Journal of Education and Practice
ISSN 2222-1735 (Paper) ISSN 2222-288X (Online)
Vol.11, No.9, 2020

Assessing the Relationship Between Pell Grant and Federal Student Loan at Louisiana Four-Year Public Institutions

Ruth Endam Mbah[1] Divine Forcha Wasum[2] Carole Mireille Mende B. D[1]
1.Department of Public Policy, Southern University and A&M, LA, USA.
2.Centre International De Formation Européenne, CIFE Nice/Berlin

Abstract
After years of emphasizing college access in the US, lawmakers have become more concerned with college completion, this is because there has been a decline in the completion rate. Although there are other reasons, college affordability is one of the reasons why some students may start college but not complete it. Student loans are often justified on the grounds that higher education has economic benefits such as, it leads to higher salaries and improved employment prospects. Research has shown that grant aid increases the probability of enrollment in postsecondary education. Thus, grant aid is important to students' postsecondary opportunities and success. This study uses Pearson correlation, t-test and linear regression to evaluate the data and establish the relationship between Pell grants and Federal Student Loans. It seeks to find if a statistically significant relationship exists between Pell Grant and Student Loan.
Keywords: Student Loan, Pell Grant, Four-Year Public Institutions, Louisiana, Financial Aid, Federal Student Loan
DOI: 10.7176/JEP/11-9-04
Publication date: March 31st 2020

1. Introduction
The student loan debt crisis has been a subject of concern to both researchers and the general public. In 2019 alone, the overall Amount of student loan debt was an outstanding \$1.41 trillion in the United States with 54% of college attendees taking on debt to pay for their education, 14.4% of adults with a student loan and 10.8% of students with student debt that's past due for at least 90 days or in default (Matt T, 2019). There has been a 6% increase in student loan debt in the US from 2018 to 2019 with 33% rise since 2014, when the total debt was \$1.06 trillion(Matt T, 2019). The increasing cost of college is certainly a big factor in growing student loan debt (Brugel et al, 1977). Excessive student loan debt can have an impact on students as it can affect students' career choice, affect the quality of a student's life, and delay progress on achieving other financial goals (Fritz et al., 2019; Nissen et al., 2019; Pisaniello et al., 2019). According to research, approximately two out of five US adults are still paying off student loans and thus are unable to save for retirement. The Federal Pell Grant, named after Democratic U.S. Senator Claiborne Pell of Rhode Island, is a subsidy provided by the U.S. federal government for students to pay for college. Federal Pell Grants are limited to students with financial need and have not earned their first bachelor's degree, through participating institutions. The Pell Grant program is administered by the United States Department of Education, which determines the student's Pell eligibility through their financial need. Unlike the student loan, the Pell grants doesn't have to be repaid(Davidson, 2014; Baum, 2015; Mastrorilli, 2016; Rosinger and Ford, 2019).

2. Problem Statement
70% of American postsecondary students borrow to finance their education as the cost of postsecondary education has shifted to students and their families (Despard et al., 2016). During the last 11 years, student loan debts has increased 2.8 times more from 2007 to 2018 (National Student Loan Data System). Repaying these student loan debts is burdensome especially to students who do not complete their degree and are thereby less likely to get gainful employments (Perna et al., 2017; Despard et al., 2016). Thus, rise in student loan debts has become a major point of debate amongst scholars, policy makers, as well as the public (Houle & Addo, 2018). This study seeks to establish the relationship between Pell grant funding and student loans especially for low income students.

3. Literature Review
Over the past decade, there have been an increase in research and practitioners have expressed unease on the effects of student loan debt. To say that student loan debt is a crisis is an understatement. Studies have considered whether student loans are a barrier to student participation in higher education or if student debt influence students' choice of careers(Baker and Montalto, 2019). According to research, seven out of ten college graduates leave school with loan debt. In recent years federal and state financial aid policies have aimed at improving retention through improving college affordability. Need-based aid such as the Pell grant has received substantial interest from educators, policymakers, and academics (Park and Scott-Clayton., 2018). While early researchers had difficulties separating the effects of financial aid from confounding factors, recent research has sought to use "natural experiments" such as discontinuities in aid awards to identify the causal effects of financial aid programs. Most of

the research focuses on the effects of Pell Grants on initial enrollment in and choice among colleges. Recent research emphasizes identifying causal links between need-based aid and student outcomes(Lucca, Nadauld and Shen, 2015, 2018; Ulbrich and Kirk, 2017).

4. Objective of the Study
The main objective of this study is to assess the relationship between Pell Grant and Student Loan portfolio among four-year institutions in Louisiana

5. Research question: Does a statistically significant relationship exist between Pell Grant and Student Loan?

6. Hypothesis
H_o = There is no statistically significant relationship between Pell Grant and Student Loan
H_1 = There is a statistically significant relationship between Pell Grant and Student Loan

7. Methodology
In this study, a sample of 16 recognized four-year public institutions in Louisiana were used. The 16 universities were; Louisiana State University A & M college, Southern University A & M college, University of Louisiana at Lafayette, Southeastern Louisiana University, Northwestern State University of Louisiana, Grambling State University, University of Louisiana at Monroe, Louisiana Tech University, Nicholls State University, McNeese State University, University of New Orleans, Louisiana State University at Alexandria , Louisiana State University at Shreveport, Louisiana State University Health Services Center at New Orleans and Louisiana State University Health Services Center at Shreveport. Secondary data for this study was gotten from the National Center for Education Statistics. This study used Pearson correlation to establish if a positive or a negative relationship exists between the variables (Pell Grant and Student Loan), it used the t-test to test if a statistically significant relationship exists between the variables and it used linear regression to analyze the data
Linear Regression (y= a + bx) where y= Student Loan & x= Pell Grant

8. Delimitation
- Focus is on Louisiana and only four-year public institutions
- Data includes just undergraduate students

9. Findings

UNDERGRADUATE STUDENT FINANCIAL AID, 2016-2017				
Names of Louisiana Four-Year Public Institutions	Federal Student Loan		Pell Grant	
	Amount $	No of Awards	Amount $	No of Awards
Louisiana State University and Agricultural & Mechanical College	71365608	10261	22952943	5304
University of Louisiana at Lafayette	50852362	7510	22246544	5298
Southeastern Louisiana University	33196180	5698	19327207	4527
Northwestern State University of Louisiana	32219310	4466	14839523	3544
Southern University and A & M College	30493918	4230	17498885	3686
Grambling State University	27003740	3330	14619200	3032
University of Louisiana at Monroe	25298428	3900	13776253	3173
Louisiana Tech University	23243051	3568	10216749	2452
Nicholls State University	19585482	3050	9030124	2129
McNeese State University	16789116	2676	9353033	2199
University of New Orleans	14455920	2323	9202924	2172
Southern University at New Orleans	10713349	1337	5115309	1189
Louisiana State University-Alexandria	9046168	1361	4837260	1227
Louisiana State University-Shreveport	7683128	1041	4068997	980
Louisiana State University Health Sciences Center-New Orleans	3893070	449	803067	202
Louisiana State University Health Sciences Center-Shreveport	200629	23	25248	7

Source: Adapted from National Center for Education Statistics

Journal of Education and Practice
ISSN 2222-1735 (Paper) ISSN 2222-288X (Online)
Vol.11, No.9, 2020

Pearson Correlation

Correlations			
		Federal Loan	Pell Grant
Federal Loan	Pearson Correlation	1	.931**
	Sig. (2-tailed)		.000
	N	16	16
Pell Grant	Pearson Correlation	.931**	1
	Sig. (2-tailed)	.000	
	N	16	16

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Authors Calculations Adapted from National Center for Education Statistics

According to Pearson correlation, there is a near perfect positive linear correlation (0.931) between Pell Grant and Federal Student loan. Which denotes that, a positive relationship exists between Pell Grant and Federal Student loan.

T-Test: Two-Sample Assuming Unequal Variances

	Variable 1	*Variable 2*
Mean	23502466.19	11119579.13
Variance	3.31056E+14	5.14507E+13
Observations	16	16
Hypothesized Mean Difference	0	
df	20	
t Stat	2.532576552	
P(T<=t) one-tail	0.009901876	
t Critical one-tail	1.724718243	
P(T<=t) two-tail	0.019803751	
t Critical two-tail	2.085963447	

Source: Author's Calculation Adapted from National Center for Education Statistics

Findings from t-Test: Two-Sample Assuming Unequal Variances show that **p-value<0.05** and the **t Stat>t Critical two-tail.** Thus, we reject the null hypothesis. This implies that, a statistically significant relationship exists between Pell Grant and Federal Student Loan.

Linear Regression

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.931[a]	.866	.857	6891408.715	.866	90.563	1	14	.000

a. Predictors: (Constant), Pell Grant

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.301E+15	1	4.301E+15	90.563	.000[b]
	Residual	6.649E+14	14	4.749E+13		
	Total	4.966E+15	15			

a. Dependent Variable: Federal Loan
b. Predictors: (Constant), Pell Grant

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-2747530.768	3252215.986		-.845	.412	-9722840.321	4227778.785
	Pell Grant	2.361	.248	.931	9.516	.000	1.829	2.893

a. Dependent Variable: Federal Loan

Source: Authors Calculation Adapted from National Center for Education Statistics

From the Linear regression results, the p-value<0.05 (.000), confirming the rejection of the null hypothesis. The R is 0.931, meaning: 93% of the variation in the dependent variable (federal student loan) is accounted for (or predicted) by the independent variables (Pell grant).

10. Conclusion

From the above results, it is evident that changes in Pell grant has a significant influence on the amount of federal student loan taken by students to finance higher education in Louisiana, since there is a positive correlation between the two variables. According to Seung et al (2017) on their research titled "*The Impact of Pell Grant Eligibility on Community College Students' Financial Aid Packages, Labor Supply, and Academic Outcomes*", receiving a modest Pell Grant instead of additional loans leads students to reduce labor supply and increase enrollment intensity. They also state that students' initial enrollment choices are influenced by an offer of Pell Grants versus loans

11. Limitation

One limitation of the data is that it only includes students attending four-year public institutions in Louisiana. Students in other states that attend four-year public institutions are excluded in the study. Students that attend four-year private institutions in Louisiana as well as students in other states that attend four-year private institutions are excluded. Students that attend other Public institutions in Louisiana that are not four-year institutions are also excluded from the sample.

12. Recommendation

- Increase Pell Grant for low income students
- Expand more scholarship schemes for meriting students and low-income students
- Increase pre-college counseling for high school students
- Develop and expand parental counseling sessions for the guardians of first generational students
- Invest in financial literacy seminars at high schools and colleges.

REFERENCES

Baker, A. R. and Montalto, C. P. (2019) 'Student loan debt and financial stress: Implications for academic performance', *Journal of College Student Development*. Johns Hopkins University Press, 60(1), pp. 115–120. doi: 10.1353/csd.2019.0008.

Baum, S. (2015) *The Federal Pell Grant Program and Reauthorization of the Higher Education Act*. Available at: http://publications.nasfaa.org/jsfa/vol45/iss3/4 (Accessed: 11 February 2020).

Brugel, J. F., Johnson, G. P. and Leslie, L. L. (1977) 'The demand for student loans in higher education: A study of preferences and attitudes', *Research in Higher Education*. Kluwer Academic Publishers, 6(1), pp. 65–83. doi: 10.1007/BF00992016.

Davidson, C. (no date) *Changes to Federal Pell Grant Eligibility: The Effect of Policy and Program Changes on College Students at Public Institutions in Kentucky*, *Journal of Student Financial Aid*. Available at: http://publications.nasfaa.org/jsfa/vol43/iss3/2 (Accessed: 11 February 2020).

Fritz, E. M., Van Den Hoogenhof, S. and Braman, J. P. (2019) 'Association between medical student debt and choice of specialty: A 6-year retrospective study', *BMC Medical Education*. BioMed Central Ltd., 19(1), p. 395. doi: 10.1186/s12909-019-1797-2.

Lucca, D. O., Nadauld, T. and Shen, K. (2015) *Credit Supply and the Rise in College Tuition: Evidence from the Expansion in Federal Student Aid Programs*.

Lucca, D. O., Nadauld, T. and Shen, K. (2018) 'Credit Supply and the Rise in College Tuition: Evidence from the Expansion in Federal Student Aid Programs', *The Review of Financial Studies*. Oxford University Press (OUP), 32(2), pp. 423–466. doi: 10.1093/rfs/hhy069.

Mastrorilli, M. E. (2016) 'With Pell Grants Rising: A Review of the Contemporary Empirical Literature on Prison Postsecondary Education', *Journal of Correctional Education (1974-)*. Correctional Education Association, pp. 44–60. doi: 10.2307/26506636.

Nissen, S., Hayward, B. and McManus, R. (2019) 'Student debt and wellbeing: a research agenda', *Kōtuitui: New Zealand Journal of Social Sciences Online*. Taylor and Francis Inc., 14(2), pp. 245–256. doi: 10.1080/1177083X.2019.1614635.

Park, R. S. E. and Scott-Clayton, J. (2018) 'The Impact of Pell Grant Eligibility on Community College Students' Financial Aid Packages, Labor Supply, and Academic Outcomes', *Educational Evaluation and Policy Analysis*. SAGE Publications Inc., 40(4), pp. 557–585. doi: 10.3102/0162373718783868.

Pisaniello, M. S. *et al.* (2019) 'Effect of medical student debt on mental health, academic performance and specialty choice: A systematic review', *BMJ Open*. BMJ Publishing Group. doi: 10.1136/bmjopen-2019-029980.

Rosinger, K. O. and Ford, K. S. (2019) 'Pell Grant Versus Income Data in Postsecondary Research', *Educational Researcher*. SAGE Publications Inc., 48(5), pp. 309–315. doi: 10.3102/0013189X19852102.

Student Loan Debt Climbs to $1.4 Trillion in 2019 | Experian (no date). Available at: https://www.experian.com/blogs/ask-experian/state-of-student-loan-debt/ (Accessed: 14 February 2020).

Ulbrich, T. R. and Kirk, L. M. (2017) 'It's time to broaden the conversation about the student debt crisis beyond rising tuition costs', *American Journal of Pharmaceutical Education*. American Association of Colleges of Pharmacy. doi: 10.5688/ajpe816101.