

Introduction: Mississippi's Economy and its Impact on Higher Education Enrollment

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This research examines the relationship between Mississippi's statewide economy and the online enrollment statistics to major universities around the state. Online learning has been a growing trend in recent years and is becoming a cheaper alternative to some than going away to attend classes at a university while still getting a quality education. Therefore, it is important to consider the impact of Mississippi's statewide economy to see how big of a role it plays into universities online enrollment rate versus their traditional enrollment. Several studies have considered the impact of online learning, but there is a lack of research regarding enrollment based on economic data.

INTRODUCTION

Mississippi is a state notorious for its economy, which came in next to last for the state with the slowest growing GDP along with one of the highest unemployment rates in the country. On top of all that, Mississippi has the lowest median annual income in the country (Jack, 2007). With this in mind, most people would wonder how university enrollment rates are still rising in the state. Does online education play a role in higher education enrollment during economically harsh times like this? Will the growing tuition costs cause enrollment rates to drop? In this study, we attempt to answer these questions and find the relationship between Mississippi's economy and higher education enrollment.

In this study, we take a different approach than in many other studies regarding higher education enrollment by focusing on just one state. We also conduct a sophisticated analysis of higher education enrollment based on the net income by year of Mississippi residents to see if the state-wide economic status plays a role in higher education enrollment. Furthermore, we look at how the economy has affected higher universities online enrollment to see if students prefer distance education in economically harsh times.

There have been numerous studies conducted on student response to college prices. These studies show that students are more prone to looking at a college's tuition as a main factor in choosing a school's affordability without considering factors such as academic aid or other forms of financial aid offered (Leslie & Brinkman, 1987). These studies show that students react to the "sticker price" of a university because of their lack of knowledge regarding financial aid, or their belief that they wouldn't qualify (Mumper, 1996). Some studies have found that a \$1000 increase in tuition is enough to cause a 15-percentage point decrease in enrollment for black students and 13 percentage points for white students

(Kane, 1995). With this information, I believe that an increase in base tuition will impact the amount of incoming freshman for the next academic year.

Affordability is a deciding factor for most students when choosing whether to continue into higher education. If the economy is at an all-time low, some students might be discouraged from enrolling in college due to fear of graduating with an enormous amount of student loans to pay off. For example, in 1971 a family with a median income only used 3.7% of its income to pay for a single student attending a four-year public institution compared to 7% in 1997 (Heller, 1997). Colleges are getting much more out of reach for the lower class unless they are willing to take out high interest student loans. But if the economy is doing well, meaning lower interest rates for student loans, more people will be able to afford college more easily, thus being more likely to attend (Paulsen, 1990).

Building onto affordability, online education has seen a dramatic rise in popularity in recent years. To some it can even be seen as a cheaper alternative than traveling to attend university. Since it cuts out certain costs like travel costs, room and board as well as other miscellaneous expenses, distance education can be seen as an appealing solution for those looking to gain a degree while also trying to minimize student debt. And with recent advancements in technology, most people carry a computer in their pockets all the time which allow them access to their classes. With the vast improvements in accessibility to online classes as well as improvement of the content provided, distance education is more effective than ever before.

With this in mind we developed the following hypotheses: (1) the increasing cost of attending college will cause enrollment rates to drop. College tuition costs are rising higher and higher every year while Mississippi's economy is staying relatively still. This means that every year it is getting harder and harder for people to pay for college. (2) That economic development produces the expansion of higher education. If the economy in Mississippi starts to rise, people will be able to pay for college more easily, thus enrollment will increase. (3) As the economy in Mississippi declines distance education enrollment in higher education will rise. As the cost of college increases, it gets harder and harder for people to pay for college when Mississippi's economy isn't rising. Some might turn to distance learning to cut out the costs of travel and room and board while still earning credits towards their degrees. Distance learning is a cheaper alternative that still delivers quality educational content while allowing students the flexibility to work it around their work schedule.

LITERATURE REVIEW

Economics in Mississippi

Mississippi has one of the highest rates of poverty and unemployment in the nation and education is suffering because of it. Since most people can't afford to send their kids to nice school, most get a subpar education. As Jack (2007) states in his research, as much as 55% of residents in some towns live below the poverty line. The author also states that with this many people living below the poverty line it can be very hard for towns to get the funding they so desperately need for education. But as Conlon (1991) describes it, the people who do have the money for their children's education send their kids off to private schools instead of investing in public schools for the rest of the community. While this allows their kids to have a better education, it doesn't help any of the people living below the poverty line. This starts to explain why in Mississippi the people in poverty tend to stay in poverty while the wealthy pass their wealth on to their children by giving them a good education. As Adams (1974) explains, the poverty in rural Mississippi is hurting the rest of the state financially as well. When the working class isn't working, it can affect the economy of the entire state. Srinivasan (1988) describes Mississippi's economy better by calling it a dual economy, the economy in the rural areas and that of urban areas. While the urban parts of Mississippi are doing just fine, the rural areas lost from 5 to 20% of their population from 1970 to the time of this study, and probably even more since then. While the urban areas of Mississippi are projected to grow, the rural areas are going to continue to struggle below the national average unemployment rate. Hill (2008) also explains how 1 in 5 people in Mississippi are living below the poverty line. The author explains how the main reason behind this astonishingly high number is because of the lack of higher

education in the state. Most people don't even have anything beyond a high school diploma, and for that reason aren't qualified for many higher paying jobs. The poverty problem in Mississippi isn't exactly new, but we have yet to find a way to fix it.

Online Learning

Online learning is a more effective and cheaper alternative to traditional class based learning. Its cheap accessibility to quality learning content makes it a very good choice for schools that can't afford to hire high quality instructors. Mississippi could definitely use the help of online classes such as these to help boost the education within the state also while avoiding having to pay exceedingly high tuition fees. Bartley (2004) pointed out that it can be used across geographical and time constraints so people can work it around their schedules, so that they can keep going to school while they work a full-time job. The author also states that cost wise, online learning is a far more lucrative option when compared to class based learning. Nguyen (2015) also writes about the cost-effectiveness of online learning and how it helps combat the rising tuition costs of postsecondary education. While the lifetime earning gap between high school graduates and college graduates is continuing to widen, the cost of going to college is rising faster than inflation and student loan debt is rapidly increasing. The author concluded by stating that he observed about 92% of the people he surveyed saying that online education is as effective if not better than traditional education. Allen (2008) conducted a survey on online classes and found that the growth rate for online classes was around 12.9 percent versus just 1.2 percent growth rate for the overall higher education student population. The author even mentions the economy and its effect on online class enrollment. There is widespread agreement that higher gas prices will lead more students to choose online classes to avoid too much travelling. Meyer (2014) conducted a study of 39 colleges and their reaction to budget cuts to see which areas they would cut back or improve on. In her study, most universities actually chose to expand online modules while they scaled many other programs back in the event of budget cuts. So, what all of these studies had in common is that they all show online learning as a cost-effective alternative solution to the traditionally expensive class based learning. It allows students more room to work their studies around their work schedule while still receiving a quality education, possibly even better than they might get in the classroom for how much they are paying.

Total Enrollment Trends

Enrollment in higher education is at an all-time high rate, and some universities are struggling to keep up with the demand. New facilities are being built every year to accommodate the ever-growing student population. Many studies have been conducted as to why enrollment is growing at such a rapid rate as it is today. One of these studies was conducted by Schofer, (2005) which analyzes the rapid worldwide expansion of higher education enrollments in the twentieth century using pooled panel regressions. The author found that growth is higher in areas where state control over education is low, consistent with conflict and competition theories. Another interesting finding from his study was that enrollment seems to increase much more rapidly in the period after 1960, and seems to leap up in every type of country that they were able to distinguish. They explained this through the rise of a new model of society: democratization, and human rights, and scientization. Altbach (2009) studies the ways higher education has responded to the rising demand of higher education, or as he calls it, massification. The United States was the first country to achieve mass higher education with 40% of the age cohort attending post-secondary education in 1960. This massification is starting to lead to higher education starting to become a requirement for many job positions today as a result of the declining value of a diploma.

Corazzini (1972) tries to find the reason behind student's enrollment choice and conducted a survey of around 4,000 high school students. His results found strong structural relationships between college attendance and socioeconomic status. Paulsen (1990) also looks at factors that could influence student's decision to enroll or not to enroll in higher education. The difference in Paulsen's study was that he decided to look at the conceptual factors for choosing a university including sociology and economic factors. He discovered that the job market has an effect on a student's decision to enroll in higher education or to go straight into the workforce. If there is a recession and a lot of jobs that don't require a

degree are lost, the student will tend to want to enroll in higher education to gain a degree and in turn, a job with more security.

The study by Leslie & Brinkman (1987) explores the student price response to rising prices in higher education. Unsurprisingly, students' response to tuition increase was relatively large. This could be because this is the most visible and inescapable price of going to university, and most scholarships and grants won't fully cover this cost. The interesting thing they found in their study was that students tend to look at the tuition over benefits of financial aid when choosing a college. They choose to look at the most visible price before looking at the potential benefits they would receive in the form of academic scholarships at a university. Heller (2001) looks at the affordability of higher education in comparison to recent years as well as accessibility to most families. For almost three decades, college public tuition prices have increased at a rate more than twice that of general inflation. In 1971 a family with a median income only used 3.7% of its income to pay for a single student attending a four-year public institution compared to 7% in 1997. Colleges are getting much more expensive and more out of reach for lower class applicants unless students try to take out high interest student loans, which cause the risk of falling into debt after graduation. Howell (2003) discusses the growing higher education population and the struggle to keep up with demand, our new era of growing knowledge and information, economic recession and its impact on higher education and distance learning among many others. He also discusses issues that have affected distance-enrollment in the past along with potential solutions to help improve online enrollment numbers for the future.

Hypothesis development

As online education has seen a dramatic rise in popularity in recent years, it can also be seen as a cheaper alternative than traveling to attend university. Since it cuts out certain costs like travel costs, room and board as well as other miscellaneous expenses, distance education can be seen as an appealing solution for those looking to gain a degree while also trying to minimize student debt (Henckell, 2007).

Hypothesis 1: As the economy in Mississippi declines, the college's online enrollment rate will grow.

Affordability is a deciding factor for most students when choosing whether or not to continue into higher education. If the economy is at an all-time low, some students might be discouraged from enrolling in college due to fear of graduating with an enormous amount of student loans to pay off. If the economy is doing well more people will be able to afford college more easily, thus being more likely to attend (Paulsen, 1990).

Hypothesis 2: Economic development promotes the expansion of higher education.

There have been numerous studies on student response in response to college prices. Studies also show that students are more prone to looking at base tuition price as a main factor in choosing a school's affordability without looking into factors such as academic aid or other forms of financial aid offered. With this information, I believe that an increase in base tuition will impact the amount of incoming freshman for the next academic year (Leslie & Brinkman, 1987).

Hypothesis 3: Increasing costs of attending college will cause enrollment rates to drop.

Hypothesis Test

To test the hypotheses, a linear regression method was conducted with IBM SPSS Statistics V23. Regression was selected to validate the correlations among the variables.

In the column labeled R of Table 1 is the value of the correlation coefficient between the predictor and the outcome. When unemployment is used as the predictor the correlation between unemployment and online learning enrollment is (0.975). The next column contains R^2 which measures how much of the

variability in the outcome is accounted for by unemployment. The result is 0.95 which means that unemployment accounts for 95% of the variation in online learning enrollment.

**TABLE 1
MODEL SUMMARY**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.975a	.950	.925	393.86494

a. Predictors: (Constant), Unemployment

The next part of this study contains data that describes the relationship between economic variables and online learning as well as an ANOVA that tests if there is any correlation between the online enrollment and Mississippi's Unemployment rate (Table 2).

**TABLE 2
ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5899569.817	1	5899569.87	38.030	.025b
	Residual	310259.183	2	155129.592		
	Total	6209829.000	3			

a. Dependent Variable: Online

b. Predictors: (Constant), Unemployment

The only variable that was correlated with online learning was unemployment (Table 3). From our data we can see there is a negative relationship from the negative *b* value for unemployment.

**TABLE 3
COEFFICIENTS**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	17740.326	1543.033		11.497	.007
	Unemployment	-1198.454	194.338	-.975	-6.167	.025

a. Dependent Variable: Online

CONCLUSION

Based on the data from the model summary, the only variable able to be considered is unemployment. This variable tends to have a high correlation in regards to online enrollment. Since distance learning can be seen as a cheaper alternative than traditional courses, some people might choose to enroll online in order to gain a more stable job once unemployment rates start to rise. Surprisingly the other economic variables such as Net Taxable Income for Mississippi as well as the Average Income Tax had little to no effect on online enrollment rates. Tuition price didn't have much of an effect on enrollment rates either surprisingly. Most people would be astounded to see how colleges enrollments rates could keep rising after yearly tuition hikes. This could be due to most of this generation feels a need to go to college in order to gain a secure job. The price of gas didn't have a very large impact on enrollment rates either. In fact while it was expected for online enrollment to rise slightly once gas prices rose, the opposite happened. As gas prices fell from around 2012 online enrollment tended to keep growing.

The practical applications from this study include helping universities around the state better understand enrollment trends through the years. This study can also give them a better understanding of how students react in response to tuition increases through the years, as well as the widespread growth and acceptance of online enrollment.

This study has proven a correlation between Mississippi's unemployment rate and online enrollment. However the other variables we tested did not have this same result. Hopefully this study can help benefit universities around the state in order to help spark a new wave of growth in Mississippi's economy.

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