Explaining the Employment Rate of Recent Texas Public University Graduates

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ABSTRACT

The purpose of this research project is to identify the factors that contribute to the employment rate of college graduates. The dependent variable is the college employment rate of recent university graduates from Texas public universities. Three general assumptions are tested. The first states that the location of the institution matters. The second states that the university resources impact employment rates. Lastly, it is assumed that student characteristics contribute to university employment rates. Findings indicate that institutional location has no impact on the employment rate of recent graduates. Furthermore, while certain institutional resources contribute to the university graduate employment rates, it is student characteristics that have the largest impact. Institutions with larger percentages of students with financial need produce the most robust employment rates.

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A few years ago, research indicated that less selective public universities were producing graduating classes with more impressive employment rates than more selective institutions. It was surprising to learn that the graduates of the University of Houston – Downtown – an open access institution with a large percentage of first-generation college students – had greater employment success than their counterparts at the more selective flagship campuses of the University of Texas and Texas A & M University systems (Schneider, 2013). Existing research indicates that the graduates of some institutions had better employment success because of the institution's location. In his work for *College Measures*, Mark Schneider reports that graduates with better employment success "attended campuses located in larger metropolitan areas" (Schneider, 2013, p. 7). In this article, a closer look is given to the location hypothesis, as well as other factors that might explain the employment success of an institution's graduates.

This paper will begin with a brief summary of the literature. The literature review will then describe the methodology, followed by the findings. The purpose this paper is to identify those factors that contribute to the employment rate of Texas public universities' recent graduates. The thesis of this article is that the employment rate of Texas public university graduates is best explained by *student characteristics* rather than *location* or *institutional factors*. Furthermore, the findings indicate that those institutions that serve a larger percentage of students on financial aid are also the institutions that produce more robust employment rates.

Literature Review

Accountability and Gainful Employment

By one estimate, thirty-five percent of jobs require a baccalaureate or graduate degree (Carnevale, Smith and Strohl, 2013). And, as society becomes more complex, we can expect continued demand for employees with college degrees. Understanding the employment rates of an institution's graduates is important because it speaks to a small part of a broader policy debate on accountability. The demand for greater accountability began with K-12 after the publication of *A Nation at Risk*, and was followed with a focus on higher education (Deming and Figlio, 2016, p. 33). While the issue of accountability is ongoing, higher education continues to refine these measures (Shin, 2010). Higher education's efforts to improve accountability has been driven largely by policymakers, students, and parents. As American colleges and universities received greater scrutiny, institutions began to shift their focus to measures like retention and graduation rates, loan default rates, employment rates, and earnings upon graduation. The shift in focus toward these measures was in large part imposed by state governments, and later became the hallmark of President Barak Obama's *College Scorecard*. The College Scorecard offers the public an opportunity to compare institutions on a variety of measures in the areas of access, affordability, and student outcomes.

Before President Obama's College Scorecard was made available, Texas, and a handful of other states – Arkansas, Colorado, Florida, Tennessee and Virginia – participated in *College Measures,* making the employment and earnings data of college graduates from public university available

to the public. These efforts make it possible to identify factors that impact these outcome measures. This article focuses on one such outcome measure – the *employment rate* of Texas public university graduates in 2014.

The focus on the employability of university graduates has its origins in the Higher Education Act of 1965, in which the concept of *gainful employment* was introduced into law. While the concept of gainful employment went relatively ignored, the proliferation of for-profit colleges and universities led the US Department of Education to take a closer look. In 2014, the Obama Administration announced, "To qualify for federal student aid, the law requires that most for-profit programs and certificate programs at private non-profit and public institutions prepare students for "gainful employment in a recognized occupation" (US Department of Education, 2014, "Obama Administration Announces Final Rules", para. 3). The Obama Administration was concerned that for-profit colleges and universities, and some community college vocational programs, were not getting the return on investment students were expecting. Low-income and minority students, in particular, were borrowing student loans to earn degrees from proprietary institutions that failed to lead to gainful employment. This in turn, impacted the students' ability to repay student loans (Looney & Yannelis 2015). While the new interpretation of the law does not require degree-granting four-year institutions to report gainful employment data, defaults on student loans can jeopardize an institution's ability to receive federal financial aid. Understanding the factors contributing to the employment of college graduates is important because institutions are increasingly held accountable for their graduates' success.

Factors Explaining Employment

There are a number of factors that explain the employment of college graduates. The scholarship focuses on three sets of factors. The first of these looks at the impact of institutional location on employment rates. The second focuses on the relationship between the quality of the institution and student employment. Here, much of the literature focuses on institutional resources, selectivity, majors and other experiences institutions offer. The third focus is on student characteristics. These will be briefly discussed in this section.

Location and employment. Much of the literature that focuses on location focuses on the mobility of college graduates vis-a-vis non-college graduates. The evidence indicates that college graduates are more likely to move to where the jobs are located (Greenwood, 1975, Greenwood, 1997, & Wozniak, 2010). Increasingly, those places are urban areas. One study concludes, "Millennials – especially the more educated among them – have moved in large numbers to urban areas" (Council of Economic Advisers, 2014, p. 45). Andrew Hanson and Artem Gulish report that young people "who grew up in small towns and were exposed to cities through college found that they had to stay in the cities if they wanted jobs" (2016, p.5).

For the purpose of this study, the interest is in knowing the effect of the institution's location on employment. Mark Schneider's work addresses this question most pointedly. He finds that the employment success of a Texas institution's graduates can be explained by the institution's location. He finds that the graduates of institutions in the Houston area, for instance, are significantly better employed than graduates from Sul Ross University, located in rural Alpine

Texas (Schneider, 2013, p. 13). The conclusion form this earlier work is that students attending Texas universities in remote areas of the state, where job prospects are low, will have lower employment success than those who graduate from an institution located in urban areas.

Institutional resources, quality, and employment. Just as location is reported to impact college graduates' employment prospects, the quality of the school has also been evaluated. Regarding institutional quality, two general explanations are given for student employment success. These two explanations revolve around the selectivity of the institution, and the resources provided by the institutions.

One of the earlier works to focus on institutional selectivity is James Davis' seminal work, *The Campus as a Frog Pond* (1966), in which he tests the theory of *relative depravation* in career decision making. The theory of relative depravation argues that individuals look at those students immediately around them to determine the extent to which they are deprived of some benefit. Davis' findings indicated that getting into the best college was not the best predictor of getting the best job. Rather, it was being the best student at any school – whether selective or not – that would lead to the best job. Davis concludes:

> Counselors and parents might well consider the drawbacks as well as the advantages of sending a boy to a "fine" college, if, when doing so, it is fairly certain he will end up in the bottom ranks of his graduating class. The aphorism "It is better to be a big frog in a small pond than a small frog in a big pond" is not perfect advice, but it is not trivial. (Davis, 1966, p. 31)

Davis' research indicates students compare themselves to counterparts within the institution, and not to counterparts from other, more selective institutions.

Others have focused on the quality and resources of the institution. Donald L. Thistlethwaite found evidence that the selectivity of the institution played an important role in directing students to graduate programs (1965). This would come to be known as the *environmental-press* theory, which suggests that the selectivity of the institution should have a positive effect on student career goals (Thistlethwaite & Wheeler 1966). Drew and Astin (1972), attempting to reconcile the two theories, found evidence that both worked simultaneously. They write, "While it is true that selectivity affects grades negatively and that relative-deprivation theory does operate (an undergraduate's aspirations are a function of his college grades and his academic self-concept), environmental-press theory appears to be operating simultaneously" (1972, p. 1162). Jeffrey Reitz also attempts to clarify, making a distinction between *aspirations* and *career-field choice*, arguing that the *relative deprivation* theory may not be entirely accurate (1975). Further contributing to the argument that selectivity makes a difference, Carnevale, Cheah and Van Der Werf find that the "quality of the colleges" makes a difference in the earnings of the institution's graduates (2015, p. 4). Mark Hoekstra, studying the effects of selective flagship state universities finds that being a "flagship" camps effects the graduates' earnings (2009). In these studies, college selectivity appears to matter.

Others however disagree. The former Director of California's Employment Development Department, Michael Bernick, concludes;

> Today, *whether* you go to college retains some importance in your employment options. But *where* you go to college is of almost no importance. Whether your degree, for example, is from UCLA or from less prestigious Sonoma State University matters far less than your academic performance and the skills you can show employers." (2014, "Chill Out!", para. 2)

Dale and Krueger report that what matters in employment is institutional resources. Institutions with the resources to invest in student learning can impact their graduates earning potential (2002). Expenditures per student can make a difference on students' earnings after college (Dale and Krueger, 2002, p. 1522). While much of this scholarship focuses on wages as a dependent variable, one might also hypothesize that institutional resources will also be correlated with the dependent variable *employment rates*. This paper will look at expenditures as well as other institutional resources that may help explain the employment rates of Texas university graduates.

The types of majors an institution offers is another factor in the employment success of an institution's graduates. Anthony Carnevale, and his colleagues Bam Cheah, and Andrew Hanson at the *Center on Education and the Workforce*, find strong evidence that the graduate's major is most important in predicting employment success. They write, "The importance of major is so powerful that Bachelor's degree holders in some majors earn more than many graduate degree holders" (Carnevale, Cheah & Hanson, 2015, p.4). It is important to note that the most lucrative majors are in the engineering fields. These are relatively expensive programs, and as a result, not all institutions can afford to provide their students with such options. One might, therefore, speculate that the variety of majors that an institution can afford to provide its students should help predict the employment success of its graduates.

Student characteristics and employment. Lastly, the literature indicates that employment success is a function of student characteristics, like self-efficacy, culture, and academic ability (Spaeth, 1970; Moynihan, Roehling, LePine, & Boswell, 2003; Heslin, 2005). Joe Spaeth found that performance in school was correlated to employment success (Spaeth, 1970). Evidence also suggests that self-efficacy plays a critical role in obtaining a desired job (Moynihan, Roehling, LePine, & Boswell, 2003). Moynihan, et al. (2003) conclude that more confident college graduates will be more successful at turning the interview into a job offer (2003, p. 207). Similarly, cultural differences have also been found to play a role in how people perceive their jobs (Heslin, 2005, p. 130). Others have found that students will make career choices that are less financially rewarding, if incentives like help with student debt are provided (Feld, 2009). While self-efficacy and cultural differences are beyond the scope of this research paper, these findings highlights that the students' characteristics are contributing factors in employment success.

The literature highlights the effects of location, institutional resources, and student characteristics. Colleges and universities offer their students a host of services that improve the students' likelihood of being employed. But students also bring their own sets of qualities that make a difference. By identifying these characteristics, institutions can make investments in those areas that impact student employability and thus earnings – a key measure in the *College Scorecard*.

Research Design

Data was gathered from several sources for this analysis. Institutional employment rate data was gathered from the Texas Higher Education Coordinating Board (THECB). The THECB gathers employment data on college completers employed in the fourth quarter after graduation from the Texas Workforce Commission and the Office of Personnel Management databases. This data was gathered for all 2014 undergraduates to graduate from a Texas public university. Urban density and number of firms in the county were gathered from the US Census Bureau. The number of staff in the office of career services was gathered from the institutions' career service center webpages. The student data only reports undergraduate information.

Three General Hypotheses

To test the three general hypotheses described above, scatterplots will be used to present the relationships between the institutions' *locations, functions,* and *student characteristics*; and the institution's *employment rate* for 2014 graduates. The data reported is not a random sample of Texas universities. Rather, the data reported includes thirty-seven Texas public universities, with the exclusion of all Texas medical schools and Texas A&M Galveston – a marine and maritime focused institution.

Location matters. The first set of hypotheses tests the *geographic location* of the institutions and the *number of firms* in the surrounding area. Two hypotheses are tested under this category. The first of these hypotheses tests the extent to which the county the university is located in is urban. The second hypothesis addresses the number of firms or businesses in the county. The US Census reports the *urban density* and the *number of firms* in counties. The first two hypotheses (H_1 and H_2), and the respective null hypotheses (H_0) are stated below.
H_1: The greater the urban density of the county the institution is located in, the greater the employment rate for the institution's graduates.
H_0: The urban density of the county the institution is located in will not be associated with a greater or lesser employment rate for the institution's graduates.
H_2: The more firms in the county the institution is located, the greater the employment rate of the institution's graduates.
H_0: The more firms in the county the institution is located in will not be associated with a greater or lesser employment rate for the institution's graduates.
The logic following these two hypotheses is that the county's urban density, and the number of firms in the county, will contribute to more employment opportunities for an institution's graduates. It follows that the employment rates of graduates from institutions with more employment opportunities will be greater than from those institutions in rural areas or in areas with fewer firms that can provide jobs. The null hypotheses state that the employment rate will neither rise nor fall with the increase in either *urban density* or *number of firms*.

Institutions matter. The second general assumption states that *institutions* effect the employment rate of their graduates. I test this general hypothesis, with a set of more specific hypotheses. First, it is hypothesized that institutions that give their students more *degree options* will produce either a higher or lower employment rate. The reasoning is that institutions that offer more degree options are in a position to offer degrees in highly specialized areas that may

be in high demand by employers. Conversely, highly specialized degree options may also be highly esoteric options, with few career paths. The number of degree programs are expected to impact employment rates either positively or negatively. The null hypothesis to be tested is that the number of programs will not correlate with the employment rate of Texas college graduates.

The next hypothesis states that the *ratio of career service staff to graduates* will be correlated with the employment rate. Texas public universities offer career assistance through the career service centers. The assumption is that a better staffed career service center will lead to a better employment rate. Well-staffed career centers can help their graduates find employment, but if the number of graduates per staff member is too great, then employment rates may not improve. The null hypothesis states that the ratio of career service staff to graduates will not impact the employment rate.

Somewhat related to career service staff to gradate ratio is the *faculty-student ratio*. The hypothesis is that a ratio of fewer students to faculty will lead to better employment rates. It is suspected that students will be mentored by faculty into career opportunities more effectively when they have fewer students to mentor. The null hypothesis states that the faculty-student ratio will not correlate with institutional employment rates.

It is also hypothesized that expenditures for *instructional support* per full-time equivalent (FTE) student will lead to increased or decreased employment opportunities for recent graduates. On the one hand, it is expected that increased spending per full-time equivalent student in instructional support will lead to greater employment rates for the university's graduates. Institutions that spend more on instructional support will have increased the quality of its graduates. On the other hand, it could be argued that increased spending in instructional support could be a function of the academic deficits with which the student is entering college. One might hypothesize that institutions that serve a large percentage of academically unprepared students, may also produce graduates less likely to be employed upon graduation. So, it is believed that expenditures for instructional support can either contribute to increased employment rates, or it could be an indication of the types of students served, which may be more difficult to employ. The null hypothesis is that instructional support will neither be associated with increased or decreased employment rates.

Expenditures for *student services* per FTE are hypothesized to positively impact the employment rate of college graduates. Expenditures for student services include expenditures on non-academic matters like the registrar's office, admissions, and services that "contribute to students' emotional and physical well-being and to their intellectual, cultural, and social development outside the context of the formal instructional program" (National Center for Education Statistics, 2016, p. 31). This hypothesis suggests that institutions that can afford to spend more per student to either facilitate their lives or to give the students more enriching experiences, will produce more employable graduates. Leadership opportunities developing a global perspective and embracing diversity and cultural differences can all result from these student services expenditures. And these characteristics can lead to a more employable graduate. The null hypothesis states that student services will not be associated with institutional employment rates.

Lastly, in this category of institutional resources, it is hypothesized that the number of dorm beds offered by the institution could be an indicator of the need for students to return to their homes upon graduation. Having to return home can have the effect of slowing down the employment process for many of its graduates. The null hypothesis states that the number of beds will have no effect on the institutional employment rate.

The hypotheses in this second category are as follows.
H_3: The number of degree programs will either positively or negatively impact the employment rate for the institution's graduates.
H_0: The number of degree programs will not be associated with the employment rate for the institution's graduates.
H_4: A lower ratio of career service staff to graduates will be associated with a higher employment rate for the institution's graduates.
H_0: The ratio of career service staff to graduates will not be associated with the employment rate for the institution's graduates.
H_5: A lower faculty to student ratio will be positively associated to the employment rate of its graduates.
H_0: A lower faculty to student ratio will not be associated to the employment rate of the institution's graduates.
H_6: The expenditures in instructional support per FTE will be either positively or negatively associated with the employment rate of the institution's graduates.
H_0: The expenditures in instructional support per FTE will not be associated with the employment rate of its graduates.
H_7: The greater the expenditures in student services per FTE, the better the employment rate of the institution's graduates.
H_0: Expenditure rates in student services per FTE will not be associated with the employment rate of the institution's graduates.
H_8: The more beds available to students, the lower the employment rate of the institution's graduates.
H_0: The number of beds will not be associated with the employment rate of the institution's graduates.

Student characteristics. The last of the three general hypotheses states that the types of students the institution serves will lead to improved employment rates. It is hypothesized that higher percentages of students receiving financial aid is associated with a greater employment rate. The logic is that students receiving financial aid, because they are financially needy, are also in no position to delay getting a job after graduation. These students are less likely to have the financial support from parents that would allow the graduate the opportunity to pursue other prospects, such as travel or graduate school. Similarly, it is also hypothesized that the employment rate will be impacted by the percentage of students over 25 years of age. It is assumed that older students are more likely to seek employment. And, since older students are less likely to depend on parents for financial resources, employment becomes an imperative.

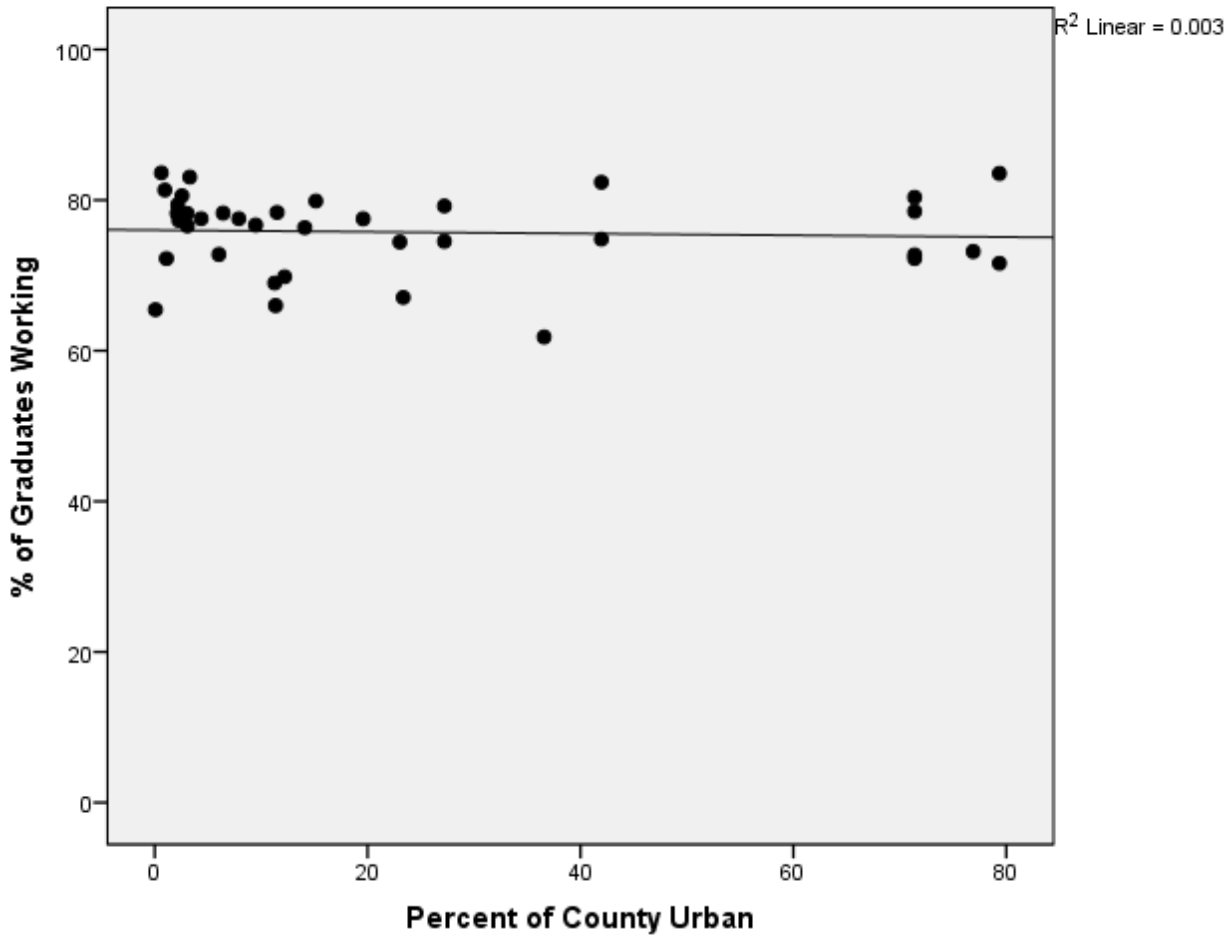
H_9: The greater the percentage of students receiving financial aid the greater the employment rate of the institution's graduates.

H_0: The percentage of students receiving financial aid will not be associated with the employment rate of the institution's graduates.
H_{10}: The greater the percentage of older students, the greater the employment rate of the institution's graduates.
H_0: The percentage of older students will not be associated with the employment rate of the institution's graduates.

Findings

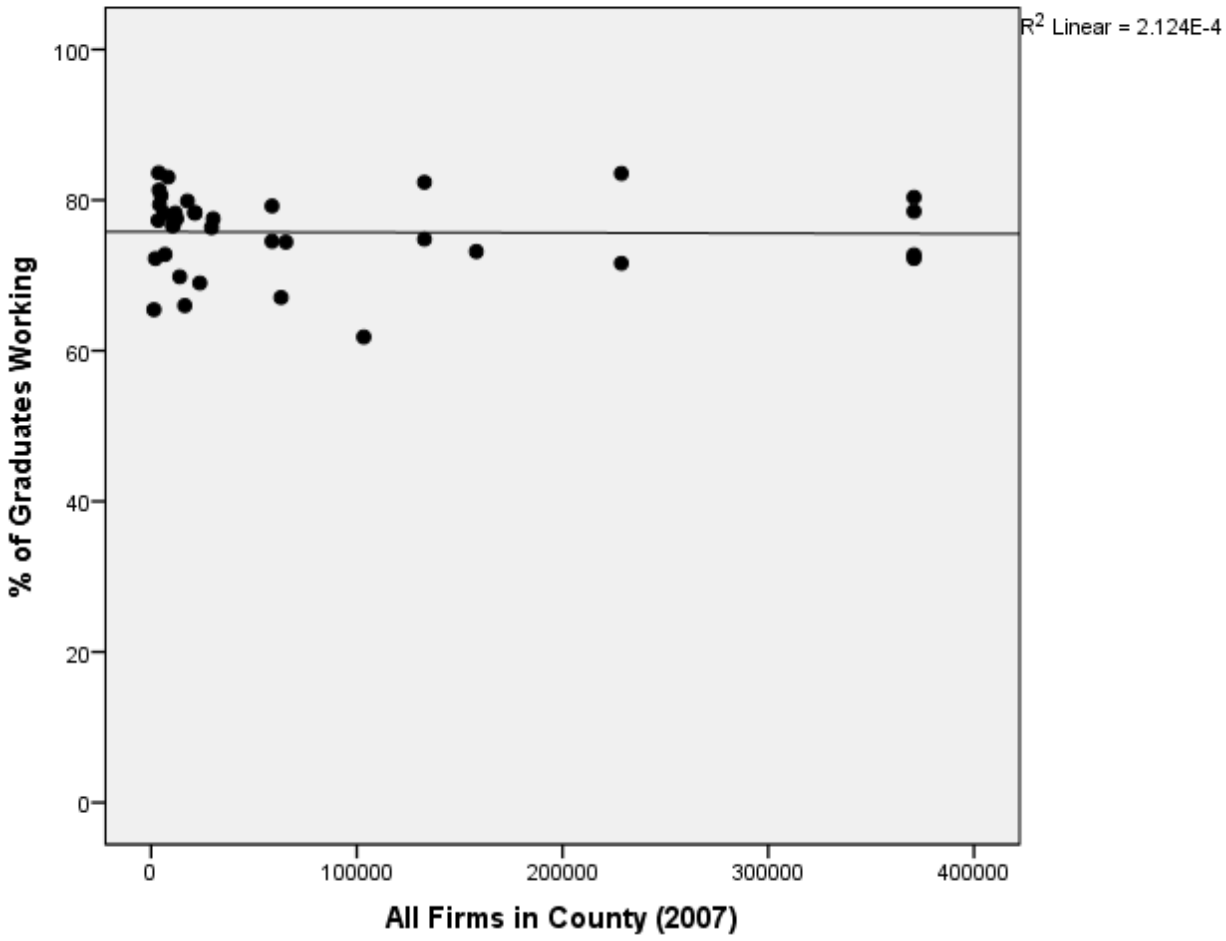
The data does not indicate a significant relationship between the extent to which the institution's county is urban and the employment rate of college graduates. As shown in Figure 1, while the relationships are not significant, the variables produce a negative relationship. This suggests that, while weak, the more urban the county in which the school is located, the lower the employment rate. This contradicts the assumption that institutions in large urban areas will produce a higher employment rate among its graduates.

Figure 1: Relationship between Percentage of County Urban and Percentage of Graduates Working



One might speculate that the employment rate might have less to do with the extent to which the community is urban and more to do with the number of businesses in the county. Using Census data, it is possible to look at the relationship between the number of firms in the county in which the school is located and the employment rate of its graduates. The number of firms varies from 1,354 in Brewster County to over 370,000 in Harris County, with a mean of 80,790 firms. Figure 2 shows no significant relationship between the number of firms in the county and the employment rate. From this evidence, we can conclude the employment rate of an institution's graduates is not significantly impacted by the institution's location nor the number of firms in the surrounding community. We cannot reject the null hypothesis.

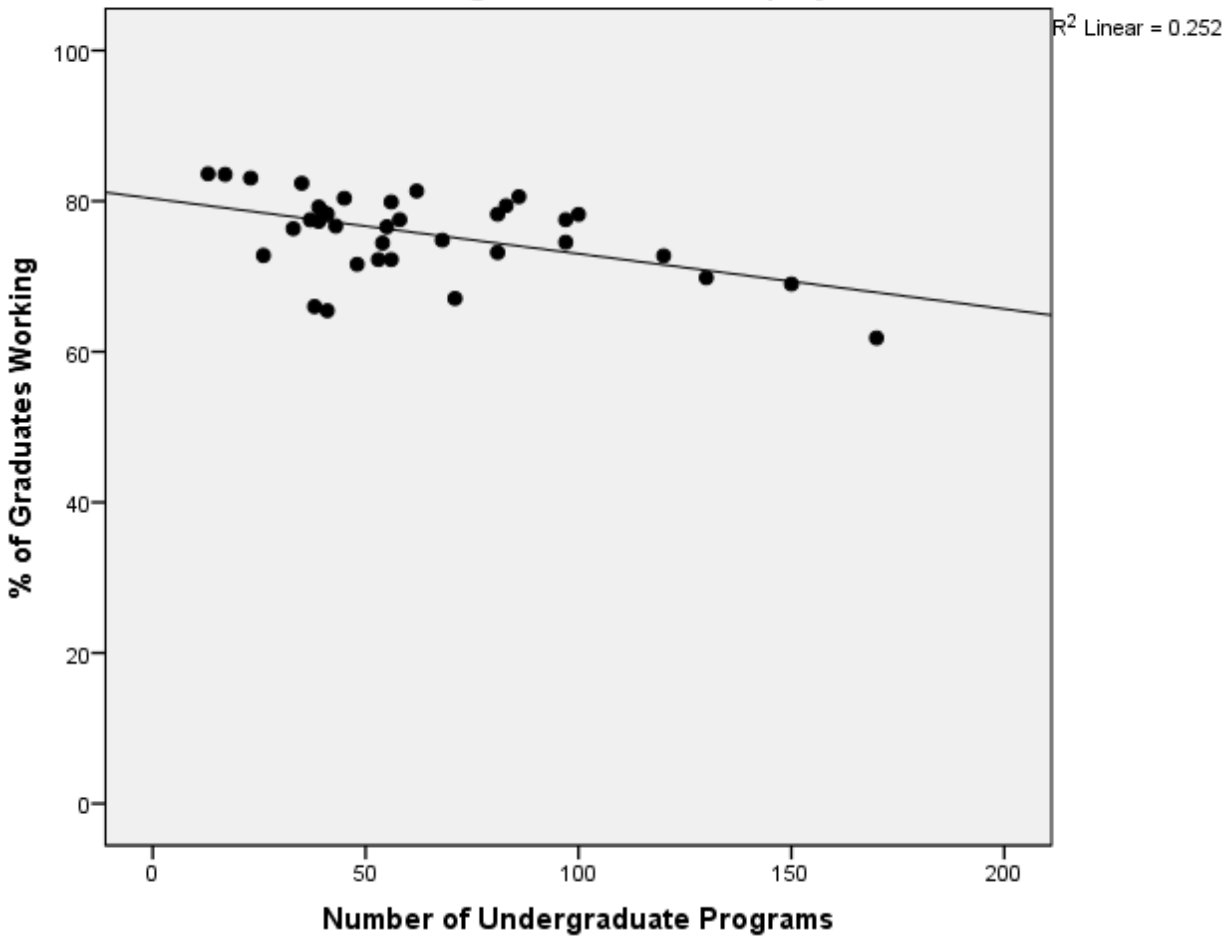
Figure 2: Relationship Between Number of Firms in County and Employment Rate



If neither the location of the institution nor the number of firms in the community contributes to the employment rate of its graduates, then perhaps the institution itself is contributing to the employment success of its students. For example, one might assume that employment rates can be improved if the institutions offer more undergraduate degree programs. Interestingly, this is

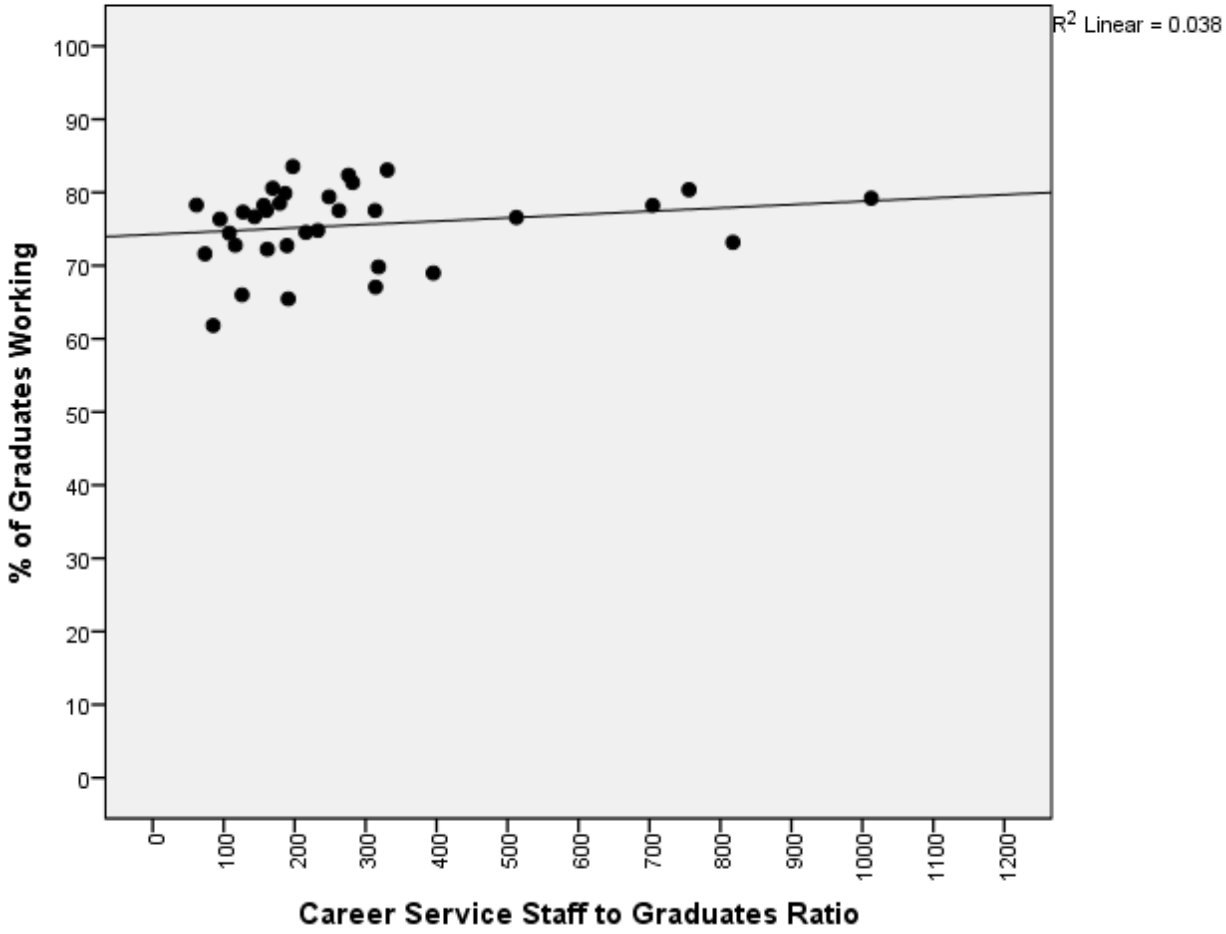
not the case. The thirty-seven Texas institutions offer an average of sixty-three undergraduate programs and vary from thirteen at Sul Ross State University Rio Grande College, to one-hundred seventy at the University of Texas. Figure 3 shows the relationship between the number of undergraduate programs and the employment rate of Texas university graduates. Surprisingly, the evidence indicates a negative relationship between the number of undergraduate programs and the employment rate of recent college graduates. Institutions that offer more undergraduate programs produce a lower employment rate. For every program, there is a negative .07 percent reduction in the employment rate. It may be the case institutions with fewer programs have the ability to concentrate their resources in fewer programs that cater to the needs of the surrounding community. Rather than attempting to meet everyone's demands, the institution may be attempting to prepare students for the needs of the surrounding community.

Figure 3: Relationship Between Number of Undergraduate Programs and Percentage of Graduates Employed



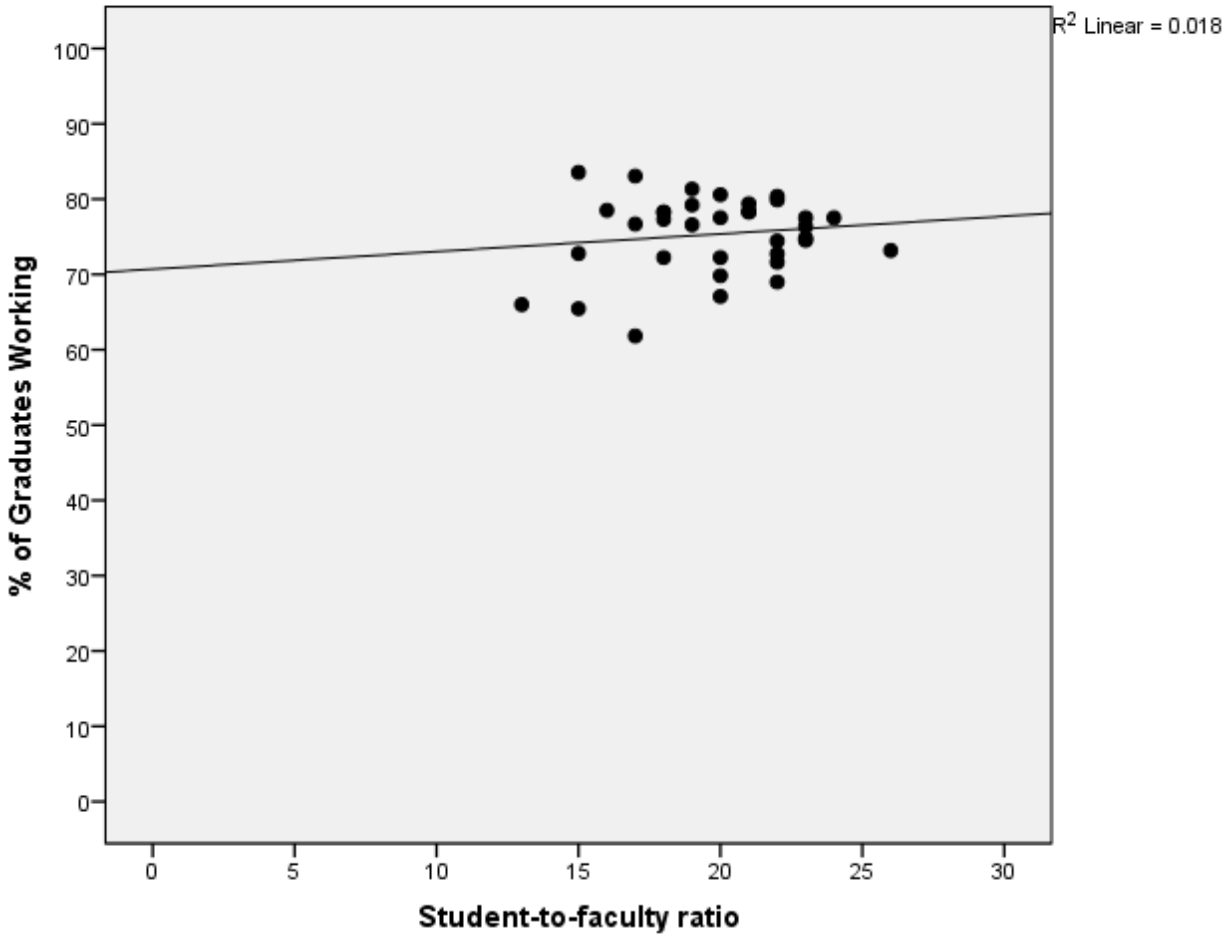
As a way to help graduates find gainful employment, colleges and universities have created career services centers. These centers organize career fairs, connect students with employers, provide students with tips for finding employment and assist alumni with employment needs. In an effort to measure the impact of career services, a measure was created in which the number of staff identified by the institution's career services website was divided by the number of 2014 graduates. This *career services staff to graduates* ratio is correlated to the percentage of 2014 graduates who are working. The assumption is that the fewer graduates per career service staff person, the better the employment rate. As shown in Figure 4, the data indicates a very weak relationship, but one that was unexpected. Although small, we find that for every student to career services staff there is a .0045 percentage point increase in the employment rate. One would expect that the employment rate would drop as career service personnel had more students to assist. The data suggests the reverse. The data indicates a slight increase in employment rates when career service personnel have more students with which to work. This is a very small and weak relationship, indicating one cannot reject the null hypothesis.

Figure 4: Relationship Between Ratio of Graduates to Career Service Staff and Percentage of Graduates Employed



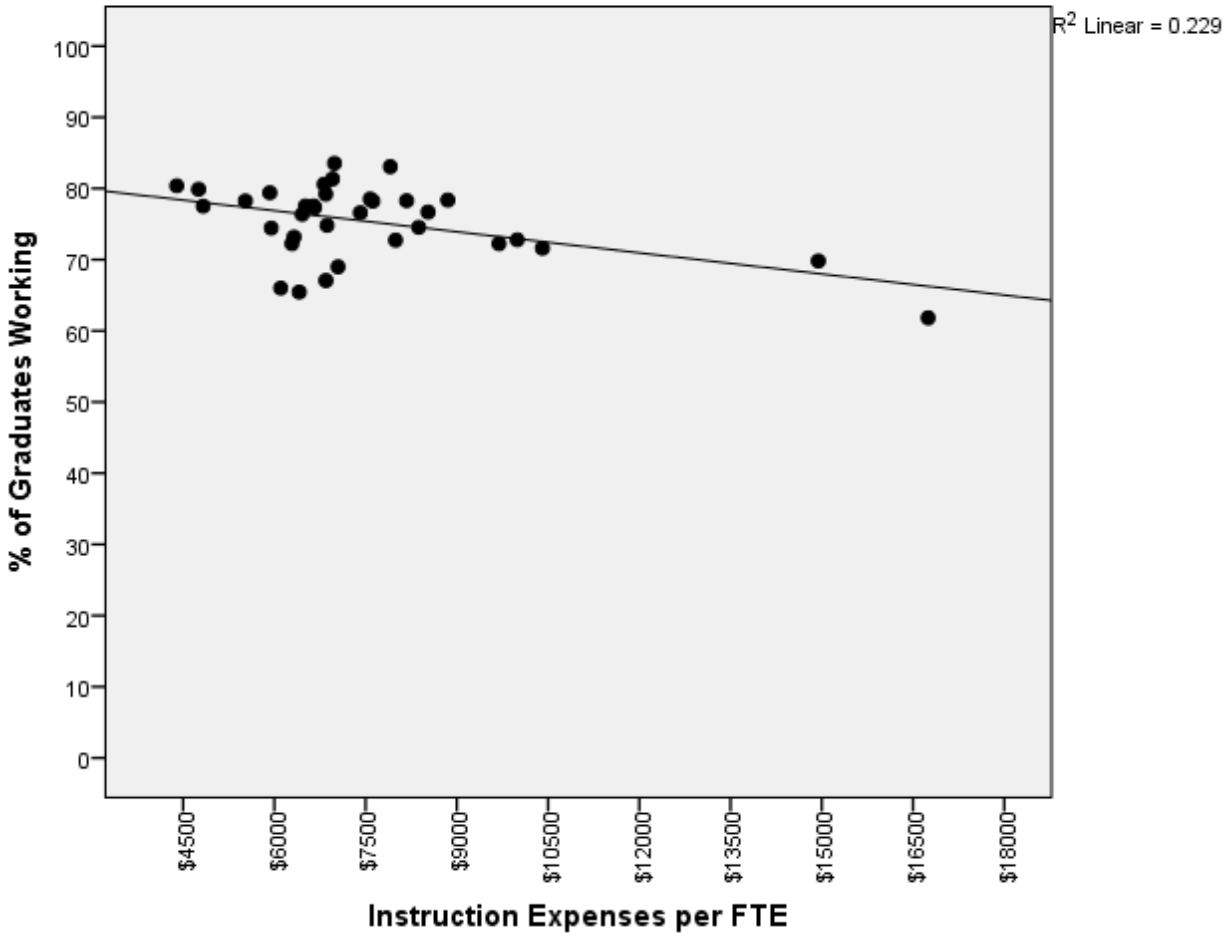
It is also hypothesized that the student to faculty ratio might contribute to the employment rate of college graduates. It is believed that with a lower student to faculty ratio, the opportunity to provide direction and mentorship to these students is greatly enhanced. Figure 5 shows no discernable relationship between the student to faculty ratio and the institution's employment rate. The lack of relationship between these two variables might be an indication of the limited role of faculty in assisting students in finding employment. With this in mind, we cannot reject the null hypothesis.

Figure 5: Relationship Between Student to Faculty Ratio and Percentage of Graduates Employed



Another set of institutional factors which could contribute to the employment rate of college graduates is the expenditures the institution makes. Specifically, one would expect that the amount money spent per student in the areas of instruction and student services would contribute to a more robust employment rate. When reviewing the expenditures per student in the areas of instructional support and student services, we find little evidence that these expenditures per FTE student contribute to a stronger employment rate. In fact, in the case of instructional expenses, the findings run counter to what one would expect. Figure 6 shows that institutions that spend the

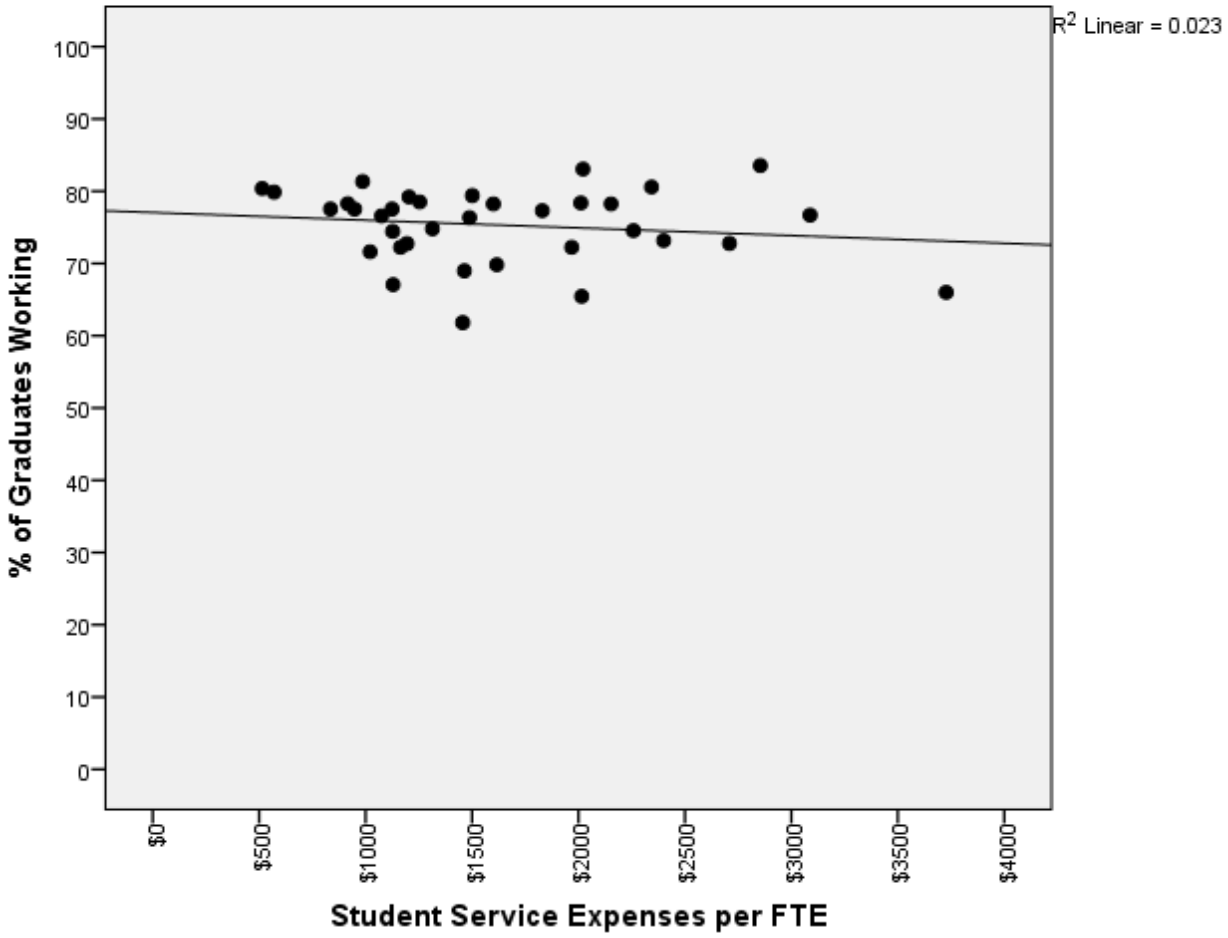
Figure 6: Relationship Between Instructional Expenditures per FTE and Employment Rates



most per FTE, in the area of instruction, also produce the lower employment rates for its graduates. For every thousand dollars spent per student in instructional expenses, there is a .988 percent decrease in the employment rate.

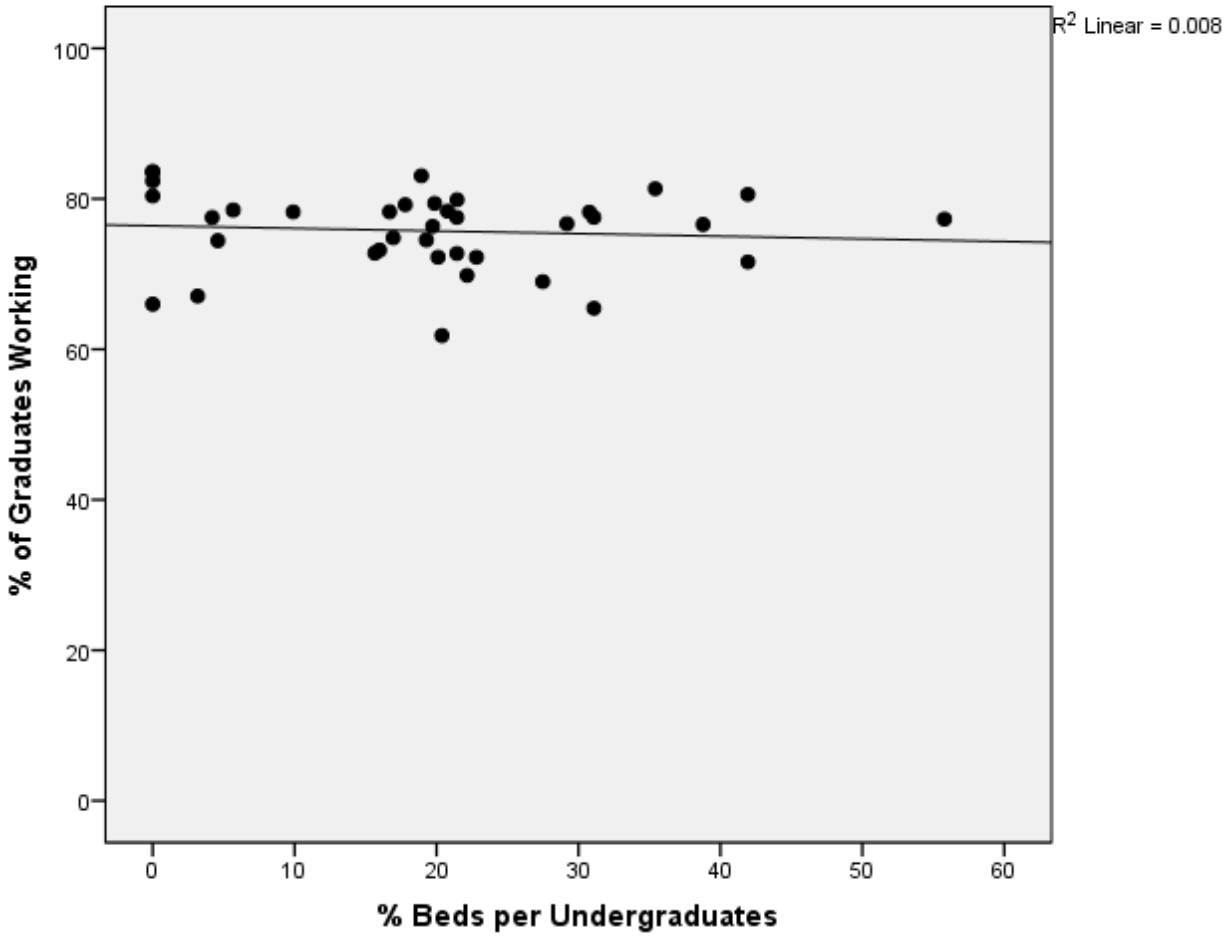
The relationship between expenditures for student services and employment is a relatively weak one. Figure 7 indicates that as the amount of spending an institution provides in the areas of student services increases, a slight decrease in the employment rate of college graduates occurs. For every one-thousand dollar increase in spending per FTE in the area of student services there is a 1.06 percent decrease in employment rate. While it is a weak relationship, the fact that the relationship is negative suggests that the more one spends, the lower the employment rate.

Figure 7: Relationship Between Student Services Expenditures per FTE and Employment Rate



Many students leave home to go away to college. As a result, many students return home after graduating. One possibility might be that, given the disruption of moving, this period of returning home after graduation will delay the graduate's ability of find gainful employment. While a measure of the percentage of students returning home is not readily available, one can measure the percentage of dorm beds per undergraduate. This measure provides a sense of the percentage of students who live on campus, and would then leave the college upon graduation. The hypothesis, therefore, states that the more dorm beds as a percentage of undergraduates, will be negatively correlated with employment rates. The logic here is that the more students living on campus, the greater the percentage of students whose lives will be disrupted with a move upon graduation. In many ways the percentage of beds serves as a measure of the extent to which a school is a commuter campus or a residential campus. Figure 8 tests this hypothesis. The data finds little to no meaningful relationship between the percentages of beds per undergraduate to the percentage of graduates working. There does appear to be a slight negative relationship, suggesting that for every percentage point increase in the percentage of beds per undergraduate there is a .003 decrease in the employment rate. Generally, however, the percentage of beds

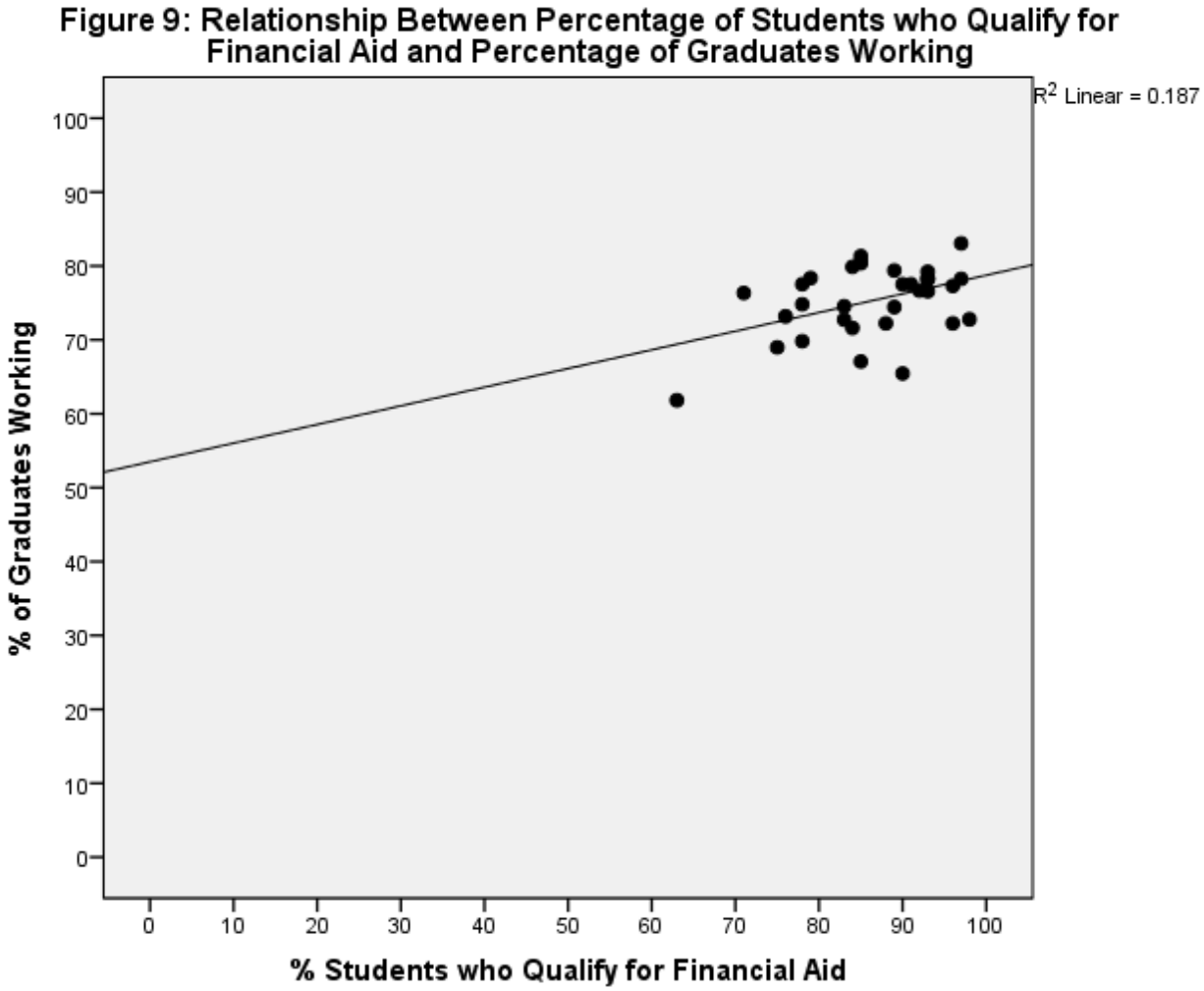
Figure 8: Relationship Between Percentage of Beds per Undergraduates and Percentage of Graduates Working



available to undergraduates has no meaningful bearing on the percentage of recent graduates working. We cannot reject the null hypothesis. It is likely that the percentage of beds per undergraduate is not a meaningful indicator of students having to return home and thus delaying the time to employment. The data indicates that graduating from college and returning home does not lead to lower employment rates for these graduates.

The second strongest factor to be correlated with the percentage of students working is the percentage of students on financial aid. The greater the proportion of students who qualified for financial aid, the greater the percentage of students working. Figure 9 shows that nearly 19 percent of the variance between financial aid and the employment rate can be explained. Furthermore, the slope of the line indicates that for every percentage point increase in students qualifying for financial aid, there is a twenty-five percent increase in the employment rate of college graduates.

These low income and needy students have fewer options, and so, are more likely to seek and obtain employment than wealthier students who can take time to travel, study for graduate

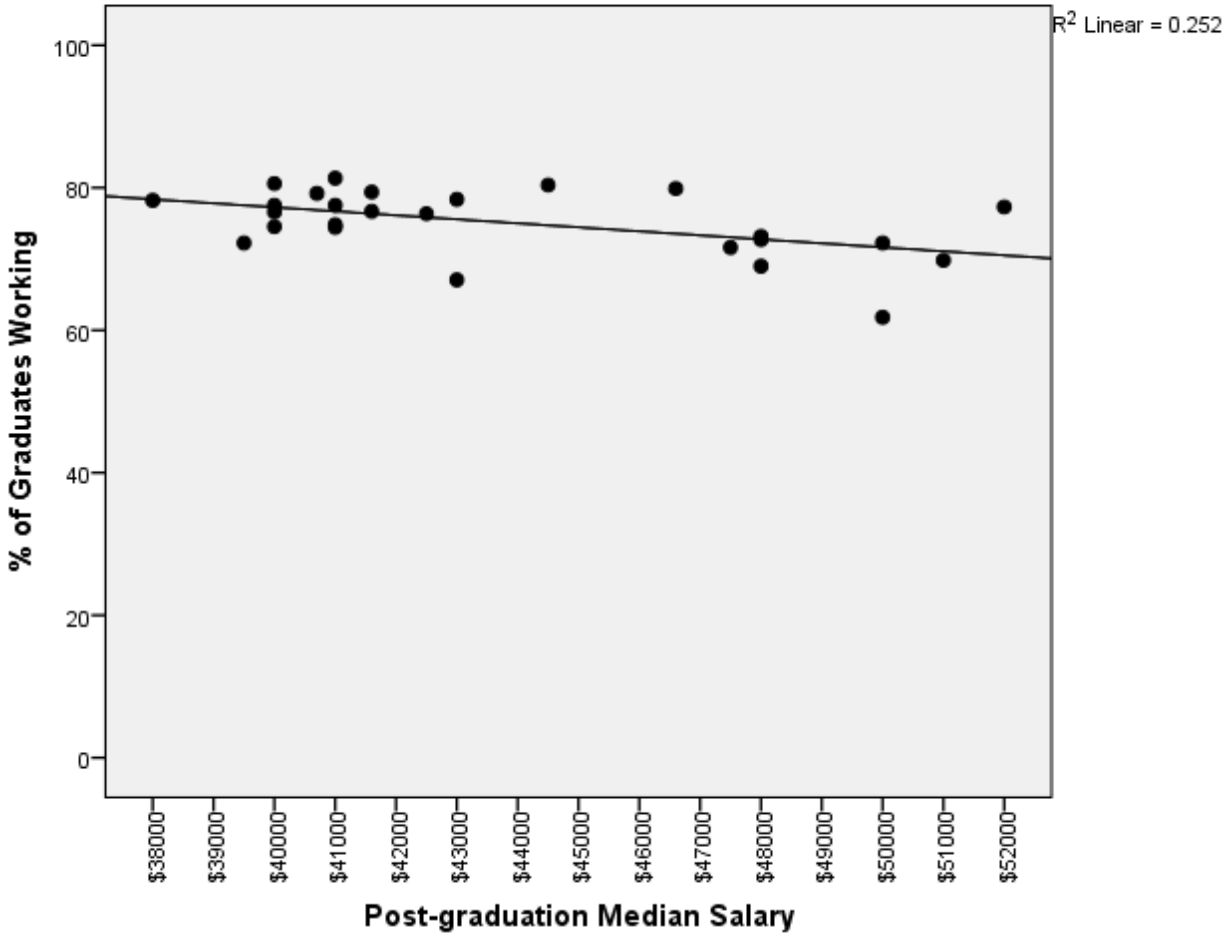


school, or wait until the best job prospect comes around. This idea that these students can wait until the best job comes around is supported by Figure 10, which indicates that those institutions with higher employment rates also produce graduates with lower median salaries. For every .56 percentage point drop in the percentage of students working, there is an increase of $1,000 in median salary. Median salary increases for the graduates of those institutions that produce lower employment rates. Figures 9 and 10 supports the idea that those institutions with stronger employment rates happen to producer students with greater financial need, and thus take jobs that pay less than the graduates of institutions with lower employment rates.

Lastly, it is believed that those institutions with a disproportionately large number of older students will also produce a higher employment rate. It is hypothesized that institutions with a larger *older* student body will also produce a larger employment rate because older students will be more inclined to get their life and careers underway. Older students are more likely to be employed while in college, and the completion of their college degree simply leads to promotion. Figure 11 shows the relationship between these two variables. The relationship indicates a very

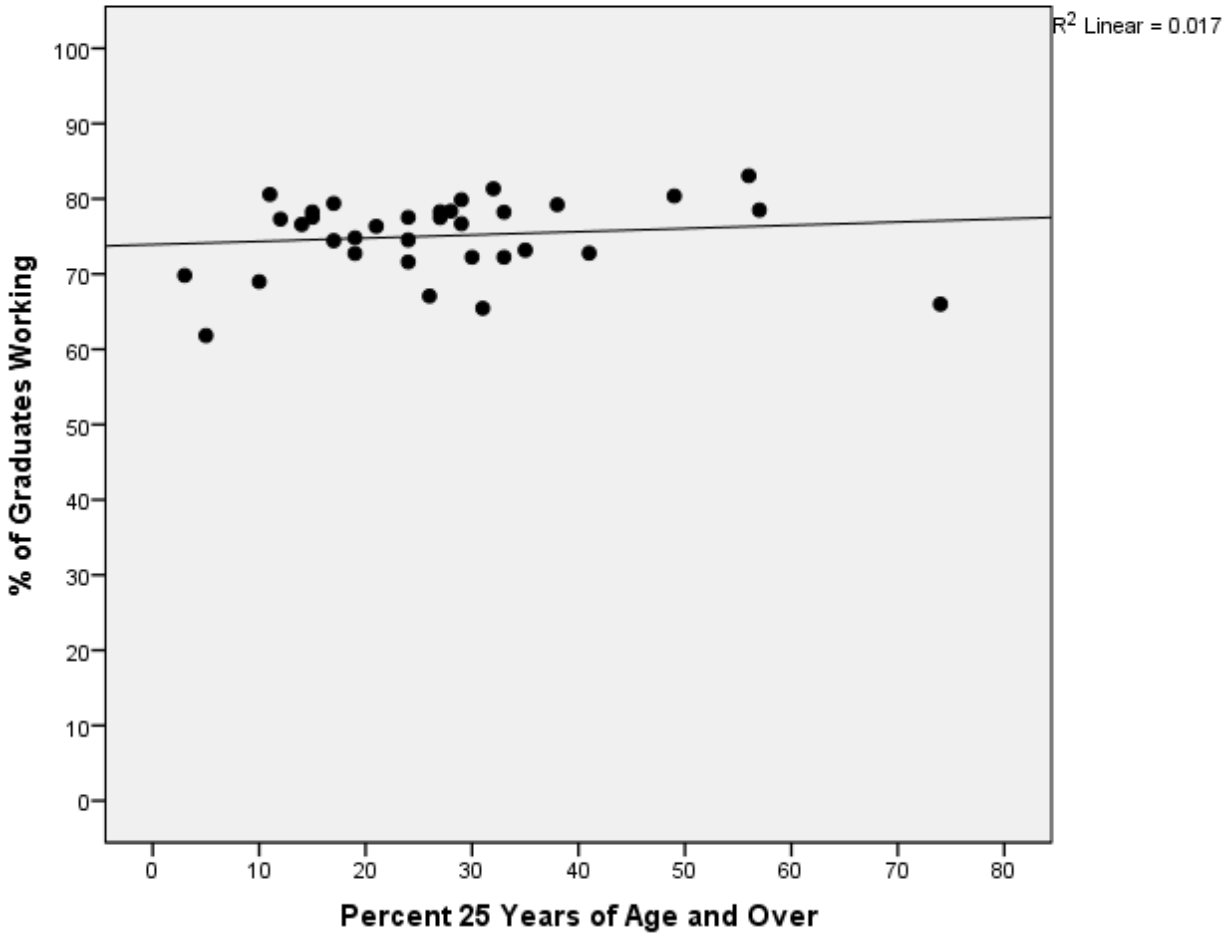
weak relationship, producing an R^2 of .017. The slope produced by these two variables suggests that for every percentage point increase in the *percentage of 25 year-olds and older*, there is a very modest .04 percentage point increase in the employment rate. Generally speaking, the age of the students has a very modest impact on the employment rate of the institution's graduates.

Figure 10: Relationship Between Median Salary After Graduation and Percent of Graduates Working



The findings show that the three factors with the strongest correlations with the employment rate of Texas college graduates are the *number of undergraduate programs* the institution offers, the *amounts of money spent per student for instruction*, and the extent to which the institution's *graduates qualify for financial aid*. The institutional factors – number of programs and instructional expense per FTE – are strongly correlated with the employment rate, but not as one would hypothesize. The data shows that institutions that give their students more degree options produce a lower employment rate. It is likely that highly specialized or esoteric degrees may produce graduates with limited degree options. More likely, however, is that the flagship institutions are the ones more likely to offer more degree options. They are also the institutions with the resources to spend on instructional expenses. These institutions attract wealthier, college ready students. What we are seeing in the terms of the peculiar relationship between employment

Figure 11: Relationship Between Percentage of Students 25 Years Old and Older and Percentage of Graduates Working



rates and the number of programs, or employment rates and instructional expenses is the effect of student characteristics. Institutions that educate a larger percentage of students with financial need produce graduates who cannot afford to stay out of the workforce for very long after graduation.

Conclusion

These findings have several implications for Texas public universities. First and foremost, it is clear from the data that as states continue to develop greater accountability measures for colleges and universities, outcome measures like the employment rate of an institution's graduates will help less selective institutions. Less selective, and often, under-resourced institutions find themselves suffering the consequences of outcome measures they have limited control over, without denying access to the most vulnerable populations they serve. This research project indicates, that at least on one key measure – the employment rate of university graduates – these institutions have a modest advantage. Texas universities that might consider limiting access to more challenging students might consider that these same students will help in producing more robust outcome measures.

These findings also highlight a need for institutions to reassess their programs and departments. This papers finds certain outcomes, which run counter to expectation. It is quite likely that within an institution, the findings may be very different over time. Knowing the impact of investments in the *career center* or in *instruction* over time would be very useful for a university to know. These findings highlight the need to develop more robust measures customized for institutions. Stronger data will allow university leaders to make investments in areas that will gain the best return on investment. Investments in areas that produce more robust outcome measures will help institutions serve their students more effectively. As data is becoming increasingly more available, university leaders must use this data to make the best decisions for their institutions.

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