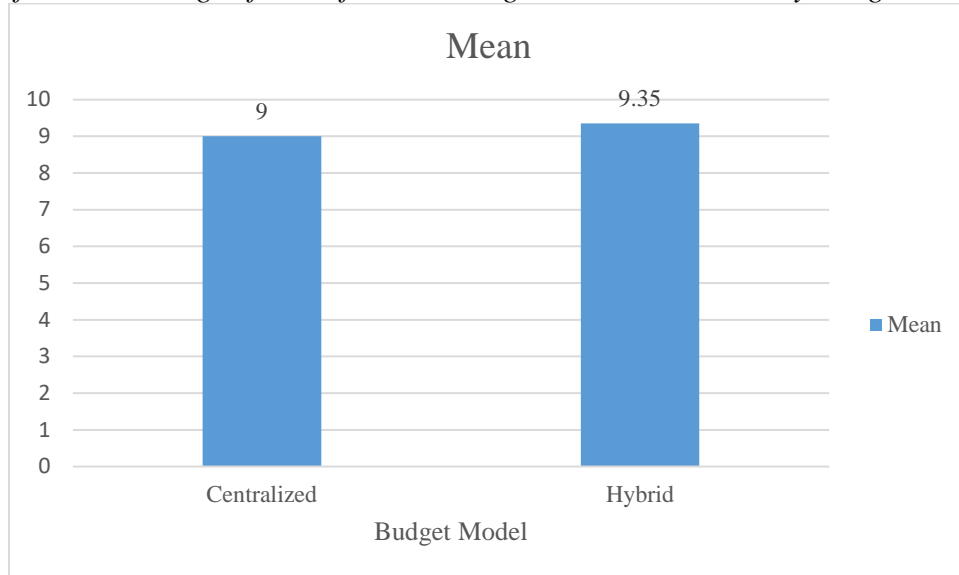
Research Question 3

Research Question 3: Is there a significant difference in the retention rate for all continuing undergraduate enrollment between institutions using centralized and hybrid budget models?

$H_0 3$: There is no significant difference in the retention rate for all continuing undergraduate enrollment between institutions using centralized and hybrid budget models.

A two-tailed independent samples *t*-test was conducted to examine whether the mean of the average retention rate for all continuing undergraduate enrollment was significantly different between the centralized and hybrid categories of budget model. Shapiro-Wilk tests were conducted to determine whether he average retention rate for all continuing undergraduate enrollment could have been produced by a normal distribution for each category of budget model (Razali & Wah, 2011). The result of the Shapiro-Wilk test for average retention rate for all

continuing undergraduate enrollment in the centralized category was not significant based on an alpha value of 0.05, $W = 0.93$, $p = .152$. This result suggests that a normal distribution cannot be ruled out as the underlying distribution for the average retention rate in the centralized category. The result of the Shapiro-Wilk test indicates the average retention rate for all continuing undergraduate enrollment in the hybrid category was not significant based on an alpha value of 0.05, $W = 0.96$, $p = .522$. This result suggests that a normal distribution cannot be ruled out as the underlying distribution for the average retention rate for all continuing undergraduate enrollment in the hybrid category.

The Shapiro-Wilk test was not significant for either the centralized or the hybrid categories of budget model, indicating the normality assumption is met. Levene's test was conducted to assess whether the variance of average retention rate for all continuing undergraduate enrollment was equal between the categories of budget model. The result of Levene's test for average retention rate for all continuing undergraduate enrollment was not significant based on an alpha value of 0.05, $p = .403$. This result suggests it is possible that the variance of the average retention rate for all continuing undergraduate enrollment is equal for each category of budget model, indicating the assumption of homogeneity of variance was met.

The result of the two-tailed independent samples t-test was not significant based on an alpha value of 0.05, $t(43) = 0.84$, $p = .407$, indicating the null hypothesis should not be rejected. This finding suggests the mean of the average retention rate for all continuing undergraduate enrollment was not significantly different between the centralized and hybrid categories of the budget model. The mean and standard deviation for centralized budget models were 70.85 and 9.64. The mean and standard deviation for hybrid budget models were 72.97 and 9.21. The Cohen's d was 0.25. A bar plot of the means is presented in Figure 3.

Figure 3

The Mean of Average Retention Rates for All Continuing Undergraduate Enrollment by Budget Model
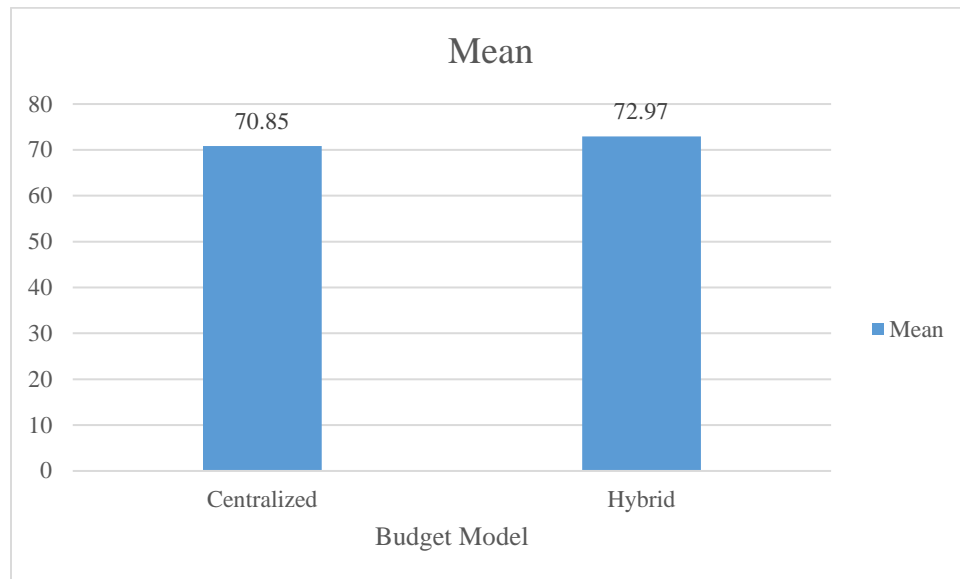
Research Question 4

Research Question 4: Is there a significant difference in the six-year graduation rate of full-time, first-time**,** degree/certificate-seeking undergraduate enrollment between institutions using centralized and hybrid budget models?

$H_0 4$: There is no significant difference in the six-year graduation rate of full-time, first-time**,** degree/certificate-seeking undergraduate enrollment between institutions using centralized and hybrid budget models.

A two-tailed independent samples *t*-test was conducted to examine whether the mean of the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment was significantly different between the centralized and hybrid categories of budget

model. Shapiro-Wilk tests were conducted to determine whether the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment could have been produced by a normal distribution for each category of budget model (Razali & Wah, 2011). The result of the Shapiro-Wilk test for the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment in the centralized category was not significant based on an alpha value of 0.05, $W = 0.98$, $p = .970$. This result suggests that a normal distribution cannot be ruled out as the underlying distribution for the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment in the centralized category. The result of the Shapiro-Wilk test for the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment in the hybrid category was significant based on an alpha value of 0.05, $W = 0.91$, $p = .043$. This result suggests that the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment in the hybrid category is unlikely to have been produced by a normal distribution.

The Shapiro-Wilk test was significant for the hybrid category of budget model, indicating the normality assumption is violated. Levene's test was conducted to assess whether the variance of the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment was equal between the categories of budget model. The result of Levene's test for the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment was not significant based on an alpha value of 0.05, $p = .801$. This result suggests it is possible that the variance of the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment is equal for each category of budget model, indicating the assumption of homogeneity of variance was met.

The result of the two-tailed independent samples *t*-test was not significant based on an alpha value of 0.05, $t(43) = 1.59$, $p = .119$, indicating the null hypothesis should not be rejected. This finding suggests the mean of the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment was not significantly different between the centralized and hybrid categories of budget model. The mean and standard deviation for centralized budget models were 40.62 and 12.64. The mean and standard deviation for hybrid budget models were 46.79 and 13.33. The Cohen's *d* was 0.47. A bar plot of the means is presented in Figure 4.

Figure 4

The Mean of the Six-year Graduation Rate of Full-time, First-time, Degree/Certificate-seeking Undergraduate Enrollment by Budget Model

Research Question 5

Research Question 5: Is there a significant difference between the size (medium and large) of an institution and the type of budget model used?

$H_0 5$: There is no significant difference between the size (medium and large) of an institution and the type of budget model used.

A two-tailed independent samples *t*-test was conducted to examine whether the mean of budget model was significantly different between the medium and large institutions. Shapiro-Wilk tests were conducted to determine whether the mean of budget model could have been produced by a normal distribution for medium and large institutions (Razali & Wah, 2011). The result of the Shapiro-Wilk test for medium category of institutional size was significant based on an alpha value of 0.05, $W = 0.64$, $p < .001$. This result suggests that the mean of budget model in the medium category of institutional size is unlikely to have been produced by a normal distribution.

The result of the Shapiro-Wilk test for the mean of budget model in the large category of institutional size was significant based on an alpha value of 0.05, $W = 0.75$, $p = .002$. This result suggests that the mean of budget model in the large category of institutional size is unlikely to have been produced by a normal distribution. The Shapiro-Wilk test was significant for both the medium and large category of institutional size, indicating the normality assumption is violated.

The result of the two-tailed independent samples *t*-test was not significant based on an alpha value of 0.05, $t(41) = 0.44$, $p = .662$, indicating the null hypothesis cannot be rejected. This finding suggests the mean of budget model was not significantly different between the medium and large category of institutional size. The mean and standard deviation for the medium category of institutional size were 2.09 and .094. The mean and standard deviation for large

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category of institutional size were 1.94 and 1.01. The Cohen's *d* was 0.16. A bar plot of the means is presented in Figure 1.

Figure 5

The Mean of Budget Model by Institutional Size Category
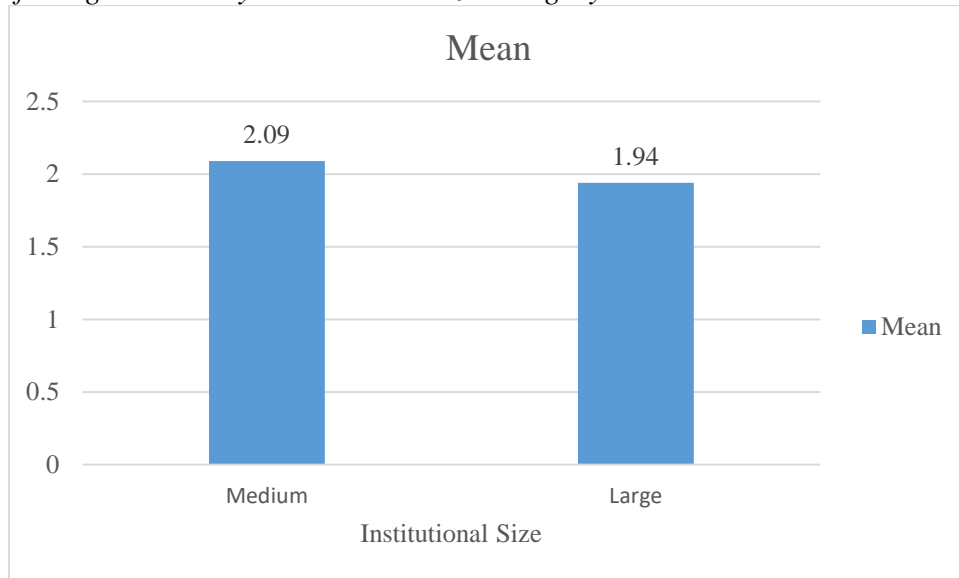
Research Question 6

Research Question 6: Is there a significant difference in the percentage of first-time degree/certificate-seeking undergraduate enrollment between medium and large size institutions?

H$_0$6: There is no significant difference in the percentage of first-time degree/certificate-seeking undergraduate enrollment between medium and large size institutions.

A two-tailed independent samples *t*-test was conducted to examine whether the mean of the percentage of first-time degree/certificate-seeking undergraduate enrollment was signific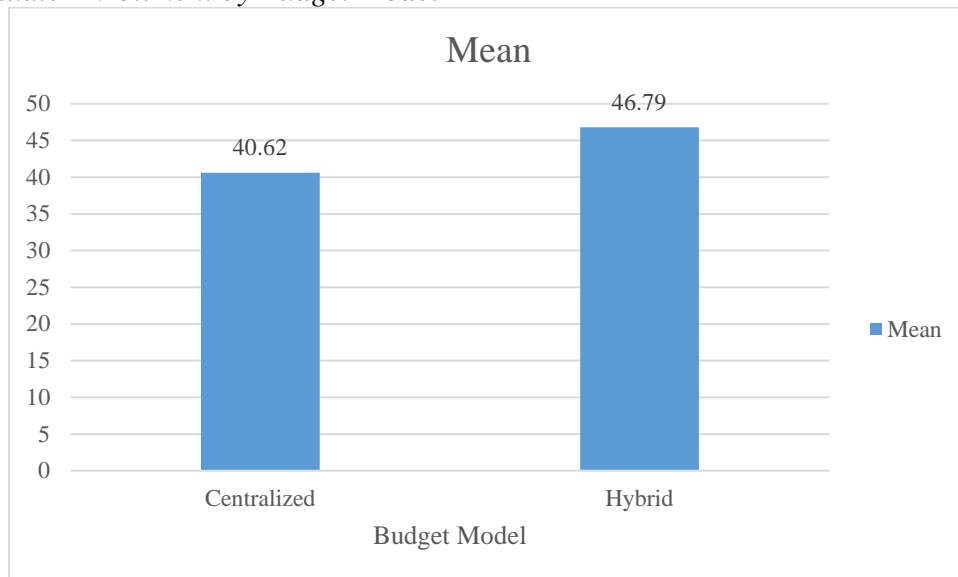antly different between the medium and large categories of institutional size. Shapiro-Wilk tests were conducted to determine whether the percentage of first-time degree/certificate-

seeking undergraduate enrollment could have been produced by a normal distribution for each category of Institutional size (Razali & Wah, 2011). The result of the Shapiro-Wilk test for the percentage of first-time degree/certificate-seeking undergraduate enrollment in the medium category was not significant based on an alpha value of 0.05, $W = 0.96$, $p = .300$. This result suggests that a normal distribution cannot be ruled out as the underlying distribution for the percentage of first-time degree/certificate-seeking undergraduate enrollment in the medium category.

The result of the Shapiro-Wilk test indicates the percentage of first-time degree/certificate-seeking undergraduate enrollment in the large category was not significant based on an alpha value of 0.05, $W = 0.94$, $p = .570$. This result suggests that a normal distribution cannot be ruled out as the underlying distribution for the percentage of first-time degree/certificate-seeking undergraduate enrollment in the large category. The Shapiro-Wilk test was not significant for either the medium or large categories of institutional size, indicating the normality assumption is met. Levene's test was conducted to assess whether the variance of the percentage of first-time degree/certificate-seeking undergraduate enrollment was equal between the categories of institutional size. The result of Levene's test for the percentage of first-time degree/certificate-seeking undergraduate enrollment was not significant based on an alpha value of 0.05, $p = .751$. This result suggests it is possible that the variance of the percentage of first-time degree/certificate-seeking undergraduate enrollment is equal for each category of institutional size, indicating the assumption of homogeneity of variance was met.

The result of the two-tailed independent samples t-test was not significant based on an alpha value of 0.05, $p = .208$, indicating the null hypothesis should not be rejected. This finding suggests the mean of the percentage of first-time degree/certificate-seeking undergraduate

enrollment was not significantly different between the medium and large categories of institutional size. The mean and standard deviation medium sized institutions were 21.36 and 3.30. The mean and standard deviation for large sized institutions were 19.82 and 2.90. The Cohen's *d* was 0.46. A bar plot of the means is presented in Figure 6.

Figure 6

The Mean of the Percentage of First-time Degree/Certificate-seeking Undergraduate Enrollment by Levels of Institutional Size Category
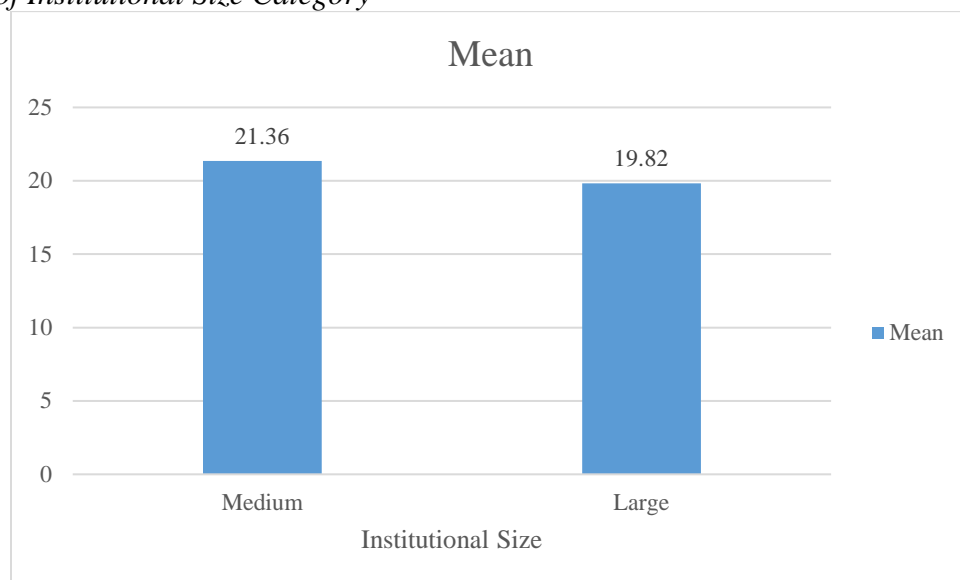
Research Question 7

Research Question 7: Is there a significant difference in the percentage of transfer-in undergraduate enrollment between medium and large size institutions?

$H_0$7: There is no significant difference in the percentage of transfer-in undergraduate enrollment between medium and large size institutions.

A two-tailed independent samples *t*-test was conducted to examine whether the mean of the percentage of transfer-in undergraduate enrollment was significantly different between the medium and large categories of institutional size. Shapiro-Wilk tests were conducted to determine whether the percentage of transfer-in undergraduate enrollment could have been produced by a normal distribution for each category of institutional size (Razali & Wah, 2011). The result of the Shapiro-Wilk test for the percentage of transfer-in undergraduate enrollment in the medium category was not significant based on an alpha value of 0.05, $W = 0.96$, $p = .342$. This result suggests that a normal distribution cannot be ruled out as the underlying distribution for the percentage of transfer-in undergraduate enrollment in the medium category. The result of the Shapiro-Wilk test indicates the percentage of transfer-in undergraduate enrollment in the large category was not significant based on an alpha value of 0.05, $W = 0.95$, $p = .629$. This result suggests that a normal distribution cannot be ruled out as the underlying distribution for the percentage of transfer-in undergraduate enrollment in the large category.

The Shapiro-Wilk test was not significant for either the medium or large categories of institutional size, indicating the normality assumption is met. Levene's test was conducted to assess whether the variance of the percentage of transfer-in undergraduate enrollment was equal between the categories of Institutional size. The result of Levene's test for the percentage of transfer-in undergraduate enrollment was not significant based on an alpha value of 0.05, $p = .998$. This result suggests it is possible that the variance of the percentage of transfer-in undergraduate enrollment is equal for each category of institutional size, indicating the assumption of homogeneity of variance was met.

The result of the two-tailed independent samples *t*-test was not significant based on an alpha value of 0.05, $t(41) = 0.37$, $p = .713$, indicating the null hypothesis should not be rejected.

This finding suggests the mean of the percentage of transfer-in undergraduate enrollment was not significantly different between the medium and large categories of institutional size. The mean and standard deviation for medium sized institutions were 9.13 and 3.07. The mean and standard deviation for large sized institutions were 8.73 and 3.12. The Cohen's *d* was 0.13. A bar plot of the means is presented in Figure 7.

Figure 7

The Mean of the Percentage of Transfer-in Undergraduate Enrollment by Levels of Institutional Size Category
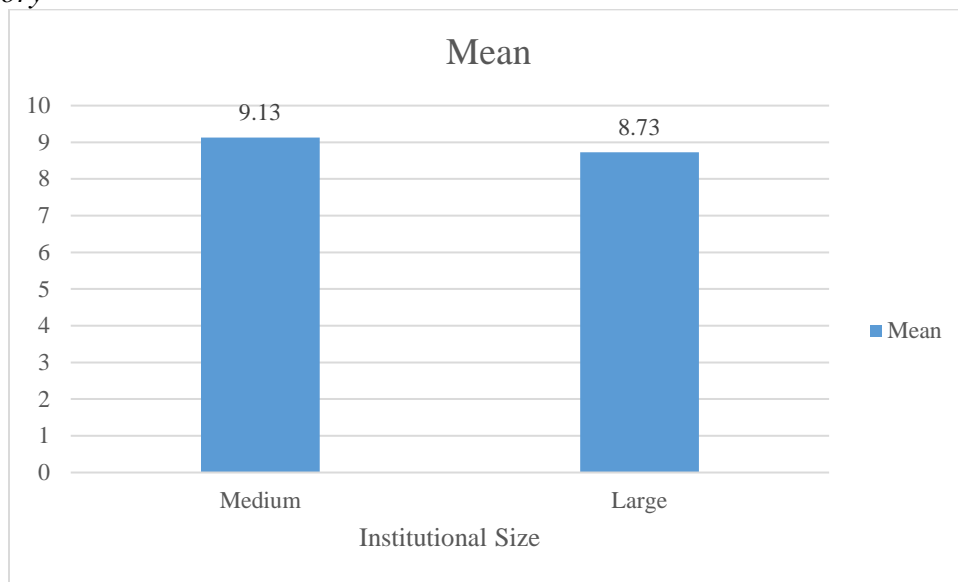
Research Question 8

Research Question 8: Is there a significant difference in the retention rate for all continuing undergraduate enrollment between medium and large size institutions?

$H_0$8: There is no significant difference in the retention rate for all continuing undergraduate enrollment between medium and large size institutions.

A two-tailed independent samples *t*-test was conducted to examine whether the mean of the retention rate for all continuing undergraduate enrollment was significantly different between the medium and large categories of institutional size. Shapiro-Wilk tests were conducted to determine whether the retention rate for all continuing undergraduate enrollment could have been produced by a normal distribution for each category of institutional size (Razali & Wah, 2011). The result of the Shapiro-Wilk test for the retention rate for all continuing undergraduate enrollment in the medium category was not significant based on an alpha value of 0.05, $W = 0.98$, $p = .781$. This result suggests that a normal distribution cannot be ruled out as the underlying distribution for the retention rate for all continuing undergraduate enrollment in the medium category. The result of the Shapiro-Wilk test indicates the retention rate for all continuing undergraduate enrollment in the large category was not significant based on an alpha value of 0.05, $W = 0.95$, $p = .697$. This result suggests that a normal distribution cannot be ruled out as the underlying distribution for the retention rate for all continuing undergraduate enrollment in the large category.

The Shapiro-Wilk test was not significant for either the medium or large categories of institutional size, indicating the normality assumption is met. Levene's test was conducted to assess whether the variance of the retention rate for all continuing undergraduate enrollment was equal between the categories of institutional size. The result of Levene's test for the retention rate for all continuing undergraduate enrollment was not significant based on an alpha value of 0.05, $p = .649$. This result suggests it is possible that the variance of the retention rate for all continuing undergraduate enrollment is equal for each category of institutional size, indicating the assumption of homogeneity of variance was met.

The result of the two-tailed independent samples t-test was significant based on an alpha value of 0.05, $t(41) = -3.44$, $p \leq .001$, indicating the null hypothesis can be rejected. This finding suggests the mean of the retention rate for all continuing undergraduate enrollment was significantly different between the medium and large categories of institutional size. Large institutions reported a significantly higher retention rate compared to medium sized institutions. The mean and standard deviation for medium sized institutions were 71.11 and 7.23. The mean and standard deviation for large sized institutions were 79.6 and 6.50. The Cohen's d was 1.24. A bar plot of the means is presented in Figure 8.

Figure 8

The Mean of the Retention Rate for All Continuing Undergraduate Enrollment by Levels of Institutional Size Category
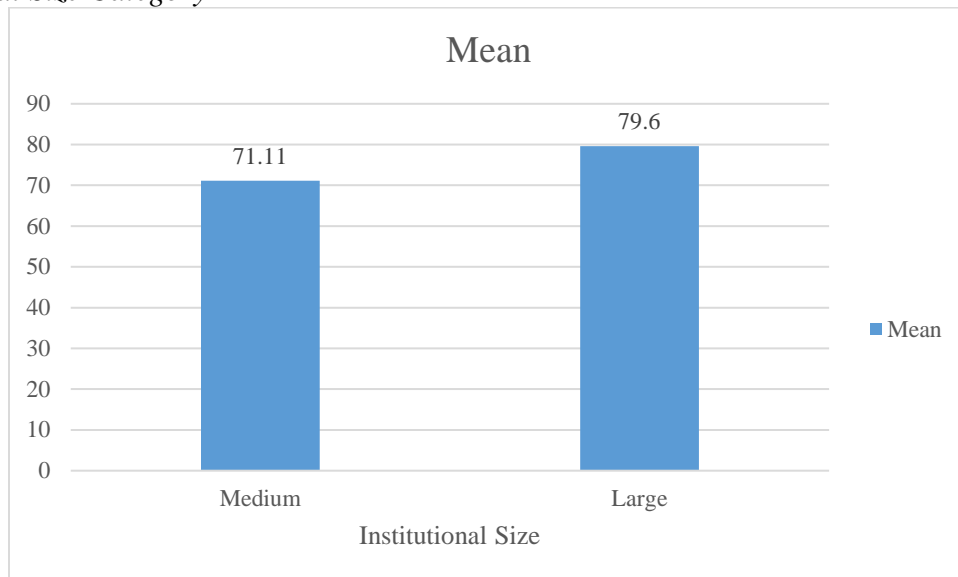
Research Question 9

Research Question 9: Is there a significant difference in the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment between medium and large size institutions?

$H_0$9: There is no significant difference in the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment between medium and large size institutions.

A two-tailed independent samples t-test was conducted to examine whether the mean of the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment was significantly different between the medium and large categories of institutional size. Shapiro-Wilk tests were conducted to determine whether the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment could have been produced by a normal distribution for each category of institutional size (Razali & Wah, 2011). The result of the Shapiro-Wilk test for the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment in the medium category was not significant based on an alpha value of 0.05, $W = 0.96$, $p = .318$. This result suggests that a normal distribution cannot be ruled out as the underlying distribution for the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment in the medium category.

The result of the Shapiro-Wilk test on the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment in the large category was not significant based on an alpha value of 0.05, $W = 0.91$, $p = .213$. This result suggests that a normal distribution cannot be ruled out as the underlying distribution for the six-year graduation rate of

full-time, first-time, degree/certificate-seeking undergraduate enrollment in the large category. The Shapiro-Wilk test was not significant for either the medium or the large categories of institutional size, indicating the normality assumption is met. Levene's test was conducted to assess whether the variance of the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment was equal between the categories of institutional size. The result of Levene's test for the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment was not significant based on an alpha value of 0.05, $p = .554$. This result suggests it is possible that the variance of the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment is equal for each category of institutional size, indicating the assumption of homogeneity of variance was met.

The result of the two-tailed independent samples t-test was significant based on an alpha value of 0.05, $t(41) = 2.32$, $p = .026$, indicating the null hypothesis can be rejected. This finding suggests the mean of the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment was significantly different between the medium and large categories of institutional size. Large institutions reported a significantly higher six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment compared to medium sized institutions. The mean and standard deviation for medium sized institutions were 42.64 and 13.07. The mean and standard deviation for large sized institutions were 52.79 and 10.68. The Cohen's d was 0.85. A bar plot of the means is presented in Figure 9.

Figure 9

The Mean of the Six-year Graduation Rate of Full-time, First-time, Degree/Certificate-seeking
Undergraduate Enrollment by Levels of Institutional Size Category

Chapter Summary

This chapter presented descriptive and correlation analyses for budget model and institutional size and student outcome measures for 47 AASCU institutions. Nine Research Questions and nine null Hypotheses directed the data analysis. Parametric and non-parametric analyses were used to determine if significant differences between budget model, institutional size, and student outcomes for AASCU institutions. From these analyses, 2 out of 9 research questions had significant findings. Chapter 5 will provide a summary of these findings. Chapter 5 will also provide conclusions, recommendations for practice, and recommendations for further research.

Chapter 5: Summary, Conclusions, and Recommendations

This chapter includes a summary, conclusions, and recommendations for practice and futher research. The purpose of this study was to identify if significant difference existed in student enrollment, retention, and graduation rates based on budget model or the size of an institution. Analyses consisted of budget model used and institutional size of AASCU institutions and the corresponding IPEDS data for enrollment, retention, and graduation rates from 2009 through 2018. The independent variables included budget model and institutional size. The dependent variables included the percentage of first-time degree/certificate-seeking undergraduate enrollment, the percentage of transfer-in undergraduate enrollment, the retention rate for all continuing undergraduate enrollment, and the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment. A series of parametric and non-parametric analyses were conducted to answer the research questions.

Summary of the Findings

Chapter 1 of this study presented nine research questions for the basis of this study's statistical analysis. A series of tests for normality, homogeneity of variance, and independent t-tests were used to analyze the hypotheses for Research Questions 1, 2, 3, 4, 5, 6, 7, 8, and 9. An alpha level of .05 was applied for the statistical analysis. Research Questions 1 through 7 yielded no statistically significant findings. Research Questions 8 and 9 yielded findings that were statistically significant.

Descriptive statistics were used to examine the student outcome data for AASCU institutions based on type of budget model utilized and based on the size of the institutions. The mean for each student outcome analyzed was greater at AASCU institutions that used a hybrid budget model than those that used a centralized budget model. The mean for the percentage of first-time degree/certificate-seeking undergraduate enrollment was 21.31% for institutions using a hybrid budget and 20.87% for those using a centralized budget model. The mean for the percentage of transfer-in undergraduate enrollment was 9.35% for institutions using a hybrid budget and 9.00% for those using a centralized budget model. The mean for the retention rate for all continuing undergraduate enrollment was 72.97% for institutions using a hybrid budget and 70.85% for those using a centralized budget model. The mean for the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment was 46.79% for institutions using a hybrid budget and 40.62% for those using a centralized budget model. This trend was uniform based on budget model, but not statistically significant.

The mean the percentage of first-time degree/certificate-seeking undergraduate enrollment was 21.26% for medium sized institutions and 19.82% for large sized institutions. The mean percentage of transfer-in undergraduate enrollment was 9.13% for medium sized institutions and 8.73% for large sized institutions. The mean retention rate for all continuing undergraduate enrollment was 71.11% for medium sized institutions and 79.60% for large sized institutions. The mean six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment was 42.64% for medium sized institutions and 52.79% for large sized institutions. Medium sized institutions had means that were greater for enrollment outcome measures, but large sized institutions had means that were greater for retention and graduation rates. The retention and graduation rate differences were statistically significant.

Research Question 1

Is there a significant difference in the percentage of first-time degree/certificate-seeking undergraduate enrollment between institutions using centralized and hybrid budget models? A two-tailed independent samples *t*-test was conducted to examine whether the mean of the percentage of first-time degree/certificate-seeking undergraduate enrollment was significantly different between the categories of centralized or hybrid budget model. No significant difference was found in the analysis of Research Question 1, ($p = .658$).

Research Question 2

Is there a significant difference in the percentage of transfer-in undergraduate enrollment between institutions using centralized and hybrid budget models? A two-tailed independent samples *t*-test was conducted to examine whether the mean of the percentage of transfer-in undergraduate enrollment was significantly different between the categories of centralized or hybrid budget model. No significant difference was found in the analysis of Research Question 2, ($p = .696$).

Research Question 3

Is there a significant difference in the retention rate for all continuing undergraduate enrollment between institutions using centralized and hybrid budget models? A two-tailed independent samples *t*-test was conducted to examine whether the mean of the average retention rate for all continuing undergraduate enrollment was significantly different between the centralized

and hybrid categories of budget model. No significant difference was found in the analysis of Research Question 3, ($p = .407$).
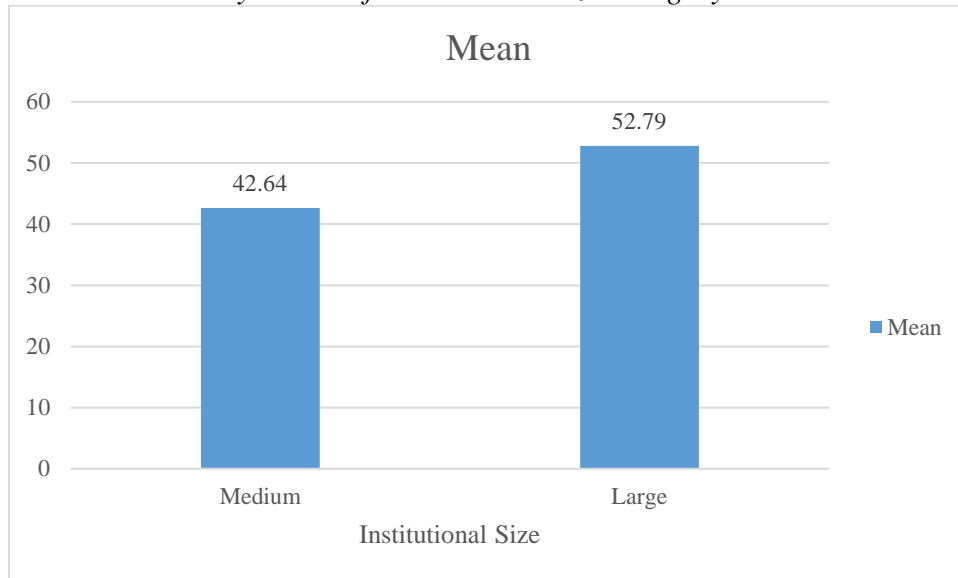
Research Question 4

Is there a significant difference in the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment between institutions using centralized and hybrid budget models? A two-tailed independent samples t-test was conducted to examine whether the mean of the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment was significantly different between the centralized and hybrid categories of budget model. No significant difference was found in the analysis of Research Question 4, ($p = .119$).

Research Question 5

Is there a significant difference between the size (medium and large) of an institution and the type of budget model utilized? A two-tailed independent samples t-test was conducted to examine whether the mean of budget model was significantly different between the medium and large institutions. No significant differences were found in the analysis of Research Question 5, ($p = .662$).

Research Question 6

Is there a significant difference in the percentage of first-time degree/certificate-seeking undergraduate enrollment between medium and large size institutions? A two-tailed independent samples t-test was conducted to examine whether the mean of the percentage of first-time

degree/certificate-seeking undergraduate enrollment was significantly different between the medium and large categories of institutional size. No significant difference was found in the analysis of Research Question 6, ($p = .208$).

Research Question 7

Is there a significant difference in the percentage of transfer-in undergraduate enrollment between medium and large size institutions? A two-tailed independent samples *t*-test was conducted to examine whether the mean of the percentage of transfer-in undergraduate enrollment was significantly different between the medium and large categories of institutional size. No significant difference was found in the analysis of Research Question 7, ($p = .713$).

Research Question 8

Is there a significant difference in the retention rate for all continuing undergraduate enrollment between medium and large size institutions? A two-tailed independent samples *t*-test was conducted to examine whether the mean of the retention rate for all continuing undergraduate enrollment was significantly different between the medium and large categories of institutional size. A significant difference was determined in analysis of Research Question 8, ($p \leq .001$). Large institutions reported a significantly higher retention rate compared to medium sized institutions.

Research Question 9

Is there a significant difference in the six-year graduation rate of full-time, first-time**,** degree/certificate-seeking undergraduate enrollment between medium and large size institutions?

A two-tailed independent samples *t*-test was conducted to examine whether the mean of the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment was significantly different between the medium and large categories of institutional size. A significant difference was determined in analysis of Research Question 9, ($p = .026$). Large institutions reported a significantly higher six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment compared to medium sized institutions.

Conclusions

No significant differences were identified between the type of budget model utilized and the student outcome measures of enrollment, retention, and graduate rates. This lack of significance is consistent with previous findings by Sherman in 2018 and Lampley in 2015. These researchers indicated that factors outside an institutions control have influence on student success. In 2014, Martin et al. found that a student's motivation and goals had a stronger impact on student success. Boden (2012) conducted a longitudinal study of more than 100 years that also indicated factors outside institutional control influenced student outcomes. Boden stated concerning retention and graduation rates, "rates are highly stable despite large changes in student and institutional characteristics" (p. 200). Barton, in 2011, indicated no one approach to budgeting was better than another approach to influence student outcomes. No significant differences were identified when considering institutional size and enrollment outcomes of first-year students or transfer-in students. The mean averages for student outcomes related to enrollment, retention, and graduation rates at institutions using hybrid budget model were higher than the mean averages of institutions using a centralized budget model. Boden (2012) indicated

that even though efforts to increase student outcomes did not have significant impacts it is still worth the effort to have modest impacts. Changing to a more decentralized type model may be worth the effort to increase student outcomes. No significant difference was identified between institutional size and the type of budget model utilized. In 2011, Rylee had indicated that smaller institutions were better suited for a centralized budget model. Szatmary (2011) and Whalen (1991) suggested that decentralized budget models were a better fit for larger institutions. The present study did not identify any significant difference in the type of model utilized and the size of an institution.

The present study did find a significant difference in two student outcome areas when considering the size of an institution. The study did not include small institutions in the analysis due to the low number of respondents from small institutions. There was a significant difference between medium and large institutions and the retention rate for all continuing undergraduate enrollment. Large institutions mean average retention rate was 79.60% compared to the mean average retention rate of 71.11% for medium institutions. There was significant difference between medium and large institutions and the six-year graduation rate of full-time, first-time, degree/certificate-seeking undergraduate enrollment. Large institutions had a mean average graduation rate of 52.79% compared the mean average graduation rate of 42.64% of medium institutions. Lampley (2015), Hambrick et.al (2004), and Ryan (2004) identified that increases budget allocation for instruction can have a positive effect on completion rates. The type budget model used by an institution may not be as important as the budget allocations for instruction on improving student outcomes related to enrollment, retention, and graduation rates. The present study did not identify why the significant differences exist between large and medium institutions and retention and graduation rates.

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Recommendation for Practice

The purpose of this study was to identify differences in the budget model used and institutional size and student outcomes related to enrollment, retention, and graduation rates. The results of this study provide insight for administrators, faculty, and staff at AASCU institutions and potentially other institutions across the United States.

1. Boden (2012) indicated that even though efforts to increase student outcomes did not have significant impacts it is still worth the effort to have modest impacts. The present study suggests that institutions seeking to increase the student outcomes reviewed in this may be able to realize improvements by moving to a more decentralized budget model.

2. Institutions that have the ability to increase undergraduate enrollment may want to make an investment in enrollment growth through freshman enrollment, transfer-in enrollment, and retention efforts. Large institutions have significantly higher retention and graduation rates.

Recommendation for Further Research

The following areas where identified for further exploration and research. This would include using a different population and timeframe to see if there are any differences in the findings. The significant difference identified for retention and graduation rates for large institutions should be explored to see what might the causal effect of these differences. Previous literature indicates that budget allocation for instruction could be the driver. Further inquiry into the effect of budget allocations on student outcomes should be expanded. It is important for

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higher education institutions to gain a better understanding of how to effectively increase

retention and graduation rates. The present study identified that institutions using a hybrid budget

models had higher mean averages for the student outcomes than institutions using a centralized

budget model. Further research should investigate the potential cause of the higher mean

averages for student outcomes.

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APPENDICES

Appendix A: List of AASCU Institutions

Adams State University	Old Dominion University
Alabama A & M University	Pennsylvania State University-Penn State Schuylkill
Alabama State University	Peru State College
Albany State University	Pittsburg State University
Alcorn State University	Prairie View A & M University
Arkansas State University-Main Campus	Radford University
Auburn University at Montgomery	Ramapo College of New Jersey
Austin Peay State University	Rhode Island College
Ball State University	Rogers State University
Bemidji State University	Rutgers University-Newark
Black Hills State University	Saginaw Valley State University
Bloomsburg University of Pennsylvania	Saint Cloud State University
Bowie State University	Salem State University
Bridgewater State University	Salisbury University
California Polytechnic State University-San Luis Obispo	Sam Houston State University
California State Polytechnic University-Pomona	San Diego State University
California State University Maritime Academy	San Francisco State University
California State University-Bakersfield	San Jose State University
California State University-Chico	Savannah State University
California State University-Dominguez Hills	Shawnee State University
California State University-East Bay	Shippensburg University of Pennsylvania
California State University-Fresno	Slippery Rock University of Pennsylvania
California State University-Fullerton	Sonoma State University
California State University-Long Beach	Southeast Missouri State University
California State University-Los Angeles	Southeastern Louisiana University
California State University-Monterey Bay	Southern Connecticut State University
California State University-Northridge	Southern Illinois University-Edwardsville
California State University-Sacramento	Southern Oregon University
California State University-San Bernardino	Southern University and A & M College
California State University-San Marcos	Southwestern Oklahoma State University
California State University-Stanislaus	State University of New York at New Paltz

California University of Pennsylvania	Stephen F Austin State University
Cameron University	Stockton University
Central Connecticut State University	SUNY at Albany
Central Michigan University	SUNY at Fredonia
Central State University	SUNY Buffalo State
Central Washington University	SUNY College at Brockport
Chadron State College	SUNY College at Geneseo
Chicago State University	SUNY College at Old Westbury
Citadel Military College of South Carolina	SUNY College at Oswego
Clayton State University	SUNY College at Plattsburgh
Clemson University	SUNY College at Potsdam
Cleveland State University	SUNY College of Agriculture and Technology at Cobleskill
Coastal Carolina University	SUNY Cortland
College of Staten Island CUNY	SUNY Empire State College
Colorado State University-Pueblo	SUNY Oneonta
Columbus State University	Tarleton State University
Concord University	Tennessee State University
Coppin State University	Tennessee Technological University
CUNY Lehman College	Texas A & M International University
CUNY Queens College	Texas A & M University-Corpus Christi
CUNY York College	Texas A & M University-Kingsville
Dalton State College	Texas Southern University
Delaware State University	Texas State University
Delta State University	Texas Woman's University
Dickinson State University	The College of New Jersey
East Carolina University	The University of Tennessee-Chattanooga
East Central University	The University of Tennessee-Chattanooga
East Stroudsburg University of Pennsylvania	The University of Texas Rio Grande Valley
East Tennessee State University	The University of West Florida
Eastern Connecticut State University	Towson University
Eastern Kentucky University	Troy University
Eastern New Mexico University-Main Campus	University of Alaska Anchorage
Eastern Oregon University	University of Alaska Southeast
Eastern Washington University	University of Arkansas at Little Rock
Edinboro University of Pennsylvania	University of Arkansas-Fort Smith
Elizabeth City State University	University of Central Arkansas
Emporia State University	University of Central Florida
Farmingdale State College	University of Central Missouri

Ferris State University	University of Central Oklahoma
Fitchburg State University	University of Hawaii at Hilo
Florida Gulf Coast University	University of Houston-Downtown
Florida International University	University of Illinois at Springfield
Fort Hays State University	University of Louisiana at Lafayette
Fort Lewis College	University of Maine at Presque Isle
Fort Valley State University	University of Maryland Eastern Shore
Framingham State University	University of Maryland Global Campus
Francis Marion University	University of Maryland-Baltimore County
Frostburg State University	University of Massachusetts-Boston
George Mason University	University of Massachusetts-Dartmouth
Georgia College & State University	University of Memphis
Georgia Southern University	University of Michigan-Dearborn
Georgia Southwestern State University	University of Michigan-Flint
Grambling State University	University of Minnesota-Crookston
Grand Valley State University	University of Minnesota-Duluth
Harris-Stowe State University	University of Montevallo
Henderson State University	University of Nebraska at Kearney
Humboldt State University	University of Nebraska at Omaha
Indiana University of Pennsylvania-Main Campus	University of North Alabama
Indiana University-East	University of North Carolina at Charlotte
Indiana University-Kokomo	University of North Carolina at Greensboro
Indiana University-Northwest	University of North Carolina at Pembroke
Indiana University-Purdue University-Indianapolis	University of North Carolina Wilmington
Indiana University-South Bend	University of North Florida
Indiana University-Southeast	University of North Texas
Jackson State University	University of Northern Colorado
Jacksonville State University	University of South Alabama
James Madison University	University of South Carolina Aiken
Keene State College	University of South Carolina Beaufort
Kentucky State University	University of South Carolina-Upstate
Kutztown University of Pennsylvania	University of Southern Indiana
Lamar University	University of Southern Maine
Lander University	University of the District of Columbia
Langston University	University of Toledo
Lewis-Clark State College	University of West Alabama
Lincoln University	University of West Georgia
Lincoln University	University of Wisconsin-Eau Claire
Lock Haven University	University of Wisconsin-Green Bay

Louisiana State University-Shreveport	University of Wisconsin-La Crosse
Louisiana Tech University	University of Wisconsin-Oshkosh
Mansfield University of Pennsylvania	University of Wisconsin-Parkside
Massachusetts College of Art and Design	University of Wisconsin-Platteville
Mayville State University	University of Wisconsin-River Falls
Metropolitan State University	University of Wisconsin-Stevens Point
Metropolitan State University of Denver	University of Wisconsin-Stout
Middle Tennessee State University	University of Wisconsin-Superior
Millersville University of Pennsylvania	University of Wisconsin-Whitewater
Minnesota State University Moorhead	Utah Valley University
Minnesota State University-Mankato	Valdosta State University
Mississippi University for Women	Valley City State University
Mississippi Valley State University	Virginia State University
Missouri Southern State University	Washburn University
Montana State University	Wayne State College
Montana State University Billings	Wayne State University
Montana State University-Northern	Weber State University
Montana Technological University	West Chester University of Pennsylvania
Morgan State University	West Texas A & M University
Murray State University	West Virginia State University
New Jersey City University	West Virginia University Institute of Technology
Norfolk State University	Western Carolina University
North Carolina A & T State University	Western Connecticut State University
North Carolina Central University	Western Kentucky University
Northeastern Illinois University	Western Oregon University
Northeastern State University	Western Washington University
Northern Arizona University	Westfield State University
Northern Kentucky University	William Paterson University of New Jersey
Northern Michigan University	Winona State University
Northern State University	Winston-Salem State University
Northwest Missouri State University	Winthrop University
Northwestern Oklahoma State University	Worcester State University
Oakland University	

My name is James Batchelder and I am a doctoral candidate at East Tennessee State University. For my dissertation, I am examining the relationship of university budget models to student success outcomes. I am including member institutions of the Association of American State Colleges and Universities in my study. I am inviting you to participate in this research study by following the link below to the census.

The census will require approximately two minutes to complete. There is no compensation for responding nor is there any known risk. Copies of the project will be provided to my East Tennessee State University instructor. Your participation in this project is needed to appropriately classify your institution within the study. Please select the budget model that most appropriately reflects your institution and the timeframe that coincides with its utilization. Please click the following link to a Qualtrics survey to complete the census.

Thank you for taking the time to assist me in my educational endeavors. The data collected will provide useful information regarding enrollment, retention, and graduation rates, and the potential relationship to the institutional budget model utilized. If you would like a summary copy of this study please complete the Request for Information portion of the Qualtrics survey. Completion of the questionnaire will indicate your willingness to participate in this study. If you require additional information or have questions, please contact me at the number listed below.

If you are not satisfied with the manner in which this study is being conducted, you may report (anonymously if you so choose) any complaints to the Department of Educational Leadership and Policy Analysis, 501 Warf-Pickel Hall, PO Box 70550, Johnson City, TN 37614, Email: elpa@etsu.edu, or 423-439-4430, Fax 423-439-7636

       Sincerely,

       James Batchelder
       423-439-7456,
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Appendix C: Institutional Budget Model Census

East Tennessee State University

University Budget Models to Student Outcomes

Institutional Budget Model Census

There are three main questions below. The first question asks for you to select your institution. The second question asks you to identify your current budget model please select the model that most accurately reflects the model that your institution has in place. The third question asks the time interval that your current model has been utilized. The fourth and fifth questions are follow-up questions depending on your response to questions three.

Q.1. Please select or indicate your institution:

Q.2. Please select the type of budget model that most accurately reflects the budget model your institutions had in place for academic year 2017.

    A. Centralized Budget Model: Budget decisions are made centrally allowing stringent control and management of the budget and budget process for congruence with the institution's strategic plan.

    B. Decentralized Budget Model: Budget decisions are made at the unit level and flow up from the unit to the central administration. Units have control and responsibility for revenues and expenses.

    C. Hybrid Budget Model: Budget model incorporates attributes of both centralized and decentralized budget models. Budget guidelines are provided from central administration to direct the budget process at the unit level.

Q. 3. Please indicate the time interval that your institution had been utilizing the budget model selected in question two.

    A. 10 or more years

    B. 5 to 10 years

    C. less than 5 years

Q. 4. Please indicate type of previous budget model utilized if answer to question three if less than 5 years.

    A. Centralized Budget Model

    B. Decentralized Budget Model

    C. Hybrid Budget Model

Q. 5. Please indicate the time interval that your institution utilized the model selected in question four.

    A. 10 or more years

    B. 5 to 10 years

    C. less than 5 years

Appendix D: 10-year Student Outcome Averages

10-year Percentage of First-time Degree/Certificate-Seeking Undergraduate Enrollment by Budget Model

Model	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	Average
Centralized Budget Model	28.14%	24.60%	26.17%	23.03%	24.37%	31.20%	30.66%	25.29%	24.19%	28.68%	**26.63%**
Centralized Budget Model	24.95%	26.13%	25.59%	23.73%	23.90%	23.83%	22.72%	23.62%	22.91%	25.33%	**24.27%**
Centralized Budget Model	14.26%	14.72%	13.48%	13.84%	12.34%	12.08%	13.63%	11.85%	12.07%	10.16%	**12.84%**
Centralized Budget Model	20.82%	20.78%	20.52%	20.24%	18.01%	19.22%	17.84%	15.89%	14.16%	15.06%	**18.25%**
Centralized Budget Model	23.94%	23.81%	23.79%	23.61%	21.90%	21.20%	23.38%	22.38%	21.72%	20.63%	**22.64%**
Centralized Budget Model	26.78%	23.53%	25.64%	26.17%	26.34%	22.84%	19.59%	23.39%	23.13%	22.36%	**23.98%**
Centralized Budget Model	18.45%	18.82%	17.90%	17.28%	18.26%	18.00%	16.67%	17.86%	19.24%	19.11%	**18.16%**
Centralized Budget Model	22.74%	20.46%	19.57%	20.71%	19.08%	16.10%	17.55%	17.87%	20.47%	22.63%	**19.72%**
Centralized Budget Model	22.79%	24.45%	22.37%	20.87%	20.27%	21.83%	22.50%	22.55%	24.86%	23.37%	**22.59%**
Centralized Budget Model	21.17%	19.31%	19.59%	20.08%	19.35%	20.02%	19.87%	19.19%	19.30%	20.56%	**19.84%**
Centralized Budget Model	20.22%	20.72%	21.52%	21.43%	21.78%	22.93%	16.68%	14.43%	19.22%	18.15%	**19.71%**
Centralized Budget Model	18.76%	18.77%	18.40%	17.81%	18.06%	17.78%	18.08%	16.26%	18.00%	17.36%	**17.93%**
Centralized Budget Model	24.47%	26.61%	28.84%	30.57%	27.21%	28.09%	25.20%	22.28%	21.53%	22.76%	**25.76%**
Centralized Budget Model	23.11%	26.21%	21.10%	23.64%	24.55%	19.86%	20.63%	18.64%	19.23%	18.47%	**21.55%**
Centralized Budget Model	17.78%	17.92%	18.22%	16.31%	16.97%	17.18%	18.58%	17.70%	16.27%	13.84%	**17.08%**
Centralized Budget Model	13.94%	15.58%	16.05%	16.77%	14.18%	11.40%	14.02%	15.06%	13.11%	11.89%	**14.20%**
Centralized Budget Model	23.83%	22.78%	22.59%	22.64%	23.47%	23.51%	23.75%	23.58%	24.74%	25.48%	**23.64%**
Centralized Budget Model	21.31%	20.56%	20.21%	20.25%	18.51%	18.86%	18.02%	18.33%	18.38%	19.34%	**19.38%**
Centralized Budget Model	19.65%	21.55%	22.80%	23.26%	20.03%	19.87%	21.39%	18.80%	19.01%	18.65%	**20.50%**
Centralized Budget Model	25.00%	24.36%	26.14%	26.58%	25.40%	26.26%	24.60%	23.28%	22.70%	23.52%	**24.78%**
Centralized Budget Model	23.73%	23.25%	22.72%	22.52%	21.36%	21.71%	20.94%	22.59%	21.64%	21.93%	**22.24%**
Centralized Budget Model	21.83%	21.02%	21.39%	25.99%	24.95%	25.71%	21.10%	23.58%	24.46%	24.92%	**23.49%**
Total	**21.71%**	**21.63%**	**21.57%**	**21.70%**	**20.92%**	**20.89%**	**20.34%**	**19.75%**	**20.02%**	**20.19%**	**20.87%**

Model	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	Average
Hybrid Budget Model	20.31%	24.49%	24.32%	15.82%	16.16%	17.75%	13.66%	15.62%	16.39%	17.12%	18.16%
Hybrid Budget Model	21.56%	25.46%	21.99%	25.51%	25.02%	26.39%	21.26%	24.86%	20.66%	22.00%	23.47%
Hybrid Budget Model	17.96%	17.02%	17.02%	18.94%	19.09%	18.02%	17.70%	17.12%	16.60%	16.92%	17.64%
Hybrid Budget Model	15.61%	14.82%	15.84%	16.46%	16.27%	15.18%	14.47%	13.68%	13.85%	14.75%	15.09%
Hybrid Budget Model	27.14%	25.24%	24.97%	23.14%	20.53%	22.29%	23.64%	24.49%	24.20%	25.93%	24.16%
Hybrid Budget Model	22.66%	23.46%	23.27%	24.08%	22.72%	21.70%	20.20%	20.97%	21.47%	21.53%	22.21%
Hybrid Budget Model	21.48%	22.18%	22.14%	22.53%	21.06%	22.98%	22.20%	20.09%	20.32%	22.24%	21.72%
Hybrid Budget Model	25.60%	23.72%	24.13%	23.87%	22.16%	23.49%	23.68%	21.88%	23.62%	22.99%	23.51%
Hybrid Budget Model	27.76%	26.64%	22.98%	25.60%	23.74%	22.91%	21.62%	22.11%	20.34%	26.21%	23.99%
Hybrid Budget Model	24.43%	23.66%	22.05%	21.57%	21.19%	19.50%	19.63%	18.88%	19.04%	19.69%	20.96%
Hybrid Budget Model	25.80%	24.00%	27.46%	23.78%	26.15%	25.46%	22.84%	24.40%	24.01%	25.26%	24.92%
Hybrid Budget Model	27.36%	27.88%	26.74%	25.50%	25.47%	23.47%	25.39%	26.64%	26.82%	26.13%	26.14%
Hybrid Budget Model	20.57%	18.80%	17.96%	19.05%	19.04%	18.44%	16.62%	15.96%	14.19%	14.26%	17.49%
Hybrid Budget Model	18.55%	17.63%	17.57%	17.34%	17.66%	18.22%	18.37%	18.76%	18.46%	17.93%	18.05%
Hybrid Budget Model	20.02%	19.58%	18.85%	18.01%	17.27%	16.83%	16.81%	16.27%	15.77%	16.82%	17.62%
Hybrid Budget Model	24.41%	20.69%	25.35%	22.04%	24.99%	21.65%	22.09%	21.70%	21.39%	19.36%	22.37%
Hybrid Budget Model	23.49%	21.47%	23.42%	24.88%	17.35%	18.95%	20.18%	20.72%	23.13%	20.54%	21.41%
Hybrid Budget Model	24.67%	23.83%	23.28%	21.15%	23.86%	25.76%	25.65%	25.16%	23.57%	27.33%	24.43%
Hybrid Budget Model	16.28%	16.00%	17.92%	18.54%	18.73%	17.36%	21.50%	17.47%	17.15%	17.04%	17.80%
Hybrid Budget Model	24.03%	25.60%	25.71%	24.68%	23.05%	22.52%	24.00%	24.39%	24.21%	25.27%	24.35%
Hybrid Budget Model	22.32%	22.74%	22.78%	22.63%	20.99%	22.89%	21.37%	20.99%	22.42%	22.31%	22.14%
Hybrid Budget Model	24.74%	23.64%	20.75%	19.43%	20.28%	20.39%	21.84%	23.92%	26.60%	26.79%	22.84%
Hybrid Budget Model	19.16%	20.77%	21.96%	20.10%	19.29%	19.13%	19.06%	20.28%	19.13%	18.13%	19.70%
Total	**22.53%**	**22.04%**	**22.01%**	**21.77%**	**21.18%**	**21.07%**	**20.91%**	**20.94%**	**20.77%**	**21.34%**	**21.45%**

10-year Percentage of Transfer-in Undergraduate Enrollment by Budget Model

Model	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	Average
Centralized Budget Model	3.73%	2.51%	3.30%	3.02%	2.53%	4.06%	3.61%	4.98%	5.99%	3.96%	**3.77%**
Centralized Budget Model	4.28%	4.40%	4.91%	5.14%	4.55%	4.40%	4.57%	4.22%	4.55%	4.76%	**4.58%**
Centralized Budget Model	14.63%	15.84%	14.66%	15.94%	14.77%	15.13%	14.77%	17.02%	14.81%	15.60%	**15.32%**
Centralized Budget Model	10.31%	10.81%	10.93%	12.09%	12.49%	13.70%	14.52%	14.32%	15.36%	15.17%	**12.97%**
Centralized Budget Model	5.41%	6.23%	5.60%	6.44%	5.77%	6.39%	6.18%	6.94%	9.76%	6.95%	**6.57%**
Centralized Budget Model	2.49%	3.59%	3.86%	4.40%	4.37%	4.56%	4.97%	5.17%	4.55%	4.55%	**4.25%**
Centralized Budget Model	10.90%	10.54%	9.67%	10.01%	8.79%	8.57%	8.66%	8.73%	9.26%	9.25%	**9.44%**
Centralized Budget Model	6.21%	6.52%	7.53%	6.50%	6.85%	6.76%	6.99%	7.95%	8.57%	7.07%	**7.10%**
Centralized Budget Model	7.40%	8.27%	7.48%	6.68%	7.29%	4.73%	4.56%	4.84%	4.39%	3.81%	**5.94%**
Centralized Budget Model	9.17%	9.46%	10.05%	10.56%	10.86%	11.02%	12.09%	11.50%	11.50%	10.49%	**10.67%**
Centralized Budget Model	10.20%	8.69%	12.06%	10.24%	10.34%	12.48%	9.89%	12.33%	11.16%	13.65%	**11.10%**
Centralized Budget Model	12.30%	12.49%	12.71%	13.25%	13.26%	13.56%	13.98%	13.79%	13.76%	12.86%	**13.20%**
Centralized Budget Model	5.86%	7.38%	7.78%	6.23%	9.33%	8.19%	8.04%	9.20%	9.87%	10.18%	**8.21%**
Centralized Budget Model	8.97%	12.02%	11.41%	10.94%	12.96%	10.09%	9.53%	8.41%	8.37%	9.01%	**10.17%**
Centralized Budget Model	13.04%	13.09%	12.95%	12.79%	13.54%	13.30%	15.07%	15.93%	15.04%	15.32%	**14.01%**
Centralized Budget Model	12.91%	13.23%	13.31%	14.55%	13.66%	14.72%	14.79%	15.23%	16.48%	16.78%	**14.56%**
Centralized Budget Model	10.36%	8.13%	6.80%	6.76%	6.54%	6.50%	6.76%	6.08%	5.82%	6.03%	**6.98%**
Centralized Budget Model	8.64%	9.09%	9.53%	9.31%	8.97%	10.69%	10.82%	9.32%	10.68%	10.75%	**9.78%**
Centralized Budget Model	10.59%	9.75%	9.16%	9.99%	11.19%	9.36%	10.34%	10.33%	11.91%	9.92%	**10.25%**
Centralized Budget Model	6.77%	6.62%	7.13%	6.81%	6.70%	6.78%	7.03%	7.17%	6.50%	7.78%	**6.93%**
Centralized Budget Model	4.42%	4.86%	4.95%	5.03%	5.48%	5.62%	5.29%	5.01%	5.42%	4.46%	**5.05%**
Centralized Budget Model	8.20%	7.83%	6.83%	6.88%	6.77%	7.58%	6.75%	6.35%	8.19%	6.67%	**7.21%**
Total	**8.49%**	**8.70%**	**8.75%**	**8.80%**	**8.96%**	**9.01%**	**9.06%**	**9.31%**	**9.63%**	**9.32%**	**9.00%**

Model	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	Average
Hybrid Budget Model	10.52%	10.98%	10.76%	11.38%	12.49%	11.79%	10.74%	9.51%	8.09%	9.22%	**10.55%**
Hybrid Budget Model	4.10%	4.16%	3.83%	3.83%	3.76%	5.04%	4.43%	4.49%	3.15%	3.83%	**4.06%**
Hybrid Budget Model	9.54%	9.53%	10.04%	7.71%	8.77%	10.59%	7.83%	9.67%	10.81%	8.06%	**9.25%**
Hybrid Budget Model	12.53%	12.21%	13.54%	12.11%	12.56%	15.03%	12.32%	13.19%	13.69%	14.12%	**13.13%**
Hybrid Budget Model	6.91%	5.07%	6.66%	7.94%	6.45%	7.43%	9.55%	7.29%	6.20%	5.42%	**6.89%**
Hybrid Budget Model	6.64%	6.35%	6.61%	7.05%	7.77%	7.27%	8.39%	8.17%	8.25%	8.03%	**7.45%**
Hybrid Budget Model	8.29%	8.42%	8.98%	6.84%	7.98%	8.76%	7.57%	8.10%	7.95%	8.83%	**8.17%**
Hybrid Budget Model	10.23%	10.30%	10.41%	9.81%	10.43%	10.41%	9.83%	9.99%	8.65%	9.82%	**9.99%**
Hybrid Budget Model	9.47%	9.98%	9.38%	8.61%	7.90%	10.44%	10.75%	9.91%	10.67%	8.72%	**9.58%**
Hybrid Budget Model	6.14%	5.43%	7.34%	7.15%	7.47%	8.55%	8.81%	9.13%	8.45%	7.12%	**7.56%**
Hybrid Budget Model	11.19%	11.59%	11.52%	10.88%	10.81%	8.51%	10.01%	10.94%	10.23%	12.08%	**10.78%**
Hybrid Budget Model	5.81%	6.24%	5.19%	5.22%	6.53%	6.32%	5.92%	4.18%	4.92%	4.64%	**5.50%**
Hybrid Budget Model	11.24%	10.91%	12.22%	11.97%	11.35%	12.47%	12.99%	7.76%	9.00%	9.09%	**10.90%**
Hybrid Budget Model	12.46%	13.04%	11.29%	11.14%	10.51%	10.15%	9.93%	9.72%	9.75%	10.11%	**10.81%**
Hybrid Budget Model	12.61%	13.76%	12.86%	14.01%	14.24%	13.54%	13.97%	13.67%	14.27%	13.58%	**13.65%**
Hybrid Budget Model	9.66%	9.84%	8.10%	10.95%	9.32%	11.58%	11.95%	12.04%	11.39%	11.09%	**10.59%**
Hybrid Budget Model	9.22%	8.67%	8.51%	8.77%	13.17%	14.99%	15.21%	16.12%	13.59%	12.67%	**12.09%**
Hybrid Budget Model	10.12%	8.94%	7.61%	8.27%	6.87%	6.87%	7.46%	7.45%	7.04%	7.52%	**7.81%**
Hybrid Budget Model	13.09%	12.95%	11.55%	12.38%	9.78%	12.06%	12.29%	15.54%	14.98%	16.07%	**13.07%**
Hybrid Budget Model	6.80%	7.46%	7.77%	7.58%	7.99%	7.21%	7.60%	7.30%	8.13%	6.93%	**7.48%**
Hybrid Budget Model	6.17%	6.65%	7.26%	7.53%	7.27%	7.17%	7.40%	7.18%	6.69%	7.57%	**7.09%**
Hybrid Budget Model	9.46%	9.52%	10.06%	8.24%	8.11%	7.77%	7.30%	7.74%	7.50%	7.63%	**8.33%**
Hybrid Budget Model	10.73%	10.75%	11.59%	10.30%	9.76%	9.04%	10.44%	10.81%	11.30%	9.86%	**10.46%**
Total	**9.26%**	**9.25%**	**9.27%**	**9.12%**	**9.19%**	**9.69%**	**9.68%**	**9.56%**	**9.33%**	**9.22%**	**9.36%**

10-year Average Retention Rate for All Continuing Undergraduate Enrollment by Budget Model

Model	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	Average
Centralized Budget Model	59	59	63	60	57	62	62	54	64	53	**59.30**
Centralized Budget Model	78	78	81	82	81	78	77	79	80	78	**79.20**
Centralized Budget Model	71	68	71	69	67	73	68	67	60	66	**68.00**
Centralized Budget Model	72	70	71	71	70	67	65	66	64	66	**68.20**
Centralized Budget Model	64	64	63	58	60	53	54	65	65	66	**61.20**
Centralized Budget Model	79	80	81	80	80	79	76	74	74	74	**77.70**
Centralized Budget Model	76	76	75	73	71	68	70	70	73	73	**72.50**
Centralized Budget Model	72	75	70	76	75	72	72	73	67	68	**72.00**
Centralized Budget Model	77	79	75	75	79	80	74	74	72	77	**76.20**
Centralized Budget Model	76	77	75	76	78	78	70	73	73	74	**75.00**
Centralized Budget Model	62	57	63	54	58	58	63	53	61	63	**59.20**
Centralized Budget Model	76	77	77	80	79	78	75	73	72	75	**76.20**
Centralized Budget Model	58	56	58	59	56	57	63	60	65	62	**59.40**
Centralized Budget Model	54	57	50	46	53	55	61	61	61	67	**56.50**
Centralized Budget Model	73	78	79	76	74	73	69	68	72	75	**73.70**
Centralized Budget Model	68	69	68	72	71	70	67	62	64	65	**67.60**
Centralized Budget Model	71	74	73	75	79	76	74	74	70	73	**73.90**
Centralized Budget Model	75	76	77	77	77	75	72	73	73	72	**74.70**
Centralized Budget Model	75	76	75	76	72	71	69	71	65	71	**72.10**
Centralized Budget Model	69	72	72	72	74	71	71	74	73	74	**72.20**
Centralized Budget Model	86	83	86	85	86	87	86	85	86	84	**85.40**
Centralized Budget Model	75	79	77	79	77	79	81	80	80	79	**78.60**
Total	**71.18**	**71.82**	**71.82**	**71.41**	**71.55**	**70.91**	**69.95**	**69.50**	**69.73**	**70.68**	**70.85**

Model	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	Average
Hybrid Budget Model	68	72	75	72	74	70	71	75	71	70	**71.80**
Hybrid Budget Model	94	95	95	93	93	92	93	93	91	91	**93.00**
Hybrid Budget Model	81	81	79	83	83	83	83	86	87	80	**82.60**
Hybrid Budget Model	81	83	81	80	83	83	82	83	80	79	**81.50**
Hybrid Budget Model	62	64	67	65	67	64	62	61	65	63	**64.00**
Hybrid Budget Model	73	73	74	74	72	71	68	66	69	69	**70.90**
Hybrid Budget Model	73	78	75	75	77	78	75	73	78	77	**75.90**
Hybrid Budget Model	62	57	65	63	52	65	61	65	63	60	**61.30**
Hybrid Budget Model	60	60	63	65	64	61	63	64	61	58	**61.90**
Hybrid Budget Model	75	77	77	76	77	81	79	81	81	82	**78.60**
Hybrid Budget Model	60	54	57	53	60	59	62	59	57	58	**57.90**
Hybrid Budget Model	74	71	69	66	67	68	67	64	71	71	**68.80**
Hybrid Budget Model	89	89	89	89	88	88	89	89	86	81	**87.70**
Hybrid Budget Model	83	86	87	89	89	87	87	88	87	88	**87.10**
Hybrid Budget Model	74	78	82	82	82	81	81	84	85	86	**81.50**
Hybrid Budget Model	70	67	71	66	68	68	67	67	68	66	**67.80**
Hybrid Budget Model	67	68	71	69	64	64	61	56	59	59	**63.80**
Hybrid Budget Model	73	73	74	71	70	69	67	69	68	67	**70.10**
Hybrid Budget Model	80	77	74	72	74	70	71	73	73	79	**74.30**
Hybrid Budget Model	72	71	71	72	68	66	67	70	69	68	**69.40**
Hybrid Budget Model	70	69	73	76	76	73	70	71	75	71	**72.40**
Hybrid Budget Model	65	69	71	70	69	69	67	67	68	72	**68.70**
Hybrid Budget Model	70	73	72	68	65	65	67	62	66	66	**67.40**
Total	**72.87**	**73.26**	**74.43**	**73.43**	**73.13**	**72.83**	**72.17**	**72.43**	**72.96**	**72.22**	**72.97**

10-year Six-year Graduation Rate of Full-time, First-time, Degree/Certificate-seeking Undergraduate Enrollment by Budget Model

Model	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	10-year Average
Centralized Budget Model	27.69%	21.65%	27.54%	26.32%	25.17%	26.35%	26.21%	23.99%	21.74%	21.20%	**24.78%**
Centralized Budget Model	61.75%	62.10%	61.11%	60.32%	59.88%	57.03%	55.60%	57.45%	60.05%	60.62%	**59.59%**
Centralized Budget Model	30.61%	33.73%	32.46%	33.63%	28.57%	28.02%	27.45%	22.06%	30.80%	23.72%	**29.10%**
Centralized Budget Model	43.15%	40.85%	38.78%	39.30%	31.98%	33.58%	29.95%	29.83%	28.86%	26.32%	**34.26%**
Centralized Budget Model	29.64%	32.71%	32.10%	32.89%	34.60%	32.52%	31.39%	29.02%	29.88%	32.26%	**31.70%**
Centralized Budget Model	54.18%	52.89%	53.00%	53.93%	50.03%	47.65%	49.40%	49.20%	46.53%	47.93%	**50.47%**
Centralized Budget Model	44.01%	42.55%	43.77%	46.20%	45.65%	45.01%	44.85%	45.61%	45.79%	44.68%	**44.81%**
Centralized Budget Model	37.52%	32.28%	30.29%	32.10%	33.75%	28.58%	28.14%	31.51%	32.21%	32.48%	**31.89%**
Centralized Budget Model	42.74%	43.48%	43.84%	47.93%	42.89%	42.55%	40.68%	38.34%	37.19%	37.68%	**41.73%**
Centralized Budget Model	45.71%	46.83%	43.97%	45.60%	42.95%	43.36%	40.33%	39.69%	40.67%	43.70%	**43.28%**
Centralized Budget Model	36.05%	35.39%	36.56%	36.67%	40.10%	34.80%	25.82%	36.87%	38.30%	32.75%	**35.33%**
Centralized Budget Model	51.27%	50.61%	49.25%	53.06%	50.61%	48.43%	50.30%	49.38%	45.13%	43.59%	**49.16%**
Centralized Budget Model	36.25%	34.52%	36.75%	38.01%	40.21%	38.82%	39.72%	37.58%	38.79%	39.53%	**38.02%**
Centralized Budget Model	23.37%	17.31%	18.52%	16.15%	16.33%	12.03%	11.75%	13.27%	11.19%	12.75%	**15.27%**
Centralized Budget Model	35.51%	38.48%	41.31%	43.94%	41.46%	47.14%	39.32%	48.25%	43.54%	45.52%	**42.45%**
Centralized Budget Model	31.99%	30.45%	30.03%	26.55%	24.38%	20.40%	21.19%	21.34%	16.93%	20.57%	**24.38%**
Centralized Budget Model	48.47%	48.77%	45.62%	47.45%	49.03%	49.86%	48.21%	48.49%	47.68%	45.85%	**47.94%**
Centralized Budget Model	47.68%	45.22%	46.54%	44.62%	42.11%	46.06%	42.84%	44.83%	44.71%	42.54%	**44.71%**
Centralized Budget Model	44.54%	43.50%	37.78%	38.87%	32.16%	32.29%	27.39%	33.06%	39.67%	40.97%	**37.02%**
Centralized Budget Model	40.49%	41.21%	38.98%	40.84%	42.87%	36.89%	39.21%	34.96%	36.54%	31.97%	**38.40%**
Centralized Budget Model	70.55%	67.76%	68.35%	68.35%	67.20%	69.79%	68.09%	70.37%	68.92%	65.40%	**68.48%**
Centralized Budget Model	65.04%	66.28%	62.65%	62.69%	58.50%	59.81%	58.33%	60.50%	57.73%	58.64%	**61.02%**
Total	**43.10%**	**42.21%**	**41.78%**	**42.52%**	**40.93%**	**40.04%**	**38.46%**	**39.34%**	**39.22%**	**38.67%**	**40.63%**

Model	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	10-year Average
Hybrid Budget Model	39.62%	37.17%	41.26%	32.68%	35.24%	34.64%	40.63%	37.32%	39.37%	41.34%	**37.93%**
Hybrid Budget Model	82.11%	79.73%	75.78%	75.00%	69.72%	72.21%	74.59%	72.93%	71.66%	69.40%	**74.31%**
Hybrid Budget Model	55.60%	56.51%	58.46%	52.36%	48.59%	48.06%	49.45%	50.56%	47.77%	48.01%	**51.54%**
Hybrid Budget Model	48.07%	48.88%	45.97%	43.73%	42.85%	41.43%	41.63%	42.02%	43.89%	41.55%	**44.00%**
Hybrid Budget Model	34.60%	33.98%	38.71%	33.76%	35.76%	37.77%	33.70%	39.14%	38.58%	32.37%	**35.84%**
Hybrid Budget Model	49.29%	44.95%	45.33%	42.09%	39.24%	36.96%	37.77%	37.49%	37.66%	38.17%	**40.90%**
Hybrid Budget Model	59.65%	53.95%	53.01%	56.75%	50.29%	50.82%	47.25%	51.75%	52.14%	50.60%	**52.62%**
Hybrid Budget Model	40.18%	44.82%	40.47%	38.39%	36.62%	38.25%	36.86%	37.85%	34.26%	33.04%	**38.07%**
Hybrid Budget Model	39.47%	39.53%	29.72%	27.84%	28.15%	22.43%	21.31%	26.93%	27.18%	30.04%	**29.26%**
Hybrid Budget Model	61.66%	61.09%	61.93%	64.13%	60.65%	64.55%	64.53%	61.13%	61.28%	61.73%	**62.27%**
Hybrid Budget Model	27.54%	25.65%	20.40%	34.38%	31.40%	30.86%	36.92%	30.82%	31.17%	34.23%	**30.34%**
Hybrid Budget Model	34.79%	31.48%	34.07%	37.83%	36.52%	36.15%	34.11%	31.66%	32.20%	36.83%	**34.56%**
Hybrid Budget Model	74.24%	73.31%	68.06%	65.99%	66.16%	66.03%	65.57%	66.18%	66.30%	61.25%	**67.31%**
Hybrid Budget Model	72.29%	72.45%	72.73%	73.93%	70.49%	72.70%	69.31%	66.99%	68.93%	70.61%	**71.04%**
Hybrid Budget Model	65.90%	68.13%	68.87%	68.11%	66.76%	67.29%	65.55%	65.05%	61.85%	62.30%	**65.98%**
Hybrid Budget Model	46.35%	43.00%	43.99%	44.66%	43.36%	38.93%	39.23%	37.52%	39.03%	39.12%	**41.52%**
Hybrid Budget Model	34.74%	29.14%	32.75%	35.41%	34.10%	32.01%	33.83%	47.37%	24.52%	27.44%	**33.13%**
Hybrid Budget Model	45.17%	44.26%	43.60%	39.83%	37.14%	38.21%	39.46%	37.57%	42.19%	40.48%	**40.79%**
Hybrid Budget Model	44.05%	48.80%	47.49%	51.46%	42.32%	45.06%	48.31%	47.38%	45.34%	44.21%	**46.44%**
Hybrid Budget Model	47.75%	48.36%	47.60%	46.35%	46.38%	44.76%	45.59%	46.39%	49.34%	49.95%	**47.25%**
Hybrid Budget Model	54.25%	54.23%	57.28%	53.15%	54.26%	52.49%	52.50%	53.17%	55.41%	52.95%	**53.97%**
Hybrid Budget Model	37.01%	36.43%	36.41%	39.14%	40.23%	41.03%	43.45%	40.99%	43.29%	40.20%	**39.82%**
Hybrid Budget Model	38.83%	34.13%	35.62%	34.53%	36.58%	33.51%	36.57%	41.02%	41.47%	42.30%	**37.46%**
Total	**49.71%**	**48.76%**	**48.10%**	**48.13%**	**46.25%**	**45.98%**	**46.25%**	**46.91%**	**46.16%**	**45.76%**	**47.20%**

10-year Percentage of First-time Degree/Certificate-Seeking Undergraduate Enrollment by Institutional Size

Size	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	Average
Large	24.95%	26.13%	25.59%	23.73%	23.90%	23.83%	22.72%	23.62%	22.91%	25.33%	**24.27%**
Large	18.45%	18.82%	17.90%	17.28%	18.26%	18.00%	16.67%	17.86%	19.24%	19.11%	**18.16%**
Large	21.17%	19.31%	19.59%	20.08%	19.35%	20.02%	19.87%	19.19%	19.30%	20.56%	**19.84%**
Large	18.76%	18.77%	18.40%	17.81%	18.06%	17.78%	18.08%	16.26%	18.00%	17.36%	**17.93%**
Large	19.01%	19.54%	20.22%	19.51%	20.95%	16.58%	18.06%	20.09%	21.66%	20.21%	**19.58%**
Large	21.65%	22.04%	22.28%	21.82%	21.94%	22.48%	22.61%	22.50%	23.45%	23.60%	**22.44%**
Large	21.56%	25.46%	21.99%	25.51%	25.02%	26.39%	21.26%	24.86%	20.66%	22.00%	**23.47%**
Large	17.96%	17.02%	17.02%	18.94%	19.09%	18.02%	17.70%	17.12%	16.60%	16.92%	**17.64%**
Large	15.61%	14.82%	15.84%	16.46%	16.27%	15.18%	14.47%	13.68%	13.85%	14.75%	**15.09%**
Large	22.66%	23.46%	23.27%	24.08%	22.72%	21.70%	20.20%	20.97%	21.47%	21.53%	**22.21%**
Large	20.57%	18.80%	17.96%	19.05%	19.04%	18.44%	16.62%	15.96%	14.19%	14.26%	**17.49%**
Total	**20.21%**	**20.38%**	**20.00%**	**20.39%**	**20.42%**	**19.86%**	**18.93%**	**19.28%**	**19.21%**	**19.60%**	**19.83%**

Size	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	Average
Medium	28.14%	24.60%	26.17%	23.03%	24.37%	31.20%	30.66%	25.29%	24.19%	28.68%	**26.63%**
Medium	14.26%	14.72%	13.48%	13.84%	12.34%	12.08%	13.63%	11.85%	12.07%	10.16%	**12.84%**
Medium	20.82%	20.78%	20.52%	20.24%	18.01%	19.22%	17.84%	15.89%	14.16%	15.06%	**18.25%**
Medium	23.94%	23.81%	23.79%	23.61%	21.90%	21.20%	23.38%	22.38%	21.72%	20.63%	**22.64%**
Medium	26.78%	23.53%	25.64%	26.17%	26.34%	22.84%	19.59%	23.39%	23.13%	22.36%	**23.98%**
Medium	22.74%	20.46%	19.57%	20.71%	19.08%	16.10%	17.55%	17.87%	20.47%	22.63%	**19.72%**
Medium	22.79%	24.45%	22.37%	20.87%	20.27%	21.83%	22.50%	22.55%	24.86%	23.37%	**22.59%**
Medium	24.47%	26.61%	28.84%	30.57%	27.21%	28.09%	25.20%	22.28%	21.53%	22.76%	**25.76%**
Medium	23.11%	26.21%	21.10%	23.64%	24.55%	19.86%	20.63%	18.64%	19.23%	18.47%	**21.55%**
Medium	17.78%	17.92%	18.22%	16.31%	16.97%	17.18%	18.58%	17.70%	16.27%	13.84%	**17.08%**
Medium	13.94%	15.58%	16.05%	16.77%	14.18%	11.40%	14.02%	15.06%	13.11%	11.89%	**14.20%**
Medium	23.83%	22.78%	22.59%	22.64%	23.47%	23.51%	23.75%	23.58%	24.74%	25.48%	**23.64%**
Medium	21.31%	20.56%	20.21%	20.25%	18.51%	18.86%	18.02%	18.33%	18.38%	19.34%	**19.38%**
Medium	19.65%	21.55%	22.80%	23.26%	20.03%	19.87%	21.39%	18.80%	19.01%	18.65%	**20.50%**
Medium	25.00%	24.36%	26.14%	26.58%	25.40%	26.26%	24.60%	23.28%	22.70%	23.52%	**24.78%**
Medium	23.73%	23.25%	22.72%	22.52%	21.36%	21.71%	20.94%	22.59%	21.64%	21.93%	**22.24%**
Medium	21.83%	21.02%	21.39%	25.99%	24.95%	25.71%	21.10%	23.58%	24.46%	24.92%	**23.49%**
Medium	20.31%	24.49%	24.32%	15.82%	16.16%	17.75%	13.66%	15.62%	16.39%	17.12%	**18.16%**
Medium	21.48%	22.18%	22.14%	22.53%	21.06%	22.98%	22.20%	20.09%	20.32%	22.24%	**21.72%**
Medium	25.60%	23.72%	24.13%	23.87%	22.16%	23.49%	23.68%	21.88%	23.62%	22.99%	**23.51%**
Medium	24.43%	23.66%	22.05%	21.57%	21.19%	19.50%	19.63%	18.88%	19.04%	19.69%	**20.96%**
Medium	27.36%	27.88%	26.74%	25.50%	25.47%	23.47%	25.39%	26.64%	26.82%	26.13%	**26.14%**
Medium	18.55%	17.63%	17.57%	17.34%	17.66%	18.22%	18.37%	18.76%	18.46%	17.93%	**18.05%**
Medium	20.02%	19.58%	18.85%	18.01%	17.27%	16.83%	16.81%	16.27%	15.77%	16.82%	**17.62%**
Medium	24.41%	20.69%	25.35%	22.04%	24.99%	21.65%	22.09%	21.70%	21.39%	19.36%	**22.37%**
Medium	23.49%	21.47%	23.42%	24.88%	17.35%	18.95%	20.18%	20.72%	23.13%	20.54%	**21.41%**
Medium	24.67%	23.83%	23.28%	21.15%	23.86%	25.76%	25.65%	25.16%	23.57%	27.33%	**24.43%**
Medium	16.28%	16.00%	17.92%	18.54%	18.73%	17.36%	21.50%	17.47%	17.15%	17.04%	**17.80%**
Medium	24.03%	25.60%	25.71%	24.68%	23.05%	22.52%	24.00%	24.39%	24.21%	25.27%	**24.35%**
Medium	22.32%	22.74%	22.78%	22.63%	20.99%	22.89%	21.37%	20.99%	22.42%	22.31%	**22.14%**
Medium	24.74%	23.64%	20.75%	19.43%	20.28%	20.39%	21.84%	23.92%	26.60%	26.79%	**22.84%**
Medium	19.16%	20.77%	21.96%	20.10%	19.29%	19.13%	19.06%	20.28%	19.13%	18.13%	**19.70%**
Total	**22.22%**	**22.07%**	**22.14%**	**21.72%**	**20.89%**	**20.87%**	**20.90%**	**20.49%**	**20.62%**	**20.73%**	**21.26%**

10-year Percentage of Transfer-in Undergraduate Enrollment by Institutional Size

Size	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	Average
Large	4.28%	4.40%	4.91%	5.14%	4.55%	4.40%	4.57%	4.22%	4.55%	4.76%	**4.58%**
Large	10.90%	10.54%	9.67%	10.01%	8.79%	8.57%	8.66%	8.73%	9.26%	9.25%	**9.44%**
Large	9.17%	9.46%	10.05%	10.56%	10.86%	11.02%	12.09%	11.50%	11.50%	10.49%	**10.67%**
Large	12.30%	12.49%	12.71%	13.25%	13.26%	13.56%	13.98%	13.79%	13.76%	12.86%	**13.20%**
Large	5.52%	5.83%	6.39%	7.27%	6.55%	6.66%	6.77%	7.18%	6.84%	6.50%	**6.55%**
Large	5.97%	6.72%	6.84%	7.11%	6.73%	6.43%	6.59%	7.34%	6.94%	7.55%	**6.82%**
Large	4.10%	4.16%	3.83%	3.83%	3.76%	5.04%	4.43%	4.49%	3.15%	3.83%	**4.06%**
Large	9.54%	9.53%	10.04%	7.71%	8.77%	10.59%	7.83%	9.67%	10.81%	8.06%	**9.25%**
Large	12.53%	12.21%	13.54%	12.11%	12.56%	15.03%	12.32%	13.19%	13.69%	14.12%	**13.13%**
Large	6.64%	6.35%	6.61%	7.05%	7.77%	7.27%	8.39%	8.17%	8.25%	8.03%	**7.45%**
Large	11.24%	10.91%	12.22%	11.97%	11.35%	12.47%	12.99%	7.76%	9.00%	9.09%	**10.90%**
Total	**8.38%**	**8.42%**	**8.80%**	**8.73%**	**8.63%**	**9.19%**	**8.97%**	**8.73%**	**8.89%**	**8.59%**	**8.73%**

Size	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	Average
Medium	3.73%	2.51%	3.30%	3.02%	2.53%	4.06%	3.61%	4.98%	5.99%	3.96%	**3.77%**
Medium	14.63%	15.84%	14.66%	15.94%	14.77%	15.13%	14.77%	17.02%	14.81%	15.60%	**15.32%**
Medium	10.31%	10.81%	10.93%	12.09%	12.49%	13.70%	14.52%	14.32%	15.36%	15.17%	**12.97%**
Medium	5.41%	6.23%	5.60%	6.44%	5.77%	6.39%	6.18%	6.94%	9.76%	6.95%	**6.57%**
Medium	2.49%	3.59%	3.86%	4.40%	4.37%	4.56%	4.97%	5.17%	4.55%	4.55%	**4.25%**
Medium	6.21%	6.52%	7.53%	6.50%	6.85%	6.76%	6.99%	7.95%	8.57%	7.07%	**7.10%**
Medium	7.40%	8.27%	7.48%	6.68%	7.29%	4.73%	4.56%	4.84%	4.39%	3.81%	**5.94%**
Medium	5.86%	7.38%	7.78%	6.23%	9.33%	8.19%	8.04%	9.20%	9.87%	10.18%	**8.21%**
Medium	8.97%	12.02%	11.41%	10.94%	12.96%	10.09%	9.53%	8.41%	8.37%	9.01%	**10.17%**
Medium	13.04%	13.09%	12.95%	12.79%	13.54%	13.30%	15.07%	15.93%	15.04%	15.32%	**14.01%**
Medium	12.91%	13.23%	13.31%	14.55%	13.66%	14.72%	14.79%	15.23%	16.48%	16.78%	**14.56%**
Medium	10.36%	8.13%	6.80%	6.76%	6.54%	6.50%	6.76%	6.08%	5.82%	6.03%	**6.98%**
Medium	8.64%	9.09%	9.53%	9.31%	8.97%	10.69%	10.82%	9.32%	10.68%	10.75%	**9.78%**
Medium	10.59%	9.75%	9.16%	9.99%	11.19%	9.36%	10.34%	10.33%	11.91%	9.92%	**10.25%**
Medium	6.77%	6.62%	7.13%	6.81%	6.70%	6.78%	7.03%	7.17%	6.50%	7.78%	**6.93%**
Medium	4.42%	4.86%	4.95%	5.03%	5.48%	5.62%	5.29%	5.01%	5.42%	4.46%	**5.05%**
Medium	8.20%	7.83%	6.83%	6.88%	6.77%	7.58%	6.75%	6.35%	8.19%	6.67%	**7.21%**
Medium	10.52%	10.98%	10.76%	11.38%	12.49%	11.79%	10.74%	9.51%	8.09%	9.22%	**10.55%**
Medium	8.29%	8.42%	8.98%	6.84%	7.98%	8.76%	7.57%	8.10%	7.95%	8.83%	**8.17%**
Medium	10.23%	10.30%	10.41%	9.81%	10.43%	10.41%	9.83%	9.99%	8.65%	9.82%	**9.99%**
Medium	6.14%	5.43%	7.34%	7.15%	7.47%	8.55%	8.81%	9.13%	8.45%	7.12%	**7.56%**
Medium	5.81%	6.24%	5.19%	5.22%	6.53%	6.32%	5.92%	4.18%	4.92%	4.64%	**5.50%**
Medium	12.46%	13.04%	11.29%	11.14%	10.51%	10.15%	9.93%	9.72%	9.75%	10.11%	**10.81%**
Medium	12.61%	13.76%	12.86%	14.01%	14.24%	13.54%	13.97%	13.67%	14.27%	13.58%	**13.65%**
Medium	9.66%	9.84%	8.10%	10.95%	9.32%	11.58%	11.95%	12.04%	11.39%	11.09%	**10.59%**
Medium	9.22%	8.67%	8.51%	8.77%	13.17%	14.99%	15.21%	16.12%	13.59%	12.67%	**12.09%**
Medium	10.12%	8.94%	7.61%	8.27%	6.87%	6.87%	7.46%	7.45%	7.04%	7.52%	**7.81%**
Medium	13.09%	12.95%	11.55%	12.38%	9.78%	12.06%	12.29%	15.54%	14.98%	16.07%	**13.07%**
Medium	6.80%	7.46%	7.77%	7.58%	7.99%	7.21%	7.60%	7.30%	8.13%	6.93%	**7.48%**
Medium	6.17%	6.65%	7.26%	7.53%	7.27%	7.17%	7.40%	7.18%	6.69%	7.57%	**7.09%**
Medium	9.46%	9.52%	10.06%	8.24%	8.11%	7.77%	7.30%	7.74%	7.50%	7.63%	**8.33%**
Medium	10.73%	10.75%	11.59%	10.30%	9.76%	9.04%	10.44%	10.81%	11.30%	9.86%	**10.46%**
Total	**8.79%**	**9.02%**	**8.83%**	**8.87%**	**9.10%**	**9.20%**	**9.26%**	**9.46%**	**9.51%**	**9.27%**	**9.13%**

10-year Average Retention Rate for All Continuing Undergraduate Enrollment by Institutional Size

Size	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	Average
Large	78	78	81	82	81	78	77	79	80	78	**79.20**
Large	76	76	75	73	71	68	70	70	73	73	**72.50**
Large	76	77	75	76	78	78	70	73	73	74	**75.00**
Large	76	77	77	80	79	78	75	73	72	75	**76.20**
Large	77	77	78	79	76	77	76	76	80	76	**77.20**
Large	78	79	81	82	81	80	77	80	80	81	**79.90**
Large	94	95	95	93	93	92	93	93	91	91	**93.00**
Large	81	81	79	83	83	83	83	86	87	80	**82.60**
Large	81	83	81	80	83	83	82	83	80	79	**81.50**
Large	73	73	74	74	72	71	68	66	69	69	**70.90**
Large	89	89	89	89	88	88	89	89	86	81	**87.70**
Total	**80**	**80**	**80**	**81**	**80**	**80**	**78**	**79**	**79**	**78**	**79.61**

Size	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	Average
Medium	59	59	63	60	57	62	62	54	64	53	**59.30**
Medium	71	68	71	69	67	73	68	67	60	66	**68.00**
Medium	72	70	71	71	70	67	65	66	64	66	**68.20**
Medium	64	64	63	58	60	53	54	65	65	66	**61.20**
Medium	79	80	81	80	80	79	76	74	74	74	**77.70**
Medium	72	75	70	76	75	72	72	73	67	68	**72.00**
Medium	77	79	75	75	79	80	74	74	72	77	**76.20**
Medium	58	56	58	59	56	57	63	60	65	62	**59.40**
Medium	54	57	50	46	53	55	61	61	61	67	**56.50**
Medium	73	78	79	76	74	73	69	68	72	75	**73.70**
Medium	68	69	68	72	71	70	67	62	64	65	**67.60**
Medium	71	74	73	75	79	76	74	74	70	73	**73.90**
Medium	75	76	77	77	77	75	72	73	73	72	**74.70**
Medium	75	76	75	76	72	71	69	71	65	71	**72.10**
Medium	69	72	72	72	74	71	71	74	73	74	**72.20**
Medium	86	83	86	85	86	87	86	85	86	84	**85.40**
Medium	75	79	77	79	77	79	81	80	80	79	**78.60**
Medium	68	72	75	72	74	70	71	75	71	70	**71.80**
Medium	73	78	75	75	77	78	75	73	78	77	**75.90**
Medium	62	57	65	63	52	65	61	65	63	60	**61.30**
Medium	75	77	77	76	77	81	79	81	81	82	**78.60**
Medium	74	71	69	66	67	68	67	64	71	71	**68.80**
Medium	83	86	87	89	89	87	87	88	87	88	**87.10**
Medium	74	78	82	82	82	81	81	84	85	86	**81.50**
Medium	70	67	71	66	68	68	67	67	68	66	**67.80**
Medium	67	68	71	69	64	64	61	56	59	59	**63.80**
Medium	73	73	74	71	70	69	67	69	68	67	**70.10**
Medium	80	77	74	72	74	70	71	73	73	79	**74.30**
Medium	72	71	71	72	68	66	67	70	69	68	**69.40**
Medium	70	69	73	76	76	73	70	71	75	71	**72.40**
Medium	65	69	71	70	69	69	67	67	68	72	**68.70**
Medium	70	73	72	68	65	65	67	62	66	66	**67.40**
Total	**71**	**72**	**72**	**72**	**71**	**71**	**70**	**70**	**71**	**71**	**71.11**

10-year Six-year Graduation Rate of Full-time, First-time, Degree/Certificate-seeking Undergraduate Enrollment by Institutional Size

Size	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	Average
Large	61.75%	62.10%	61.11%	60.32%	59.88%	57.03%	55.60%	57.45%	60.05%	60.62%	**59.59%**
Large	44.01%	42.55%	43.77%	46.20%	45.65%	45.01%	44.85%	45.61%	45.79%	44.68%	**44.81%**
Large	45.71%	46.83%	43.97%	45.60%	42.95%	43.36%	40.33%	39.69%	40.67%	43.70%	**43.28%**
Large	51.27%	50.61%	49.25%	53.06%	50.61%	48.43%	50.30%	49.38%	45.13%	43.59%	**49.16%**
Large	58.36%	57.47%	58.98%	55.54%	59.29%	57.20%	54.25%	54.35%	57.17%	57.46%	**57.01%**
Large	49.94%	51.38%	50.37%	51.32%	50.46%	50.42%	46.53%	45.00%	47.35%	45.44%	**48.82%**
Large	82.11%	79.73%	75.78%	75.00%	69.72%	72.21%	74.59%	72.93%	71.66%	69.40%	**74.31%**
Large	55.60%	56.51%	58.46%	52.36%	48.59%	48.06%	49.45%	50.56%	47.77%	48.01%	**51.54%**
Large	48.07%	48.88%	45.97%	43.73%	42.85%	41.43%	41.63%	42.02%	43.89%	41.55%	**44.00%**
Large	49.29%	44.95%	45.33%	42.09%	39.24%	36.96%	37.77%	37.49%	37.66%	38.17%	**40.90%**
Large	74.24%	73.31%	68.06%	65.99%	66.16%	66.03%	65.57%	66.18%	66.30%	61.25%	**67.31%**
Total	**56.40%**	**55.85%**	**54.64%**	**53.75%**	**52.31%**	**51.47%**	**50.99%**	**50.97%**	**51.22%**	**50.35%**	**52.79%**

Size	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	Average
Medium	27.69%	21.65%	27.54%	26.32%	25.17%	26.35%	26.21%	23.99%	21.74%	21.20%	**24.78%**
Medium	30.61%	33.73%	32.46%	33.63%	28.57%	28.02%	27.45%	22.06%	30.80%	23.72%	**29.10%**
Medium	43.15%	40.85%	38.78%	39.30%	31.98%	33.58%	29.95%	29.83%	28.86%	26.32%	**34.26%**
Medium	29.64%	32.71%	32.10%	32.89%	34.60%	32.52%	31.39%	29.02%	29.88%	32.26%	**31.70%**
Medium	54.18%	52.89%	53.00%	53.93%	50.03%	47.65%	49.40%	49.20%	46.53%	47.93%	**50.47%**
Medium	37.52%	32.28%	30.29%	32.10%	33.75%	28.58%	28.14%	31.51%	32.21%	32.48%	**31.89%**
Medium	42.74%	43.48%	43.84%	47.93%	42.89%	42.55%	40.68%	38.34%	37.19%	37.68%	**41.73%**
Medium	36.25%	34.52%	36.75%	38.01%	40.21%	38.82%	39.72%	37.58%	38.79%	39.53%	**38.02%**
Medium	23.37%	17.31%	18.52%	16.15%	16.33%	12.03%	11.75%	13.27%	11.19%	12.75%	**15.27%**
Medium	35.51%	38.48%	41.31%	43.94%	41.46%	47.14%	39.32%	48.25%	43.54%	45.52%	**42.45%**
Medium	31.99%	30.45%	30.03%	26.55%	24.38%	20.40%	21.19%	21.34%	16.93%	20.57%	**24.38%**
Medium	48.47%	48.77%	45.62%	47.45%	49.03%	49.86%	48.21%	48.49%	47.68%	45.85%	**47.94%**
Medium	47.68%	45.22%	46.54%	44.62%	42.11%	46.06%	42.84%	44.83%	44.71%	42.54%	**44.71%**
Medium	44.54%	43.50%	37.78%	38.87%	32.16%	32.29%	27.39%	33.06%	39.67%	40.97%	**37.02%**
Medium	40.49%	41.21%	38.98%	40.84%	42.87%	36.89%	39.21%	34.96%	36.54%	31.97%	**38.40%**
Medium	70.55%	67.76%	68.35%	68.35%	67.20%	69.79%	68.09%	70.37%	68.92%	65.40%	**68.48%**
Medium	65.04%	66.28%	62.65%	62.69%	58.50%	59.81%	58.33%	60.50%	57.73%	58.64%	**61.02%**
Medium	39.62%	37.17%	41.26%	32.68%	35.24%	34.64%	40.63%	37.32%	39.37%	41.34%	**37.93%**
Medium	59.65%	53.95%	53.01%	56.75%	50.29%	50.82%	47.25%	51.75%	52.14%	50.60%	**52.62%**
Medium	40.18%	44.82%	40.47%	38.39%	36.62%	38.25%	36.86%	37.85%	34.26%	33.04%	**38.07%**
Medium	61.66%	61.09%	61.93%	64.13%	60.65%	64.55%	64.53%	61.13%	61.28%	61.73%	**62.27%**
Medium	34.79%	31.48%	34.07%	37.83%	36.52%	36.15%	34.11%	31.66%	32.20%	36.83%	**34.56%**
Medium	72.29%	72.45%	72.73%	73.93%	70.49%	72.70%	69.31%	66.99%	68.93%	70.61%	**71.04%**
Medium	65.90%	68.13%	68.87%	68.11%	66.76%	67.29%	65.55%	65.05%	61.85%	62.30%	**65.98%**
Medium	46.35%	43.00%	43.99%	44.66%	43.36%	38.93%	39.23%	37.52%	39.03%	39.12%	**41.52%**
Medium	34.74%	29.14%	32.75%	35.41%	34.10%	32.01%	33.83%	47.37%	24.52%	27.44%	**33.13%**
Medium	45.17%	44.26%	43.60%	39.83%	37.14%	38.21%	39.46%	37.57%	42.19%	40.48%	**40.79%**
Medium	44.05%	48.80%	47.49%	51.46%	42.32%	45.06%	48.31%	47.38%	45.34%	44.21%	**46.44%**
Medium	47.75%	48.36%	47.60%	46.35%	46.38%	44.76%	45.59%	46.39%	49.34%	49.95%	**47.25%**
Medium	54.25%	54.23%	57.28%	53.15%	54.26%	52.49%	52.50%	53.17%	55.41%	52.95%	**53.97%**
Medium	37.01%	36.43%	36.41%	39.14%	40.23%	41.03%	43.45%	40.99%	43.29%	40.20%	**39.82%**
Medium	38.83%	34.13%	35.62%	34.53%	36.58%	33.51%	36.57%	41.02%	41.47%	42.30%	**37.46%**
Total	**44.74%**	**43.70%**	**43.80%**	**44.06%**	**42.26%**	**41.96%**	**41.45%**	**41.87%**	**41.36%**	**41.20%**	**42.64%**

JAMES P BATCHELDER

Education:	Ed.D. Educational Leadership, East Tennessee State University, Johnson City, Tennessee 2020
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	B.S. Accounting & Business Administration, Milligan College, Milligan, Tennessee 1997
	Public Schools, Elizabethton, Tennessee
Professional Experience:	Special Assistant of Institutional Research, ETSU Institutional Research, Office of Planning and Decision Support, 2018-Present
	Assistant Dean, ETSU College of Clinical & Rehabilitative Health Sciences, 2009-Present
	Executive Assistant to the Dean, ETSU College of Clinical & Rehabilitative Health Sciences, 2008-2009
	Assistant Bursar, ETSU Financial Services, 2007-2008
	Manager of Student Accounts, ETSU Financial Services, 2001-2007
	Auditor, Margaret Moses, CPA, Elizabethton, TN, 2000-2001
	Owner/Operator, Jeweler's Bench, Elizabethton, TN, 1998-2000
	Goldsmith, Diamond Exchange, Johnson City, TN, 1993-1998

Goldsmith, Self-employed, Johnson City, TN, 1982-1993

University Committee Involvement:

Budget and Strategic Planning Committee (2017- present)

Chair of Budget Redesign Implementation Committee (2017-2018)

Budget Redesign Committee (2015-2017)

Chair of Technical Subcommittee (2017)

Net Revenue Generators Subcommittee of the Administrative

Services Review Committee   (2014-2015)

Ad Hoc Budgeting Process Committee (2013-2015)

Committee for 125 Taskforce: Extramural Resources (2012-2013)

Strategic Budget Management Committee (2009-2013)

President's Senior Staff (2009-2012)

Faculty/Staff Salary Equity Committee (2009)

Staff Senate (2008-2012)

President (2009-10)

Academic Business Practice Continuous Improvement Team

(2008-2009)