

Managing Factors That Correlate to High Cohort Default Rate at Public 2-Year Community Colleges in Michigan

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Abstract

Community colleges serve more than a considerable proportion of Americans who could not otherwise attend colleges by providing access to fulfill their educational goals. Many of the students enrolled in the institutions look to the federal government to finance their educational expenses by obtaining federally guaranteed student loans. The borrowers who default on their student loans cut across race, gender, and age, with Blacks and Hispanic American males more likely to default. The research problem addressed in this quantitative correlational study was the high cohort default rates at 26 public 2-year community colleges in Michigan. The high cohort default rates present problems to the institutions' ability to generate revenue to meet educational budgets. The purpose of this quantitative correlational study was to identify variables associated with student loan default in the 26 public 2-year community colleges in Michigan. The study was guided by the conceptual framework of the student-institution fit model, focusing on individual student attributes and institution-level variables that accounted for the willingness to repay behavior. A quantitative methodology with a nonexperimental design was used to address the research questions. Secondary data were extracted from the National Student Loan Data System and the Integrated Postsecondary Education Data System. The results for all the research questions showed that the assumptions of normality, homoscedasticity, and absence of multicollinearity tests were met, and null hypotheses were not rejected. The study's findings showed that institution-level factors did not significantly predict student loan default among borrowers but rather individual characteristics. I recommended future research to explore default patterns among borrowers in public 2-year community colleges after the COVID-19 crisis in terms of federal government policies that could result in a recommendation for practice for institu-

tions. The practice recommendations included institutions developing a financial aid education and outreach program, a default prevention guide, and special attention to students eligible for Pell Grants.

Keywords

Michigan, Student Loan Debt, National Data, Federal Financial Aid, Variables Affecting Student Loan Default, Repayment, Age, Gender, Ethnicity/Race

1. Introduction

Public community colleges fill a crucial role in American postsecondary education by enrolling students who could not, otherwise, attend college (Inge, 2017). The general admission policy allowed institutions to admit a person with or without a high school diploma if the institution believed the applicant would benefit from formal education, and this made admission into public community colleges possible for many students. The liberal admission policy, coupled with federal financial aid, allowed students with low-income who were not academically prepared to access college education (Inge, 2017). However, many students at public community colleges who financed their education through federal loans and other supported loans by the federal government do not repay them. Nationally, borrowers who attended public community colleges and agreed to repay their loans during the cohort year of 2018 defaulted at the rate of 11.5% compared to 5.4% of those who participated at 4-year colleges and universities (U.S. Department of Education, 2021).

According to the ED U.S. Department of Education 2021 data, the cohort default rate (CDR) on student loan default continued to rise in Michigan. Michigan is one of the 10 states with the most student loan debt in the country, with a \$49.9 billion (about \$150 per person in the US) loan balance (Friedman, 2021). The rise in the CDR from 11.8% to 12.9% indicated that 1 in 8 borrowers in all postsecondary institutions in Michigan who entered repayment from 2015 through 2017 defaulted on their obligations to pay their debt (McVicar, 2017). According to the Institute for College Access and Success (TICAS, 2019), approximately 7.4 million students (about twice the population of Oklahoma) nationally, defaulted on their loans; of those 1.1 million defaulted over the past 12 months (Anderson, 2017). The data also indicated that default risks were higher among low-income, Black Americans, Hispanic Americans, and single-parent borrowers (Scott-Clayton & Li, 2016; TICAS, 2019). The research focused on the relationship between institution-level factors and CDRs in public 2-year community colleges in Michigan to investigate student loan default.

1.1. Statement of the Problem

The problem addressed in this quantitative correlational study was the high CDRs

at public 2-year community colleges in Michigan. The default rates of 10.8% to 21.5% at some institutions exceeded the national average for community colleges. If unchecked, the default rate could reach a level that would negatively affect the institutions (U.S. Department of Education, 2019). High CDR has become a national problem affecting institutions' ability to generate revenue to meet educational budgets. High CDRs create severe implications for institutions and students. Institutions stand to lose federal grants and loan eligibility when the default rate in 3 consecutive years is 30% or more (U.S. Department of Education, 2019). They would also be required to submit a default management plan to the ED. These institutions could end up being suspended from Title IV of the HEA programs (U.S. Department of Education, 2016), impacting their ability to function effectively. Many researchers attributed the high student loan default rates to demographics, i.e., age, ethnicity, gender, income, family background, socioeconomic status, etc. (Chrisman, 2015; Hillman, 2015; Ishitani & McKittrick, 2016; Kool & Seaks, 2021; Looney, & Yannelis, 2015). Ganem and Manasse (2011) explored the relationship between scholarships and student success in a 4-year liberal art school and observed that financial support contributed significantly to CDR. The authors recommended future studies on borrowers' academic skills and motivation factors to provide institutions and policymakers with an adequate understanding of CDR. Proper research of this problem and other factors contributing to high CDR would assist higher education institutions, especially public 2-year community colleges, in managing student loan default rates.

1.2. Purpose of the Study

The purpose of this quantitative correlational study was to identify variables associated with student loan default in public 2-year community colleges in Michigan. I examined the institution-level variables related to the student loan default. The targeted population was 28 public 2-year community colleges in Michigan whose student loan borrowers enrolled, entered repayment, and defaulted on their loan during 2016, 2017, and 2018 and were included in the ED CDRs in 2019. Datasets were compiled from the National Student Loan Data System (NSLDS) and the Integrated Postsecondary Education Data System (IPEDS). The NSLDS contained the 2019 CDR for 26 public 2-year community colleges in Michigan. The two institutions with no default rates were excluded from the analyses. Data on college size, location, federal student loans, Pell Grants, retention, and graduation rates were exported from IPEDS for the affiliated institutions and years. Three institutions were missing data on retention rates, and six institutions were missing data on graduation rates. The missing values were handled pairwise by including all cases that had necessary data for each analysis. I used a quantitative correlational design, which showed how analyzing the ED's secondary data was associated with CDR.

1.3. Introduction to Research Methodology and Design

A quantitative methodology with a correlational, nonexperimental design was

used for this study. In quantitative correlational, nonexperimental research, efforts were made to collect numbers to solve problems. The goal was to collect numerical data, summarize the data, and conclude the gathered data (Sekaran & Bougie, 2016). The data collected were used to measure variables to establish relationships (Creswell & Creswell, 2017). The quantitative correlational research was aligned with the problem and purpose statements because it explored relationships between institution-level factors and CDRs. The research involved the analysis of secondary data obtained from the NSLDS of public 2-year community colleges in Michigan. The aim of this quantitative correlational study was to better understand the default rates in public 2-year community colleges in Michigan by analyzing institution-level factors, i.e., college size and location; percentage of loans and Pell Grants, and first-year retention and graduation rates, with the default rates to help the management lower the CDRs. Correlational research was appropriate for the study because it examined whether a nonexperimental relationship existed between the CDRs (outcomes) and the institutions. This quantitative correlational design allowed each independent variable effect to be measured and separated to determine differences in its impact; it did not show cause and effect (Bryman & Bell, 2015).

1.4. Research Questions

According to Farrugia et al. (2010), research questions and hypotheses should align with the research design, and research questions should be specific to the central idea. Therefore, the following research questions (RQ) and hypotheses aligned with the problem statement to meet quantitative correlational research goals.

RQ1

To what degree are institution-level county and region (college size and location) related to the student loan default among the borrowers in public 2-year community colleges?

RQ2

To what degree are institution-level financial aid award factors (i.e., percentage of loans and Pell) related to student loan default among the borrowers in public 2-year community colleges?

RQ3

To what degree are institution-level performance factors (first-year retention and graduation rates) related to student loan default among the borrowers in public 2-year community colleges?

1.5. Hypotheses

H₀

There were no significant relationships between college size and location related to the student loan default among the borrowers in public 2-year community colleges.

H_a

There were significant relationships between college size and location related to the student loan default among the borrowers in public 2-year community colleges.

H_{2o}

There were no significant relationships between percentage loans and Pell Grants related to student loan default among the borrowers in public 2-year community colleges.

H_{2a}

There were significant relationships between percentage loans and Pell grants related to student loan default among the borrowers in public 2-year community colleges.

H_{3o}

There were no significant relationships between first-year retention and graduation rates related to student loan default among the borrowers in public 2-year community colleges.

H_{3a}

There were significant relationships between first-year retention and graduation rates related to student loan default among the borrowers in public 2-year community colleges.

1.6. Significance of the Study

This quantitative correlational study focused on the relevant data associations with CDRs at public 2-year community colleges in Michigan. I examined how the institution-level factors were related to CDRs for the borrowers who agreed to repay their student loans during the cohort FY 2018. The examination of the data and findings provided insights into the institutions' high CDRs.

There were implications, i.e., practical, social, political, financial, and economical in examining student loan default and its associated CDRs. First, study results provided opportunities to manage the public 2-year community colleges in Michigan to identify borrowers with different defaulting risks (Baum, 2016). Identifying at-risk borrowers would enable the institutions to design plans to support them, such as alternative college financing methods, aid based on needs, holding harmless students with the highest financial needs, and private giving. Actions like these would help the management reduce student loan default and provide a substantial opportunity to recognize warning signs of the possibility that borrowers would run into repayment difficulties (Baum, 2016). Second, like postsecondary institutions with high CDRs, institutions could use the findings to produce directed and new loan and debt management assistance, i.e., courses on personal budgets, finance, and collaboration with area high schools on dual enrollment could serve as further information about financial aid resources (Luna-Torres et al., 2018). Finally, the study results could add to the body of literature by increasing the amount of limited scholarly research on student loan default rates.

1.7. Definitions of Key Terms

American College Test (ACT)

Test institutions make admission decisions on students seeking entry into colleges and universities (Princeton Review, 2021).

Federal Family Education Loan (FFEL)

Loans made to borrowers and guaranty agencies warranty the loans that allow students to change repayment plans anytime they choose (U.S. Department of Education, 2019).

Federal Supplemental Educational Opportunity Grant (FSEOG)

Grant award to undergraduate students who need financial aid. The college determines this based on the student's financial need (U.S. Department of Education, 2019).

Higher Education Act of 1965 (HEA)

This federal law is designed to strengthen educational resources for institutions to provide financial assistance to students who attend a postsecondary institution and higher education (Congressional Research Service, 2020).

Integrated Postsecondary Education Data System (IPEDS)

The National Center for Education Statistics (NCES) collects postsecondary education data for higher education institutions (National Center for Education Statistics, 2023).

National Center for Education Statistics (NCES)

An educational unit that serves postsecondary data collection and analysis for higher education institutions (U.S. Department of Education, 2021).

National Student Loan Data System (NSLDS)

A ED central database for student aid houses received data from institutions, guaranty agencies, Direct Loans, and other ED programs (U.S. Department of Education, 2019).

Title IV Aid Program

A scheme that provides students financial assistance to help them obtain a postsecondary education in individual institutions of higher education (Congressional Research Service, 2020).

1.8. Summary

The number of students who obtained student loans to finance their education and failed to repay them had increased in public 2-year community colleges in Michigan, which caused problems for students and their respective institutions. The increase in student loan defaults affects the CDRs. Public 2-year community colleges in Michigan experienced high CDRs, which impacted the Title IV financial scheme. The HEA of 1965 provides government assistance to Americans to finance a college education, especially low-income students or other socioeconomic status. As part of the Title IV aid program, student loans play an integral role in attending colleges and achieving the American dream of higher education. The rising tuition and fees coupled with inflation created a need for an in-

crease in student loans, especially for students whose families' income was two or three times below the federal poverty level. High student loan debt was a problem that caused growing concerns to taxpayers, colleges, and the government over the high default rates among borrowers.

The purpose of this quantitative correlational study was to examine the relationships between institution-level variables and CDRs at public 2-year community colleges in Michigan. The strength and direction of the factors were reviewed as part of the study. The RQ and hypotheses were obtained for three specific objectives. Every hypothesis showed the relationship's degree to the CDRs brought about by institution-level factors. The student-institution fit model (Cabrera et al., 1992) was the research design used as a framework. I used the ED's quantitative secondary data by reviewing institution-level outcome factors and default rates. The data collected were analyzed. I used the SPSS, version 27.0 to conduct the analysis, as it was designed to solve statistical problems relating to regression and correlation. The significance of this quantitative correlational research was to understand better the student loan defaults among the borrowers at the institutions. The findings of this quantitative correlational study could help the public 2-year community colleges in Michigan design plans to manage CDRs and provide other postsecondary institutions with a better understanding of reasons for students not repaying their debt.

In Chapter 2 of this study, I discuss a detailed publication review and relevant overview of available studies on CDRs, and the factors associated with student loan default. A critical analysis of the studies helped put CDR issues and student loan default problems in broader perspectives. By examining the variables, borrowers in all demographics, i.e., age, ethnicity, gender, income, race, etc. would be less likely to default on loan repayment, making the application processing more efficient and saving time and money.

2. Literature Review

The purpose of this quantitative correlational study was to identify variables associated with high CDRs in public 2-year community colleges in Michigan. The study examined institution-level variables related to the CDRs among Michigan's 28 public 2-year community colleges. Data were compiled from the NSLDS and IPEDS. The NSLDS contained the 2018 CDRs for 26 public community colleges in Michigan. The two institutions with no default rates were excluded from the analyses. Compared to 4-year institutions, the high CDRs highlight the need for a better understanding of the factors related to the increased likelihood of borrowers' nonpayment so that students, community colleges, and policymakers, in general, are more informed in managing CDRs.

In this chapter, I discussed student loan history, and summarized the student loan program of the Title IV of the HEA and its consequences in higher education. I examined the possible implications of student loan nonpayment for individual borrowers and colleges and universities in the process. I concluded this chapter with a combination of ideas and critical analysis of the publications on

factors associating CDRs with student loan borrowers and the institutions they attended. The processes employed included reviewing relevant articles using ERIC, EBSCOhost, ProQuest, Google Scholar, Refworks, and National Student Loan.

I reviewed publications on CDRs directed in peer-reviewed articles. The literature review was on peer-reviewed journal articles published in higher education, economics, finance, and student loan nonpayment in the last 5 years (except for specific seminal works). Searches were reviewed using the following keywords: Michigan, *student loan debt*, *national data*, *federal financial aid*, and *variables affecting student loan default, repayment, age, gender, and ethnicity/race*. A more significant number of relevant studies I found on the association of CDRs showed limited investigations, resulting in a gap in the literature. Few published studies on CDRs included institutions and student factors at community colleges (**Figure 1**).

The quantitative correlational design considered the student-institution fit model for this study as appropriate. The model provided a structure for selecting independent variables from the inception of student academic success and deficiencies in higher education environments (Hepworth et al., 2018). Cabrera et al. (1992) were valuable in understanding financial aid, family support, educational goals, academic integration, and academic achievement as influences in student loan default outcomes. The factor analysis contained institution-level variables and how those variables influenced institutions. The student-institution fit model combined academic and social measurements and the student integration between the student body and instructors for college completion and departure.

The student-institution fit model connects to this study's problem statement to identify variables associated with student loan default among the borrowers who attended a public 2-year community college in Michigan. The selected theoretical framework could help solve business problems and could guide the analysis of the relationship between institution variables (i.e., location, campus size, loan and Pell Grants, retention, and graduation rates) and student attitudes to loan default. Other theoretical frameworks found in the literature presented alternative reasons for loan delinquency, including economic and psychological viewpoints, government policy, and interdisciplinary approaches.

The federal government had established borrowers' yearly amounts based on classification and status. **Table 1** illustrates the maximum amount.

Dependent borrowers could accumulate up to \$31,300 and independent borrowers up to \$57,500 (Kelchen, 2019).

In the past, the federal government introduced various programs to assist borrowers in their monthly repayment loans. The income-driven repayment (IDR) plans enabled borrowers to cap each monthly payment on loans to portions of borrowers' disposal incomes and write off the balances after a certain number of years (Inge, 2017). The IDR plans assisted borrowers who had experienced financial difficulties paying their loans. The plans were first introduced in 2007 under the College Cost Reduction and Access Act (CCRAA) law and enhanced under the Health Care and Education Reconciliation Act (HCERA). In 2015,

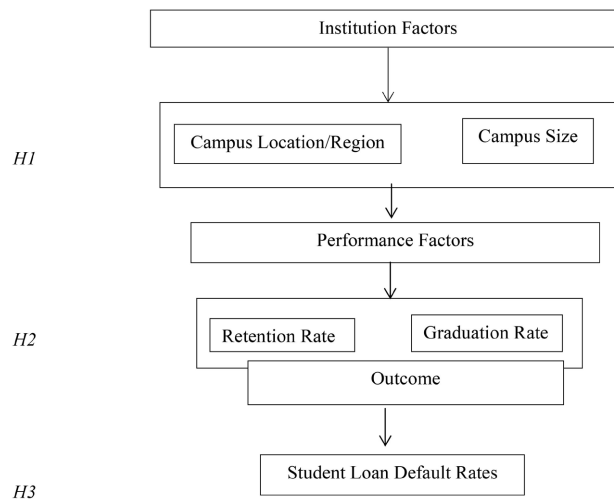


Figure 1. Conceptual Framework of the Study. *Note.* The model development and the chosen variables for the study integrate research studies related to student loan default.

Table 1. Maximum annual loan based on classifications

Classification	Dependent Borrower	Independent Borrower
First year student	\$5500	\$9500
Second year	\$6500	\$10,500
Third/Fourth year	\$7500	\$12,500

Note. The chart is adopted from the Federal Student Aid. Borrowers could borrow up to the maximum amount if there were needs to borrow (U.S. Department of Education, 2019).

President Obama introduced the IDR choices by establishing Pay as You Earn (PAYE) and Revised Pay as You Earn (REPAYE) alternatives for borrowers to make the best choices for them (U.S. Department of Education, 2019). The programs allowed borrowers to make payments each month equal to 10% of disposable earnings and cap payments so that borrowers did not exceed more than a 10-year regular repayment plan. The outstanding amount is written off after 20 years for undergraduate loans and 25 years for graduate loans. The government pays interest benefits that limit the increase on the remaining amounts during the repayment period even if the interest accrued exceeds each month's payments. The government recognized written-off balances as taxable earnings (U.S. Department of Education, 2019). **Table 2** provides an explanation of the various options available to borrowers to avoid delinquency and default on their loans.

The Government Accountability Office (GAO) explained that 24% of Direct Loan borrowers were enrolled in the IDR repayment program in 2016, indicating a 10% increase from 2013.

2.1. Student Loan Defaults

The literature on student loan defaults presented mixed information ranging

Table 2. Federal government income driven repayment plans.

Type of Plan	Plan Description
Pay as You Earn (PAYE)	The plan provides borrowers to make maximum monthly payments equal to 10% of disposable income for 20 years, and the remaining balances are written off. The program allows the government to make interest payments for up to three years to prevent the remaining amount from increasing even if the interest accrued exceeds monthly payments. Internal Revenue Service (IRS) treats forgiven balances as taxable income.
Revised Pay as You Earn (REPAYE)	The plan allows borrowers to make payments equal to 10% of income after paying taxes each month. The program also caps payments not to exceed the 10-year standard repayment plan amount. The remaining amount is written-off after 20 years for undergraduate loans and 25 years for graduate loans. The government pays interest benefits that limit the remaining increases during the repayment period even if the interest accrued exceeds monthly payments. The IRS recognizes forgiven credits as taxable income.
Income-Based Repayment (IBR)	Each month, under this plan, payments are capped at 10% of disposable earnings for fresh loan borrowers after July 1, 2014. After July 1, 2014, the balances for new borrowers are forgiven after 20 years and 25 years for previous borrowers. All payments are capped at 15% of disposable income. The federal government pays interest benefits for up to three years to avoid the outstanding balances increasing regardless of more expensive accrued interest than the monthly payments. The IRS then treats the balances as taxable incomes.
Income-Contingent Repayment (ICR)	The plan allows borrowers to pay either the lesser of 20% of disposable earnings or what the borrowers would spend on a 12-year repayment plan that adjusts according to changes in the borrowers' earning levels. The outstanding debt is then forgiven after 25 years, and IRS treats balances as taxable incomes.
Public Service Loan Forgiveness (PSLF)	The plan provides loan discharge for government and nonprofit workers after ten years (120 monthly payments). The loan balances are forgiven and not treated by the IRS as taxable incomes.

Note. The data were adapted from the [Bipartisan Policy Center \(2021\)](#). The IDPs are affordable options for borrowers to choose to avoid delinquency in their loans ([U.S. Department of Education, 2019](#)).

from student to school characteristics. The student loan default created severe consequences for the borrowers. Defaulted borrowers faced punishment ranging from inability to postpone and obtain forbearance on loan; non-participation in other government programs, including loan forgiveness; the loss of credit facilities and collections; delinquent reporting to the credit agencies, garnishment of federal and state tax refunds, wage garnishments, and additional interest, and penalties, ineligible for other federal student aid (Ionescu & Ionescu, 2014; Ionescu & Simpson, 2016; Lochner et al., 2013; Looney & Yannelis, 2015; Mueller & Yannelis, 2019). Woo (2002) concluded that defaulted borrowers had more significant risks of lawsuits, collections, and low credit ratings. Edmiston et al. (2013) explained that borrowers who defaulted could face professional sanctions, including the inability to practice and the withdrawing of licenses.

The consequences of student loan default at the institutional level included the loss of participation in the FFEL, Direct Loan, and Pell Grant Programs (U.S. Department of Education, 2019). In 1989, the U.S. Government began to impose sanctions on colleges and universities with a high default rate of 30% or higher in a FY (Gross et al., 2009). Institutions with a 3-year high CDR must develop and implement a default management plan. A 3-year CDR of 30% or more, or if the current year CDR is 40%, would cause the institution to lose eligibility to participate in the Direct Loan and Federal Pell Grant Program (U.S. Department of Education, 2019). A loss of federal funds could create significant challenges for institutions to implement their programs, such as student recruitment and retention (Flint, 1997).

A review of the latest CDRs provided higher 2-year community college rates and lower rates for 4-year institutions (U.S. Department of Education, 2019). Looney and Yannelis (2015) found that borrowers from vocational schools, public 2-year community colleges, and for-profit institutions were more likely to default on loans. Yet, several other studies did not point to institutional type as a catalyst for default but to other characteristics. These studies found that ethnicity and completion status was predicted to be default status (Lochner & Monge-Naranjo, 2015). Notably, public 2-year community colleges tend to have many students drop out without completing a degree (Head, 2019; Lochner & Monge-Naranjo, 2015). Many community college students tend to enroll, stop and re-enroll over time (Head, 2019). This practice created a gap in the literature on CDRs.

2.2. Examination of Cohort Default Rates (CDRs)

The CDR is one of the metrics the ED uses to measure institutions' accountability in managing federal student loans among the borrowers who enter repayment within the cohort FY (U.S. Department of Education, 2021). A borrower is considered in default if no payment on a) Subsidized Federal Stafford Loans; b) Unsubsidized Federal Stafford Loans; c) Federal Direct Stafford/Ford Loans (subsidized and unsubsidized); and d) Unsubsidized Federal Direct Stafford/Ford Loans (subsidized and unsubsidized) has been received for over 270 days (U.S. Department of Education, 2021). Since 2014, the ED evaluated institutions using

three years in calculating CDRs for accountability purposes that begin on October 1 of the FY when the borrower enters repayment, and ends on September 30 of the following two FY (U.S. Department of Education, 2021). In this study, the cohort FY is where borrowers who entered repayment in FY October 1, 2016, to September 30, 2018, representing 2019 cohort FY.

Institutions with a default rate greater than 40% in one year for loans received on the FFEL and Direct Loan Programs were subject to suspension in the participation of the Direct Loan, Pell Grant, and Perkins Loans Programs, but not on other Title IV programs (U.S. Department of Education, 2019). Similarly, institutions with CDRs that exceed 30% or more in each of the most recent three FYs for loans made under the FFEL and Direct Loan Programs must submit a Default Prevention Plan that explains how institutions plan to address the student loan repayment. With a CDR of 30% in three or more consecutive years, the institution loses eligibility to participate in Title IV funds, including federal student loans and Pell Grants (U.S. Department of Education, 2019). Additionally, institutions with a CDR of 15% or greater in any single year for loans made under the Federal Perkins Loan Program can be deemed administratively incapable. They could be considered ineligible to participate in the Direct Loan, Pell Grant, and Perkins Loan Programs (Congressional Research Service, 2020).

There were variations in the CDRs by public institutions and type. **Figure 2** showed the 3-year 2018 CDRs for public 2-year community colleges and less than 2-year institutions with the highest default rates. Borrowers at the public 2-year institutions defaulted at the rate of 11.5% compared to 4-year institutions at 5.4%, and less than 2-year institutions at 8.7% (U.S. Department of Education, 2021).

Certain student-level variables such as race, gender, and family income and institutional-level factors such as type and sector are associated with high default rates (Hillman, 2015). Hillman (2015) examined the 3-year CDR of borrowers leaving college in 2008; he concluded that institutions such as for-profit colleges with many minority students, and serving more significant percentages of Black and low-income students were more likely to have CDRs above the 30% threshold that would subject the institutions to additional federal government oversight or sanctions. Borrowers who experienced economic challenges were more likely to face the adverse effects of loan defaults, including single mothers (Hinton-Smith, 2016), ethnic minorities (Addo et al., 2016), and poor socioeconomic families (Callender & Mason, 2017).

2.3. Cohort Default Rates and Community Colleges

Many factors contribute to why borrowers from public 2-year community colleges failed to repay their loans at a high rate (Chamberlain, 2019). The economy faced with downturn economic activities creates opportunities for those not working or in school. Chamberlain (2019) found that borrowers who obtained their degrees during the economic downturn experienced considerable challenges finding employment contributing to high student loan default. Additionally, borrowers who could find jobs secured employment with minimum wages,

Official 3-Year Cohort Default Rates, Public Sector, by Type With Prior Year Comparisons

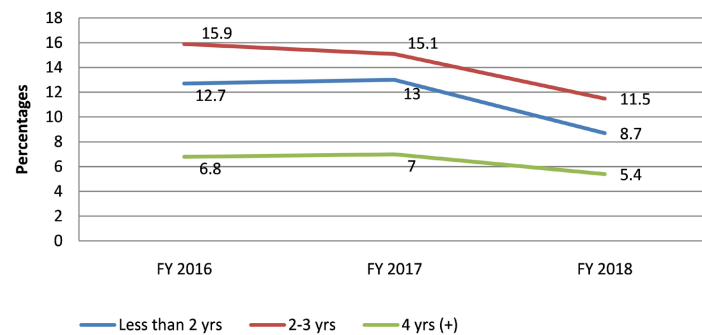


Figure 2. Official 2018 3-year Cohort default rates, public sector, by type with prior year comparisons.

making it challenging to meet loan obligations (Chamberlain, 2019). Campbell and Love (2017) observed that family income, economic hardship, and gender were vulnerable to making enough money.

2.4. Institutional Characteristics and Cohort Default Rates

There are connections to the high student loan defaults to the colleges and universities borrowers attend. Chamberlain (2019) concluded that in the student population characteristics, i.e., Blacks, Hispanic Americans, borrowers whose parents did not complete college, minimum wage earners, independent, low test scores, or grade point averages were more likely to default on their loans. Borrowers who enrolled in community colleges and for-profit schools were more likely to go into loan delinquency than borrowers from other institutions (Chamberlain, 2019). Ishitani and McKittrick (2016) found that lower CDRs were associated significantly with student retention and degree completion practices. McKinney et al. (2021) noted that community college CDRs was lower among college graduates 9% than among non-graduates 27%. Chamberlain explained that relationships exist between loan delinquency and obtaining a degree. Borrowers who earned credentials were less likely to be delinquent on loan obligations than borrowers who completed certifications (Hillman, 2015).

Community College Student Characteristics

In their studies, Mezza and Sommer (2015) discovered that individuals with minimum balances and not completing a degree were signs of loan default. McKinney et al. (2021) found that two-thirds of borrowers who have defaulted owed less than \$5000 on the loan balance and have witnessed considerably less achievement. The ability of loan defaulters to persist and earn credentials reduces the possibility of delinquency. Also, loan defaulters who have dropped out of college face challenges in employment and finances, making it challenging to pay the loan, adding additional interest and penalties (McKinney et al., 2021). They concluded that borrowers in community colleges taking developmental courses and obtaining loans to pay for the education were more likely to drop out of college than non-borrowers taking developmental courses.

2.5. Factors Associated with Student Loan Defaults

The literature revealed that demographic variables affect the default rates among the borrowers. Many researchers had concluded that borrowers' age, gender, ethnicity/race, family income, college GPA, major, degree completion, and attitude contribute to student loan default rates. Lochner and Monge-Narango (2015) concluded that the age of student borrowers significantly influences them to default more so among African Americans than other ethnicities because of their low socioeconomic status. Men, especially older borrowers, were more likely to default on student loans because of low income, which competes with another family's needs (Luna-Torres et al., 2018). Older individuals have more financial obligations than young borrowers (Belfield, 2013; Dynarski, 2016; Woo, 2002); default rates increased by 3% every year after age 21 (Jaquette & Hillman, 2015; Mezza & Sommer, 2015; Flint, 1997). Not all studies agreed that age contributes to default rates. Blagg (2018) argued that instead of age, low academic achievement and low GPA attainment were significant factors as borrowers drop out to complete course degrees.

2.5.1. Ethnicity/Race

Studies have shown that student loan repayment and default rates among ethnicities/races correspond to differences between loan borrowing and debt burden. Black/African Americans accumulate more significant loan debt and had higher default rates than White borrowers (Addo et al., 2016; Scott-Clayton & Li, 2016). Hispanic/Latino borrowers had higher default rates than White borrowers (Hillman, 2015; Lochner & Monge-Naranjo, 2015). Hillman (2015) concluded that Black/African American and Hispanic/Latino borrowers were 9% more likely to default on student loans than White borrowers after controlling for demographic, academic, financial aid, graduation, and employment characteristics.

In differentiating borrowers' ethnic/racial backgrounds, Volkwein et al. (1998) used regression analysis to compare patterns of predictors of loan default and concluded that there was no substantial difference among the ethnic/racial groups. Still, the influence was more significant among minorities. Volkwein et al. noted that while borrowers' inability to complete a bachelor's degree relates to loan default among all racial/ethnic groups, non-completion increased the probability that White borrowers would default by 8%. Minority borrowers would default by 18.2%. Dynarski (2016, 2018) explained that the relationship between race and ethnicity and the likelihood of student loan default was real regardless of whether the student attended a 2-year or 4-year institution. McKinney et al. (2021) agreed that single female borrowers who received a Pell Grant and were full-time students were more likely to be delinquent than non-borrowers.

2.5.2. Age

Age was a factor in loan default. Borrowers who were over age 21 when entering repayment were at risk (Inge, 2017; Podgursky et al., 2002). Flint (1997) concluded that with every additional increase in borrowers' age over 21, probability

of default increases by 3%. [Herr and Bert \(2005\)](#) concluded that adult borrowers have many responsibilities competing with their meager income. [Woo \(2002\)](#) noted that the older the borrowers were, the more likely they were to default on their loans. [Harrast \(2004\)](#) explained that the age of borrowers adds \$312 to the total debt, and the chance of defaulting increases on the aggregate amount owed. The foregoing studies viewed age as a factor in loan default. The findings suggested that older borrowers have limited resources to compete with their ability to meet financial obligations.

2.5.3. College GPA

Academic achievement is associated with student loan default rates. Studies from ([Barone et al., 2005](#); [Canche, 2020](#); [Castonguay, 2019](#); [Flint, 1997](#); [Herr & Burt, 2005](#); [Lochner & Manje-Naranjo, 2015](#); [Odle et al., 2021](#); [Perna et al., 2017](#); [Steiner & Barone, 2014](#); [Volkwein & Szelest, 1995](#); [Woo, 2002](#)) have found the relationship between GPA and repayment of student loans. [Volkwein & Szelest \(1995\)](#) concluded that an increase in borrowers' GPA created a probability of borrowers' default to decrease by 5% (p. 59). [Nyahende \(2013\)](#) also found that borrowers with a higher GPA tended to default less than borrowers with a lower GPA. [Millian et al. \(2021\)](#) noted that test scores, ACT, or GPA negatively correlated with loan delinquency.

2.5.4. College Completion/Transfer

Not completing a degree or earning a credential was associated with student loan default rates. Borrowers who dropped out of college before earning a degree or certificate were likely to default on their loans ([Barone et al., 2005](#); [Campbell & Hillman, 2015](#); [Hillman, 2015](#); [McKinney et al., 2014](#); [McKinney et al., 2021](#); [Steiner & Barone, 2014](#)). [Barone et al. \(2005\)](#) investigated 5177 student loan recipients from a 4-year institution and found that borrowers who completed exit counseling were 9% less likely to default on student loans than borrowers who did not complete counseling sessions. Similarly, [Steiner and Barone \(2014\)](#) investigated 4621 student loan borrowers from a community college. They found that borrowers with lower first-semester GPA, higher Pell Grant amounts, enrolled in developmental education classes and males were at higher risks of student loan default. Establishing early intervention strategies for this group of students during the first semester would be vital to avoiding high CDR ([Steiner & Barone, 2014](#)).

[Chen and Simone \(2016\)](#) found that more than two-thirds of community college students must take at least one remedial education class. The students who took developmental courses were more likely to drop out of college before completing the degree ([Bailey & Smith, 2016](#)). Students who took developmental courses obtained federal student loans at comparable rates compared to college-ready students ([McKinney et al., 2016](#); [McKinney et al., 2021](#)). Understanding how community college students transferred to other institutions after the borrower entered repayment remained the community colleges' responsibil-

ity and they became accountable for default outcomes related to the default rates (U.S. Department of Education, 2019). Analyzing the role of transferred status would provide an additional explanation in managing CDR.

2.6. Institution Characteristics

Researchers (Dillon & Smiles, 2010; Goodell, 2016; Hillman, 2015; Ishitani & McKitrict, 2016) have explored institutional characteristics such as college attended, enrollment, cost, expenditures, and accreditation. The results of their studies concluded that institutions with a more significant proportion of Pell Grant recipients, minority borrowers, males, and older students experienced high student loan defaults. Ishitani and McKitrict (2016) investigated CDRs of 479 4-year postsecondary institutions and found that the total institution population did not affect student loan defaults, but students' composition significantly impacted the CDRs. African Americans and Native Americans had high default rates in community colleges, proprietary schools, and four-year institutions (Ishitani & McKitrict, 2016). These findings suggested that the institutions' default rates differed significantly by race and ethnicity. They might also indicate that student loan defaulters whose characteristics were GPA, completion, and degree achievements did not differ in the institution attended.

2.6.1. Cost and Expenditure

The relationship between the cost of college attendance and expenditure and student loan default rates had no connection or marginal decrease as cost increased (Goodell, 2016; Ishitani & McKitrict, 2016). However, studies suggested that institutions that allocated resources in instructional expenses significantly impacted CDR (Dillon & Smiles, 2010; Galloway & Swail, 1999; Hillman, 2015). Galloway and Swail (1999) investigated CDRs at 80 HBCUs. The authors found that for an additional 1% increase in the proportion of institutions' budgets earmarked for instructional expenses, the CDR decreased 1/3 of a percent (p. 9). Galloway and Swail concluded that struggling institutions could reduce CDRs by increasing instructional budgets. Dillon and Smiles (2010) also investigated HBCUs and noted that as higher per-student expenditures increased, CDRs decreased.

2.6.2. Accrediting Body

A review of the literature showed few studies on the role of accrediting agencies on student loan defaults. However, Hillman (2015) investigated 4,448 2-year and 4-year colleges and universities and observed systematic patterns among accrediting agencies and CDRs. Institutions accredited for vocational programs had a greater risk of sanctions as default rates were significantly greater than or equal to 30%. As a result they lost their eligibility to provide federal loan funds and Pell Grants for three consecutive years.

2.7. Institution Performance

Institutions' performances have been used as accountability metrics to under-

stand CDRs as good performances in graduation rates that would translate to repayment outcomes. Many researchers primarily measured institutional accomplishments in graduation rates related to repayment (Belfield, 2013; Goodell, 2016; Hillman, 2015). Hillman (2015) explained that with a 1% increase in institutions' IPED graduation rates, the possibility of CDR's increasing more than the 30% threshold decreased significantly.

Region

A few studies examined the regional and macroeconomic measures to identify relationships associated with CDRs and found that area was related to CDR in terms of geography and government budget appropriations (Ishitani & McKitrick, 2016). Ishitani and McKitrick (2016) observed that in areas where macroeconomic instability existed (i.e., poverty, the high unemployment rate in the region), the institutions that were located there tended to have minimal higher default rates than institutions situated in suburban neighborhoods. Montalto et al. (2019) agreed to observe borrowers taking up higher employment levels during the school year to meet the rising cost of living, and reduced debt, which contributed to borrowers' drop out rates (Baker et al., 2017).

2.8. Synthesis of the Research

The synthesis of research on CDRs showed studies that examined student loan defaults' characteristics and explained general student variables associated with loan repayment. The studies investigated: a) age b) attitude c) college major d) family size e) GPA f) gender g) graduation h) income i) race and ethnicity j) region, and k) unemployment (Baker et al., 2017; Charles et al., 2016; Elliot & Rauscher, 2018; Flint, 1997; Hordosy et al., 2018; Ishitani & McKitrick, 2016; McKinney et al., 2021; Montalto et al., 2019; Odle et al., 2021; Podgursky et al., 2002; Stoddard et al., 2018; Volkwein & Szelest, 1995; Volkwein et al., 1998; Webber & Rogers, 2014; Woo, 2002). Factors identified in some institutional studies as reasons for default had also been determined not significantly in other more extensive studies (Harrast, 2004; Podgursky et al., 2002). While there was general agreement in most students' demographics that constituted student loan default, disagreement existed in some limited studies related to precollege borrowers, including age, family background, gender, and income.

2.9. Factors of Precollege Loan Borrowers

The factors associated with the precollege loan borrowers referred to investigated characteristics borrowers brought to college (Barone et al., 2005). The characteristics included high school graduation; class rank; and ACT/SAT scores (Podgursky et al., 2002; Woo, 2002). Gender; age; race/ethnicity; family background; high school class rank/achievement; and income (Akers & Chingos, 2016; Baum, 2016; Flint, 1997; Podgursky et al., 2002; Scott-Clayton & Li, 2016; Volkwein et al., 1998; Volkwein & Szelest, 1995), and had no institutional effect on the borrowers.

Knapp and Seaks (1992) observed that family income was associated with loan default. An additional increase of \$1,000 in income created a decreased risk by 2%, and a \$10,000 increase in income reduced the likelihood of default by 5%. However, Flint (1997) explained that borrowers with discretionary income who could repay loans refused to do so. Woo (2002) noted that borrowers with limited economic resources did not default on loans, which indicated that financial status was not a reliable indicator of repayment.

Gender

Luna-Torres et al. (2018) noted that gender had a significant impact on borrowers to default. Women were less likely to default by 36% than their male counterparts. The author explained that male borrowers increased the chance of being delinquent on loan obligations by 5.8% (Luna-Torres et al., 2018). The findings were consistent with other researchers (Castonguay, 2019; Lochner & Monge-Naranjo, 2015; McKinney et al., 2021).

2.10. Cohort Default Rates Prevention and Management

Higher education institutions must establish default prevention and management plans to reduce student loan defaults if the CDRs exceed 30% in a FY (U.S. Department of Education, 2019). The Student Loan Default Prevention Act of 1990 required higher education institutions participating in the federal loan program for the first time or institutions with high default rates to submit a default prevention plan to the ED. The 1990 Default Prevention Act demanded that higher institutions must: a) conduct entrance and exit counseling for borrowers; b) maintain accurate enrollment and a satisfactory academic policy; c) provide financial literacy programs to identify at-risk borrowers; d) perform an institutional review of cohort default data provided by the ED, and e) hire competent personnel assigned explicitly for default prevention (U.S. Department of Education, 2019). Institutions that failed to manage CDRs would face sanctions and loss of eligibility to participate and administer Title IV funds, including student loans and Pell Grants (U.S. Department of Education, 2019).

2.11. Summary

Researchers examined the problem with CDR's through several lenses in the literature, including individual-level factors, i.e., preadmission, college, and post-college, and found an association between student characteristics and CDR. The above factors were linked with institutional-level, allowing institutions to be more selective on degree attainment than default rates. Institutions with adequate resources were more demanding, and a higher degree attainment rate produced borrowers less likely to default. The majority of the research concentrated on 4-year and for-profit institution borrowers. I examined institution-level factors (college size and location, percentage of loans and Pell Grants, and first-year retention and graduation rates) at public 2-year community colleges in Michigan to

better understand which factors contributed to institutions' high CDRs. The goal was to ascertain what variable the institution should manage to reduce the institutions' CDRs when viewed through the student-institution fit model (Flint, 1997).

Several areas were deserving of additional examination. With respect to research, the lower default rates for females deserved further study. Researchers found the existence of within-race differences and low-income borrowers in loan repayment patterns; the roles of academic ability and student effort as a repayment predictor needed to be thoroughly investigated. Besides, federal laws did not discriminate on the type of institution. Still, the rising student loan debt of \$1.7 trillion has caused more politicians and congressional leaders to show a growing reaction against a costly and unproductive policy that would address all the problems. I hoped the study would significantly provide a different pattern of default causes among borrowers from a public community college. The study would shed light so policymakers could overlook borrowers' institutions and instead devote attention to loan default behavior and the need to craft policies that would take variable causes into account. Chapter 3 will detail the study's research design and methodology to justify the research plan, describing the variables studied, nature, and relationships, providing the target population, type, and sources of the data collection process.

3. Research Method

The problem addressed in this quantitative correlational study was the high CDRs at public 2-year community colleges in Michigan. The purpose of this quantitative correlational study was to identify variables associated with student loan default among the borrowers who attended public 2-year community colleges in Michigan. This chapter contains an overview of the study's research methodology and design. Saunders et al. (2007) explained that research design was a framework used as a guide in collecting, measuring, and analyzing data. I used a quantitative methodology with a correlational, nonexperimental design to examine student loan default factors. The target population was student loan borrowers who enrolled, entered repayment, defaulted on their loans during the 3-year cohort period (2016-2018), and were included in the Department of Education CDR in 2021. I examined a sample size of 26 public 2-year community colleges during a 3-year period.

I collected secondary data extracted from the NSLDS and IPEDS of the ED. The NSLDS and IPEDS data were compiled using Microsoft Excel software for computation. I analyzed the data using the SPSS, version 27.0 in conducting data analysis and tests. The software's selection was based on its robust capability to perform statistical analysis, logistic regression, and correlation. Logistic regression was appropriate for the study analysis, especially when the dependent variable was dichotomous, as in this case. Logistic regression helped describe data, explaining the relationship between one dependent variable and more independent variables (Creswell & Creswell, 2017).

The research design was quantitative correlational. The goal was to establish relationships without manipulating independent variables. Archived data was obtained from the NSLDS, which collects information from the institutions on borrowers who defaulted. The IPEDS provided institution-level factors (college size and location; percentage of loans and Pell Grants, first-year retention, and graduation rates). This framework was appropriate because (Creswell & Creswell, 2017) explained that using secondary data allowed no manipulated variables and no intervention to occur. For FY 2018, Michigan's public 2-year community colleges had CDRs, ranging from 10.8% to 21.5%, one of the highest in the nation (U.S. Department of Education, 2019).

3.1. Research Methodology and Design

A quantitative correlational design was used for this study to address the RQs: (RQ1) *To what degree are institution-level factors (college size and location) related to the student loan default among the borrowers in public 2-year community colleges?* (RQ2) *To what degree are institution-level factors (i.e., percentage of loans and Pell Grants) related to student loan default among the borrowers in public 2-year community colleges?*, and (RQ3) *To what degree are institution-level performance factors (first-year retention and graduation rates) related to student loan default among the borrowers in public 2-year community colleges?* In quantitative correlational research, efforts are made to describe, infer, and resolve problems using numbers (Sekaran & Bougie, 2016). The emphasis centers on collecting numerical data, summary, and concluding on the gathered data (Sekaran & Bougie, 2016). The data collected measured variables to establish relationships (Creswell, 2014).

3.2. Population and Sample

The population consisted of 26 public 2-year community colleges in Michigan whose cohort the ED published default rates. The study was restricted to a non-random sample of student loan borrowers in public 2-year community colleges in Michigan who entered repayment on federal student loans between October 1, 2016, and September 30, 2018, and were included in the latest ED's official CDRs in 2021.

The target population was student loan borrowers of the federal student loan program in public 2-year community college institutions who entered repayment and defaulted, and were included in the CDRs; calculated and published by the ED, using the institutions' enrollment data for the FYs 2016, 2017, and 2018 (U.S. Department of Education, 2019). The total population sample showed 114,494 students entered repayment and 18,198 students (about the seating capacity of Madison Square Garden) defaulted, with CDRs ranging from 10.8% to 21.5% in the latest FY 2018 (U.S. Department of Education, 2021).

3.3. Instrumentation

I developed spreadsheet information using Microsoft Excel software in the data

compilation and computation, which contained secondary data from the ED: institution-level factors, i.e., college size and location; financial aid awards, i.e., percentage of loans and Pell Grants; and performance outcome, i.e., first-year retention and graduation, and CDRs. The archived data was extracted from the ED using the Institution Office of Post-secondary Education Identification Code (OPEID). I used the SPSS, version 27 to perform data analysis and tests. The selection of this software was based on its robust capability to perform statistical analysis, logistic regression, and correlation.

3.4. Data Analysis

I used archived data from the ED. The NSLDS extracted from the ED contained details that revealed the basis for calculating the CDRs. The NSLDS data for the institution's FY 2018 served as the reference document that identified borrowers in the CDRs. The institution OPEID was used to determine which institutions would be used in this study. The borrowers' social security numbers were not required to extract the borrowers' NSLDS. The IPEDS contains institutions' characteristics and demographic and outcome data. I used the institution's OPEID code to extract the borrowers' data.

Data analysis was the focus of a research study performed by [Sekaran and Bougie \(2016\)](#). The researchers employed a logistic regression model or logit regression, which is a statistical model used to predict the outcome of a dependent variable of one or more independent variables. [Park \(2013\)](#) explained that the logistic regression model analyzes the relationship between multiple independent variables and a categorical dependent variable and approximates the probability of an event's occurrence by fitting data to a logistic curve. The logistic regression model was used to examine the effect of the independent variables. [Volkwein and Szelest \(1995\)](#) explained that the logistic regression model provides a better result in datasets as in this case than ordinary least squares and hierarchical linear model. Since the dependent variable—CDRs was dichotomous—with categorical and continuous independent variable data—the logistic regression model fitted the study to provide a high correlation.

3.5. Assumptions

The study's primary underlying assumption was that the ED's institutional academic and financial aid records, and institutional characteristics data would be accurate. This belief led to internal validity limitations, as there would always be the potential for error. Also, the small sample size of this study would lead to estimation bias and reduction in power ([Creswell & Creswell, 2017](#)), which required caution in the interpretation of factors. The data for this study met the assumption of the statistic.

3.6. Summary

This study explored factors associated with student loan default among the bor-

rowers in public 2-year community colleges in Michigan. This quantitative correlational research study established an association between the variables. Chapter 3 addressed student loan default by employing logistic regression to evaluate the degree of institution-level variables on the threat to student loan default. Chapter 4 will examine of the findings based on the data collected.

4. Findings

The problem addressed in this quantitative correlational study was the high CDRs at 2-year public community colleges in Michigan. The purpose of this quantitative correlational study was to identify variables associated with student loan default in public 2-year community colleges in Michigan. A descriptive correlational, nonexperimental design was employed to examine the relationship between student loan factors to RQs and obtain the purpose of the study. The data collection and analysis procedures, RQs and hypotheses, the study results, and a summary of the research findings are presented in Chapter 4. A discussion of the findings, implications of the findings, recommendations for practice, future research, and the conclusion are presented in Chapter 5.

There are 28 public 2-year community colleges in Michigan. Data were compiled from the NSLDS and the IPEDS. The NSLDS contained the 2018 CDRs for 26 public 2-year community colleges in Michigan. The underlying analyses excluded the four institutions with no default rates. Data on college size, location, federal student loans, Pell Grants, retention, and graduation rates were exported from IPEDS for the affiliated institutions and years. Three institutions were missing data on retention rates, and six institutions were missing data on graduation rates. The missing values were handled pairwise by including all cases that had necessary data for each analysis.

4.1. Validity and Reliability of the Data

Data were compiled from the NSLDS and the IPEDS. The NSLDS contained the 2018 CDRs for 26 public 2-year community colleges in Michigan. The assumptions of multiple linear regressions were tested for each RQ. Normality was tested by examining normal P - P plots of the regression residuals (see [Figure 3](#)), Shapiro-Wilk tests, and skewness and kurtosis values of the regression residuals. There were minor deviations from the normal line (diagonal) of the normal P - P plots, indicating that the residuals were not normally distributed. Additionally, the Shapiro-Wilk tests were significant (all p -value < 0.05), indicating that the distributions of the residuals were significantly different from a normal distribution. [Westfall and Henning \(2013\)](#) suggested that skewness values greater than 2:00 and kurtosis values greater than 3:00 indicated marked deviations from normality. All skewness values were within normal limits (values < 2.00), and all kurtosis values were below 3.00. Homoscedasticity was tested by examining scatterplots of predicted values versus residuals (see [Figure 4](#)) and using White's test ([White, 1980](#)). The data appeared randomly distributed around zero. The

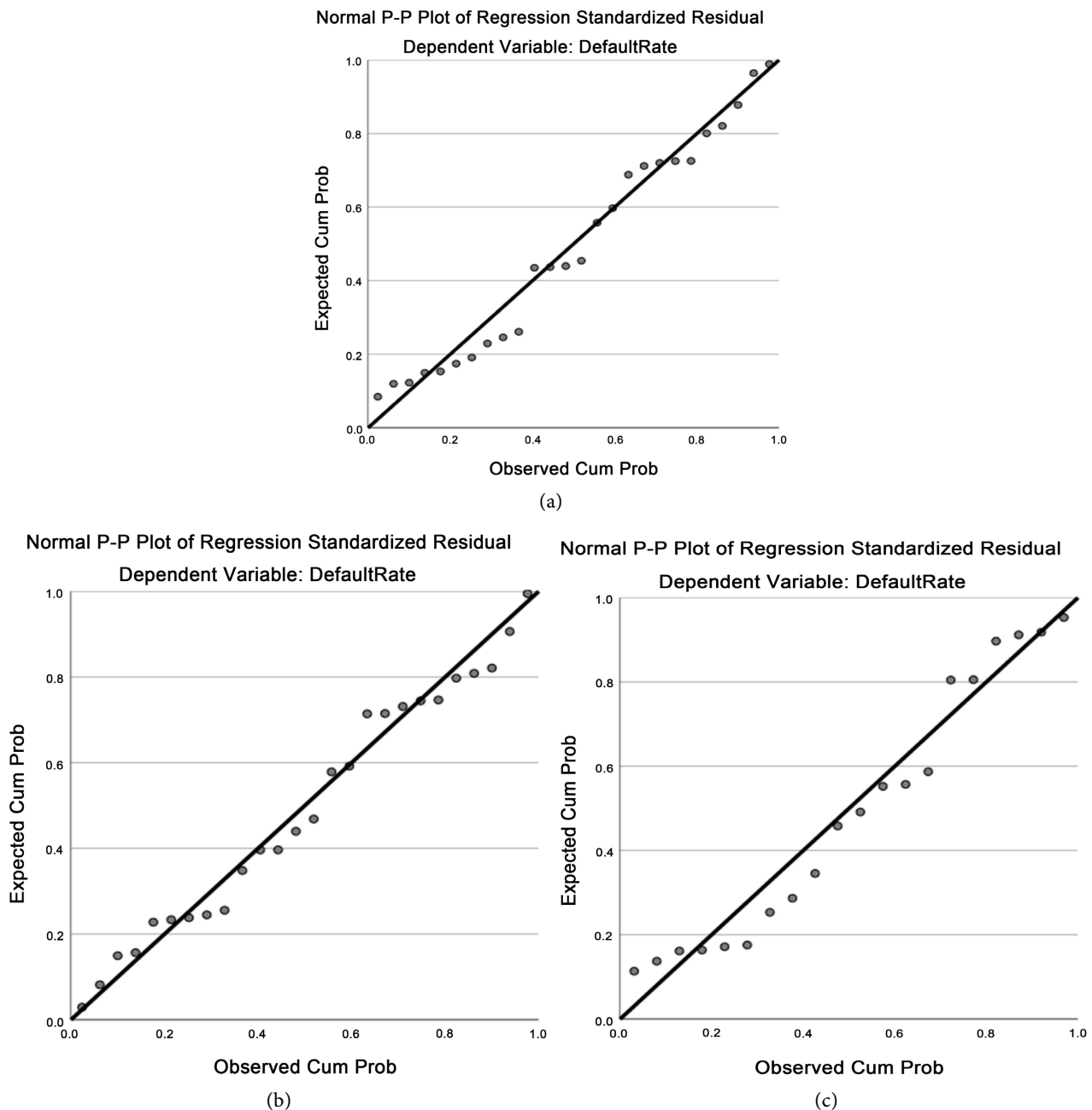


Figure 3. Normal P-P plots of regression residuals.

results of White's tests were not significant (all p -values > 0.05), indicating that the data were homoscedastic.

Finally, computing variance inflation factors tested multicollinearity among the predictors in each analysis. All variance inflation factors were below 10, indicating no severe multicollinearity in the data.

4.2. Results

Descriptive statistics for each of the study variables are presented in **Table 3**. The majority of the institutions were located in metropolitan areas ($n = 22$,

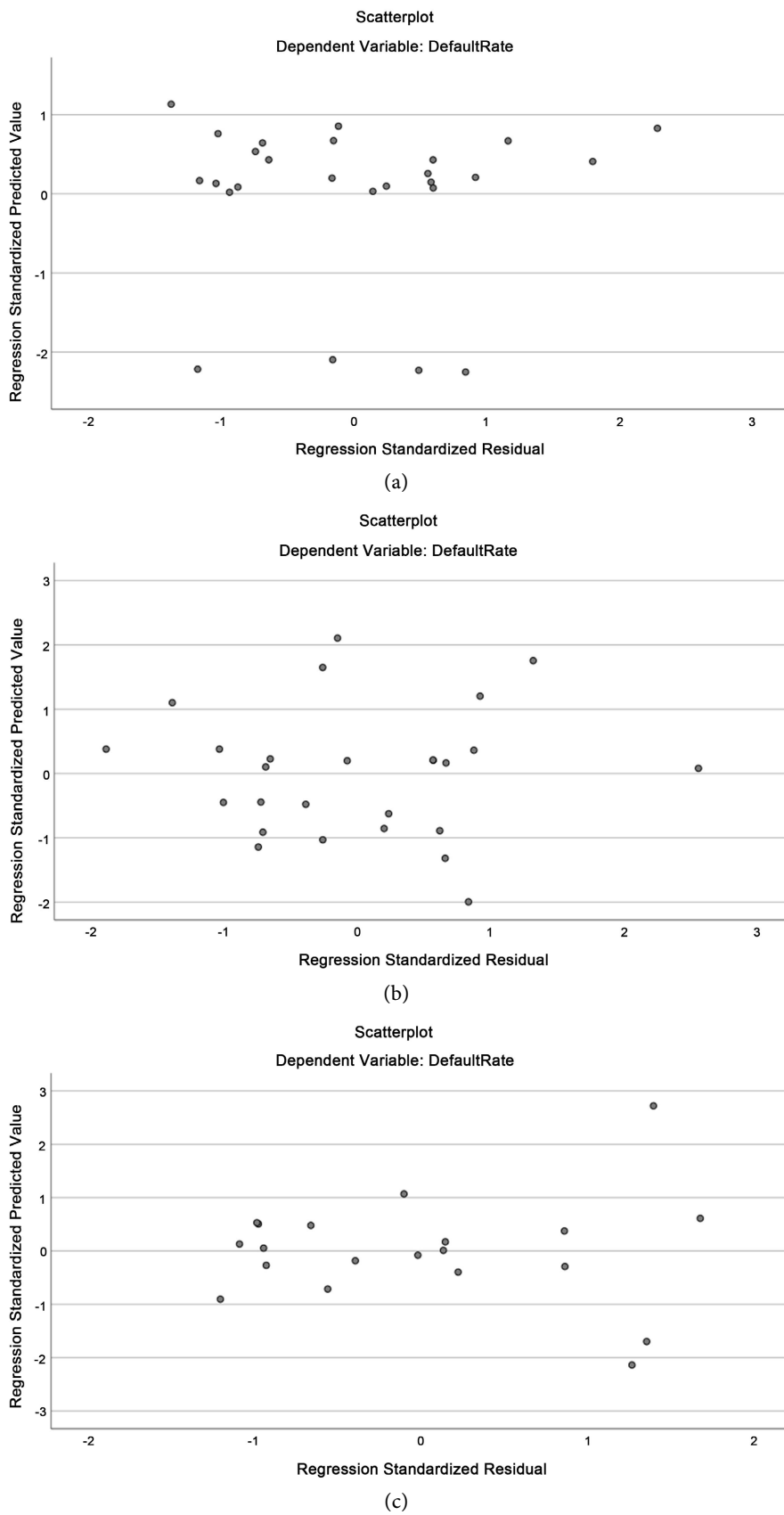


Figure 4. Scatterplots of predicted values and residuals.

84.6%). On average, 19.08% ($SD = 6.40\%$) of the students at these institutions were awarded federal student loans, and 33.77% ($SD = 7.31\%$) were awarded Pell Grants. The average full-time retention rate at these institutions was 62.13% ($SD = 9.95\%$), and the average graduation rate within 200% of normal time was 26.65% ($SD = 7.67\%$).

Research Question 1 stated, *to what degree are institution-level county and region factors (college size and location) related to the student loan default among the borrowers in public 2-year community colleges?* To address this question, a multiple linear regression was performed. The criterion variable in this analysis was the default rate. The predictor variables were college size and location. As described previously, the assumptions of normality, homoscedasticity, and the absence of multicollinearity were tested. The results of these tests showed that the assumptions were met.

The results of the regression were not significant, $F(2, 23) = 0.61$, $p = 0.550$, $R^2 = 0.05$, indicating that college size and location together did not explain a significant proportion of variance in default rate. **Table 4** displays the results for the individual regression coefficients. No individual predictors were significantly related to the default rate. The null hypothesis was not rejected.

Research Question 2 stated, *to what degree are institution-level financial aid award factors (i.e., percentage of loans and Pell Grants) related to the student loan default among the borrowers in public 2-year community colleges?* To address this question, a multiple linear regression was performed. The criterion variable in this analysis was the default rate. The predictor variables were the percentages of students awarded federal student loans and Pell Grants. As described previously, the assumptions of normality, homoscedasticity, and the absence of multicollinearity were tested. The results of these tests showed that the assumptions were met. The results of the regression were not significant, $F(2, 23) = 1.79$, $p = 0.190$, $R^2 = 0.14$, indicating that the percentages of students awarded federal student loans and Pell Grants together did not explain a significant proportion of variance in the default rate. **Table 5** displays the results for the individual regression coefficients. No individual predictors were significantly related to the default rate. The null hypothesis was not rejected.

Research Question 3 stated, *to what degree are institution-level performance factors (first-year retention and graduation rates) related to the student loan default among the borrowers in public 2-year community colleges?* To address this question, a multiple linear regression was performed. The criterion variable in this analysis was the default rate. The predictor variables were retention rate and graduation rate. As described previously, the assumptions of normality, homoscedasticity, and the absence of multicollinearity were tested. The results of these tests showed that the assumptions were met. The results of the regression were not significant, $F(2, 17) = 1.54$, $p = 0.242$, $R^2 = 0.15$, indicating that retention rate and graduation rate together did not explain a significant proportion of variance in the default rate. **Table 6** displays the results for the individual regression

Table 3. Descriptive statistics for study variables.

Variable	<i>N</i>	Minimum	Maximum	<i>M</i>	<i>SD</i>
Default rate	26	10.80	21.50	15.11	2.54
Total number of undergraduates	26	996.00	20220.00	6689.00	5479.75
Percent of undergraduate students awarded federal student loans	26	9.00	31.00	19.08	6.40
Percent of undergraduate students awarded Pell Grants	26	20.00	54.00	33.77	7.31
Full-time retention rate	23	48.00	100.00	62.13	9.95
Graduation rate	20	14.00	43.00	26.65	7.67

Table 4. Multiple-linear regression with college size and location predicting default rate.

Variable	<i>B</i>	Std. Error	Beta	<i>t</i>	Sig.	95% CI		VIF
						Lower	Upper	
College size	0.00	0.00	0.07	0.33	0.748	0.00	0.00	1.16
Location: Micropolitan	-1.30	1.52	-0.19	-0.86	0.399	-4.44	1.83	1.16

Note. Std. Error = standard error; CI = confidence interval; VIF = variance inflation factor.

Table 5. Multiple-Linear regression with student loans and pell grants predicting default rate.

Variable	<i>B</i>	Std. Error	Beta	<i>t</i>	Sig.	95% CI		VIF
						Lower	Upper	
Percent awarded loans	0.07	0.08	0.17	0.86	0.396	-0.10	0.23	1.05
Percent awarded Pell	0.10	0.07	0.29	1.44	0.162	-0.04	0.24	1.05

Note. Std. Error = standard error; CI = confidence interval; VIF = variance inflation factor.

coefficients. No individual predictors were significantly related to the default rate. The null hypothesis was not rejected.

4.3. Evaluation of the Findings

In an attempt to explain the characteristics that might influence default within the institutions, researchers have incorporated a range of institution-level factors related to the student loan defaults:

RQ1

To what degree are institution-level county and region factors (college size and location) related to the student loan default among the borrowers in public

Table 6. Multiple-leader regression with retention rate and graduation rate predicting default rate.

Variable	<i>B</i>	Std. Error	Beta	<i>t</i>	Sig.	95% CI		VIF
						Lower	Upper	
Retention rate	-0.12	0.11	-0.24	-1.08	0.296	-0.36	0.12	1.01
Graduation rate	-0.12	0.08	-0.33	-1.46	0.162	-0.28	0.05	1.01

Note. Std. Error = standard error; CI = confidence interval; VIF = variance inflation factor.

2-year community colleges? The measures for institution size and location (**Table 4**) showed no individual predictors were significantly related to the default rate. The finding is consistent with [Ishitani and McKittrick \(2016\)](#) who found the size of institutions by enrollment was not significantly related to the default rate, using CDRs of 479 of 4-year postsecondary institutions. In other studies that evaluated student-level variables, institutions with the larger student population and a significant number of Pell Grant recipients experienced higher CDRs ([Belfield, 2013](#); [Dillon & Smiles, 2010](#); [Goodell, 2016](#); [Ishitani & McKittrick, 2016](#)). Ishitani and McKittrick also observed that institutions located in towns or rural areas appeared to have slightly higher rates of default when compared to institutions located in suburban areas. The present study found that college size and location were not related to the default rate.

RQ2

To what degree are institution-level financial aid award factors (i.e., percentage of loans and Pell Grants) related to the student loan default among the borrowers in public 2-year community colleges? [McKinney et al. \(2014\)](#) found that borrowers who were pursuing associate degrees in applied science or in an occupational certification were likely to default. [Campbell and Hillman \(2015\)](#) observed that 90% of borrowers who attended a community college institution did not earn a credential, and 60% did not accumulate 15 credit hours. These studies found that institutional spending was not significantly related to borrowers' defaults. The present study (**Table 5**) did not find a significant proportion of institution-level financial aid award factors, i.e., percentage of loans and Pell Grants among the borrowers in public 2-year community colleges.

RQ3

To what degree are institution-level performance factors (i.e., first year retention and graduation rates) related to the student loan default among the borrowers in public 2-year community colleges? As reflected in **Table 6**, the graduation rates obtained from IPEDS showed no individual predictors were significantly related to the default rate. The finding is consistent with ([Inge, 2017](#)) who found retention and graduation rates were not significantly related to student loan defaults in public 2-year community colleges in Kentucky.

4.4. Summary

Data from 26 public 2-year community colleges in Michigan were extracted from

the NSLDS and the IPEDS, and a series of multiple linear regressions were performed to address the RQs. The findings related to RQ1 suggested that college size and location were not significantly related to the default rate; the null hypothesis was not rejected. The findings related to RQ2 suggested that the percentages of students awarded federal student loans and Pell Grants were not significantly related to the default rate; the null hypothesis was not rejected. Finally, the findings related to RQ3 suggested that retention rate and graduation rate were not significantly related to the default rate; the null hypothesis was not rejected.

5. Implications, Recommendations, and Conclusion

The problem addressed in this quantitative correlational study was the high CDRs at public 2-year community colleges in Michigan. The purpose of this quantitative correlational study was to identify variables associated with student loan default in public 2-year community colleges in Michigan. A descriptive, correlational, nonexperimental design was employed to examine the relationship among student loan factors to answer the RQs and achieve the study's purpose. There was a limitation regarding the sample size of 26 public 2-year community colleges, which impacted the study, limiting its generalization. The findings relating to RQ-1 suggested that college size and location were not significantly related to the default rates; the null hypothesis was not rejected. The findings relating to RQ-2 indicated that the percentages of students awarded federal student loans and Pell Grants were not significantly related to the default rates; the null hypothesis was not rejected. The findings relating to RQ-3 suggested that retention rate and graduation rate were not significantly related to the default rates; the null hypothesis was not rejected. Finally, implications of the findings, recommendations for practice, future research, limitations, and conclusions are presented in Chapter 5.

5.1. Implications

Student loan default is at a crossroads as institutions and loan defaulters continue to feel the negative impact of high student loan default rates (Sattelmeyer et al., 2019). For students, 15.7% of student loans held were defaulters who were still in school, making it challenging to continue their education as they lose eligibility for future benefits, including student aid (Pew Research, 2019). A quantitative correlational design was employed to identify variables associated with student loan default among borrowers in public 2-year community colleges in Michigan. The institution-level factors, i.e., college size and location; financial aid awards, i.e., percentage of loan and Pell Grants; and performance outcome, i.e., first-year retention and graduation rates related to the student loan default were examined in the study. The problem at the center of the study was the student loan default rate and how it impacted the public 2-year community colleges in Michigan. A conceptual model (Nyahende, 2013) was used to present the impact of student loan default at the institutions. Nyahende's framework diagram-

matically illustrated how various variables could impact student loan default rates. The categorical diagram demonstrated how the student loan borrowers' age groups, gender, and attitude influenced the student loan default rates in institutions in Tanzania (Nyahende, 2013).

Researchers have examined how various student characteristics and institution-level variables, i.e., location; campus size; composition of the student body; faculty FTE; full-time retention and graduation rates; macroeconomic; and spending patterns had influenced the student loan default rate (Cabrera et al., 1992; Flint, 1997; Nyahende, 2013). The findings from (Cabrera et al., 1992) had suggested a limited impact on the student loan default rate. Overall, the findings of the present study were consistent with previous research that demonstrated no significant effect on student loan default rates (Belfield, 2013; Goodell, 2016; Webber & Rogers, 2014).

The institution-level factors did not substantially predict student loan default among borrowers, even in multi-campus institutions, sometimes defined as “*districts*” as enrollment composition (percentage of students eligible for Pell Grant versus loan) would emerge as a significant factor. However, the results were surprising, as previous studies had found institutions with a larger student population and located in larger towns or counties appeared to have slightly higher default rates (Belfield, 2013; Dillon & Smiles, 2010; Goodell, 2016; Ishitani & McKittrick, 2016). The findings of Ishitani and McKittrick (2016) of CDRs of 479 4-year postsecondary institutions and not community colleges explained the difference between 2-year and 4-year institutions.

5.2. Recommendations for Practice

The findings present a basis for recommendations to institutions to implement policy measures and federal government crafting legislation regarding student loan default rates. The study revealed that many borrowers were low-income students, males, Blacks, and Hispanics, with poor academic grades. The borrowers, especially those at the highest risk that owe less than \$5000 (Inge, 2017; Sattelmeyer et al., 2019), exit college before completing studies, which prevents them from getting good-paying jobs to repay their loans. The investigation uncovered evidence of race and ethnic differences and raised tough questions on how race, ethnicity, and gender impacted and contributed to the student loan defaults. The borrowers' present risk factors for community college administrators to formulate management intervention strategies for at-risk students. Based on the findings of the study, the following six recommendations were offered:

Develop a Financial Aid Education and Outreach Program

The first recommendation for institutions is to develop a financial aid education and outreach program upon student enrollment. The study found that borrowers who owed less than \$5,000 present risk factors for institutions. An economic education course will help borrowers learn how to manage money. Seyedian and Yi (2011) found that financial education management helps students make financial decisions and become fiscal-responsible persons as institutions

design programs meeting the learning needs.

Develop Strong Enrollment Management and Loan Default Reduction Plans

The second recommendation for institutions is to develop strong enrollment management and loan default reduction plans to help students' persistence, retention, and graduation rates. The plans will enable institutions to maintain enrollment standards without losing federal funds that support their existence. Research studies have found that institutions could improve the academic achievement, retention, and graduation rates of borrowers and could create measures that promote good academic performance (Millea et al., 2018; Wilcox 1991). Efforts focused on scholarship, small class sizes, and set monetary management systems that allow accurate financial processes should be good investments for institutions (Millea et al., 2018). Institutions' enrollment system should identify what is best for students and ensure their success while maintaining the overall interests of their goals (Banks & Dohy, 2019; Clayton et al., 2019; Wilkinson et al., 2007).

Develop a Default Prevention Guide

The third recommendation is to develop a default prevention guide mandated for institutions with high CDRs with trained staff to monitor and implement measures upon reviewing annual CDRs published by the ED. A default management plan will provide institutions with necessary activities and tools to promote student and institutions' successes. These will increase retention and graduation and reduce delinquency and default (Price & Tovar, 2014). Charles et al. (2016) concluded that a default prevention plan was effective when institutions participated in it at all levels.

Pay Special Attention to Students Eligible for Pell Grants

The fourth recommendation is for institutions to pay special attention to students eligible for Pell Grants—male, independent, and those in need of developmental classes—to succeed in college-level courses at the highest risks of student loan default. I found from a literature review that economically disadvantaged borrowers had high dropout rates and required developmental courses to achieve (Looney & Yannelis, 2015). As a result, interventions and practices that start upon student enrollment, i.e., career counseling and placement services with the institutions' job networks will reduce the prevalence of student loan default (Sampson et al., 2011; Tudor, 2018). Institutions should create a balance between the communities they serve and their organizational objectives, as it would help in promoting collaboration in student job placements (Barr, 2020).

Policymakers to Review Current Cohort Default Rates

The fifth recommendation is for policymakers to review the current CDR as a benchmark to determine who participates in the federal student aid program. Institutions serving a significantly higher proportion of economically disadvantaged students should consider the institutions' effectiveness and efficiencies in managing retention, graduation, and job placement rates. I found from literature reviews that when students graduate and obtain good-paying jobs, they are less

likely to default on their loans (Lochner & Monge-Naranjo, 2015; Looney & Yanelis, 2015). A retention and graduation rate of 80% and above with job placement would produce positive repayment outcomes (McKinney et al., 2014). An amendment of the CDR policy that considers the differences in institutions based upon the composition of student demographics and ability to pay rather than one approach fits all would provide equitable CDR (Charles, Sheaff, Woods, & Downey, 2016).

Federal Government to Implement Policy That Eliminates Portion of the Debt Owed

The sixth recommendation is for the federal government to have paused payment on student loan interest, repayment, and collection efforts since March 2020, when the coronavirus pandemic impacted the institutions' activities. Many institutions stopped physical campus activities, which resulted in various alternative methods of instruction, but loan repayment and borrowers struggling in default will continue to face the same financial challenges when COVID-19 emergency flexibility ends on August 31, 2022. A policy that eliminates a portion of the debt owed and addresses the individual-level variables impacting the borrowers to default will promote the economy.

5.3. Recommendations for Future Research

The focus of this quantitative correlational study was on student loan default rates at public 2-year community colleges in Michigan. The institution-level variables measured did not provide significant results, including the sizes and locations of the institutions. A good explanation of this could relate to the sample size of the data, as larger samples could have provided higher and more significant results (Creswell, 2014). It was clear from studies performed by other researchers (Inge, 2017; McKinney et al., 2016; Steiner & Barone, 2014) individual-level factors, i.e., being independent, male, Hispanic, Black, low income contributed to student loan default, not the institutions that served the borrowers. Future research that explores patterns of default among borrowers in community colleges after the COVID-19 crises in terms of the federal government policies implemented could result in a recommendation for practice for institutions.

5.4. Conclusion

Community colleges serve more than a considerable proportion of Americans who could not otherwise attend colleges by providing access to fulfill their educational goals. Many of the students enrolled in the institutions look to the federal government to finance their educational expenses by obtaining federally guaranteed student loans. The borrowers who defaulted on the student loans cut across race, gender, and age, with males, Blacks, and Hispanic Americans more likely to default. The data extracted from the IPEDS suggests individual-level factors, i.e., age, gender, ethnicity and, not institution-level variables, significantly affected the student loan default rates. The conceptual framework of student-institution fit provided opportunities to examine the variables of borrowers

to the institutions they attended, as reflected in (Nyahende 2013).

I recommended that community colleges, by design, have the economic interest in enrolling a significant portion of students into colleges and derive substantial revenue develop plans that ensure student retention and completion. I found that borrowers' individual-level characteristics significantly impacted federal student loan borrowers and contributed more to the risks of defaulting on the student loan. Institutions should develop programs that support student loan borrowers achieving career goals so that they do not have to exit the program before graduation. Policymakers should review the present policy of holding institutions accountable for the student loan default rates that pass specific benchmarks to determine whether the institutions followed appropriate steps to mitigate the default rates. Once established, the institution should not be held accountable for the outcome.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

References

- Addo, F. R., Houle, J. N., & Simon, D. (2016). Young, Black, and Still in the Red: Parental Wealth, Race, and Student Loan Debt. *Race and Social Problems*, 8, 64-76. <https://doi.org/10.1007/s12552-016-9162-0>
- Akers, B., & Chingos, M. (2016). *The Game of Loans: The Rhetoric and Reality of Student Debt*. Princeton University Press. <https://doi.org/10.1515/9781400883271>
- Anderson, T. (2017). *More than 1.1 Million Borrowers Defaulted on Their Federal Student Loans Last Year*. CNBC. <https://www.cnbc.com/2017/03/14/more-than-11-million-borrowers-defaulted-on-their-federal-student-loans-last-year.html>
- Bailey, T., & Smith, J. S. (2016). *When College Students Start Behind*. The Century Foundation.
- Baker, A. R., Andrews, B. D., & McDaniel, A. (2017). The Impact of Student Loans on College Access, Completion, and Returns. *Sociology Compass*, 11, e12480. <https://doi.org/10.1111/soc4.12480>
- Banks, T., & Dohy, J. (2019). Mitigating Barriers to Persistence: A Review of Efforts to Improve Retention and Graduation Rates for Student of Color in Higher Education. *Higher Education Studies*, 9, 118-131. <https://doi.org/10.5539/hes.v9n1p118>
- Barone, S., Steiner, M., & Teszler, N. (2005). *Multivariate Analysis of Student Loan Defaulters at Texas A&M University*. Texas Guaranteed Research and Analytical Services.
- Barr, J. (2020). *The Impact of Organizational Structure at Multi-Campus Community Colleges on Student Access, Equity, and Completion*. Doctoral Dissertation, University of Maryland University College.
- Baum, S. (2016). Trends in Student Aid 2016. In *Trends in Higher Education Series*. <https://research.collegeboard.org/media/pdf/trends-student-aid-2016-full-report.pdf>
- Belfield, C. R. (2013). Student Loans and Repayment Rates: The Role of For-Profit Colleges. *Research in Higher Education*, 54, 1-29. <https://doi.org/10.1007/s11162-012-9268-1>

- Bipartisan Policy Center (2021). *Income-Driven Plans*. U.S. Department of Education Office of Federal Student Aid. <https://bipartisanpolicy.org/>
- Blagg, K. (2018). *Underwater on Student Loan Debt: Understanding Consumer Credit and Student Loan Default*. Research Report, Urban Institute. https://www.urban.org/sites/default/files/publication/98884/underwater_on_student_debt_0.pdf
- Bryman, A., & Bell, E. (2015). *Business Research Method* (4th ed.). Oxford University Press.
- Cabrera, A. F., Nora, A., & Castañeda, M. B. (1992). The Role of Finances in the Persistence Process: A Structural Model. *Research in Higher Education*, 33, 571-593. <https://doi.org/10.1007/BF00973759>
- Callender, C., & Mason, G. (2017). Does Student Loan Debt Deter Higher Education Participation? New Evidence from England. *The Annals of the American Academy of Political and Social Science*, 671, 20-48. <https://doi.org/10.1177/0002716217696041>
- Campbell, C., & Hillman, N. H. (2015). *A Closer Look at the Trillion: Borrowing, Repayment, and Default at Iowa's Community Colleges*. Association of Community College Trustees. <https://www.acct.org/product/closer-look-trillion-borrowing-repayment-and-default-iowas-community-colleges-2015>
- Campbell, C., & Love, L. (2017). *Lost in the Trillion: A Three-State Comparison of Community College Borrowing and Default*. The Association of Community College Trustees.
- Canche, M. S. G. (2020). Community College Students Who Attained a 4-Year Degree Accrued Lower Student Loan Debt than 4-Year Entrants over 2 Decades: Is a 10 Percent Debt Accumulation Reduction Worth the Added "Risk"? If So, for Whom? *Research in Higher Education*, 61, 871-915. <https://doi.org/10.1007/s11162-019-09565-9>
- Castonguay, A. (2019). *An Economic Analysis of Student Loan Default*. Master's Dissertation, University of Maine. <https://digitalcommons.library.umaine.edu/etd/2965/#:~:text=https%3A//digitalcommons.library.umaine.edu/etd/2965>
- Chamberlain, L. (2019). *Student Loan Default Prevention and Management Practices at Mississippi Community College and Junior Colleges*. Doctoral Dissertations, University of Southern Mississippi. <https://aquila.usm.edu/dissertations>
- Charles, K. D., Sheaff, S., Woods, J., & Downey, L. (2016). Decreasing Your Student Loan Cohort Default Rate: Leading a College-Wide Change Initiative at Mohave Community College. *Community College Journal of Research and Practice*, 40, 597-606. <https://doi.org/10.1080/10668926.2015.1125814>
- Chen, X., & Simone, S. (2016). *Remedial Course-Taking at U.S. Public 2 and 4-Year Institutions: Scope, Experiences, and Outcomes*. National Center for Education Statistics. <https://nces.ed.gov/pubs2016/2016405.pdf>
- Chrisman, D. E. (2015). Multiple Realities: Characteristics of Loan Defaulters at a Two-Year Public Institution. *Community College Review*, 27, 16-32. <https://doi.org/10.1177/009155210002700402>
- Clayton, K., Wessel, R. D., McAtee, J., & Knight, W. E. (2019). KEY Careers: Increasing Retention and Graduation Rates with Career Interventions. *Journal of Career Development*, 46, 435-439. <https://doi.org/10.1177/0894845318763972>
- Congressional Research Service (2020). *The Higher Education Act (HEA): A Primer*. <https://sgp.fas.org/crs/misc/R43351.pdf>
- Creswell, J. W. (2014). *Research Design: Quantitative, Qualitative, and Mixed Methods Ap-*

proaches. Sage.

- Creswell, J. W., & Creswell, J. D. (2017). *Qualitative Methods. Research Design: Qualitative, Quantitative, and Mixed Methods Approach*. Sage.
- Dillon, E., & Smiles, R. V. (2010). *Lowering Student Loan Default Rates: What One Consortium of Historically Black Institutions Did to Succeed*. Education Sector Reports.
- Dynarski, S. (2016). *The Trouble with Student Loans? Low Earnings, Not High Debt*. Brookings Institution.
<https://www.brookings.edu/research/the-trouble-with-student-loans-low-earnings-not-high-debt>
- Dynarski, S. (2018). *Susan Dynarski Testifies on Student Loans before U.S. Senate HELP Committee*.
<https://fordschool.umich.edu/news/2018/dynarski-testifies-student-loans-us-senate-help-committee>
- Edmiston, K. D., Brooks, L., & Shepelwich, S. (2013). *Student Loans: Overview and Issues*. Federal Reserve Bank of Kansas City Research Working Paper, 12-05.
<https://doi.org/10.2139/ssrn.2137243>
- Elliott, W., & Rauscher, E. (2018). When Does My Future Begin? Student Debt and Intra-generational Mobility. *Sociology Mind*, 8, 175-201.
<https://doi.org/10.4236/sm.2018.82015>
- Farrugia, P., Petrisor, B. A., Farrokhyar, F., & Bhandari, M. (2010). Practical Tips for Surgical Research: Research Questions, Hypotheses, and Objectives. *Canadian Journal of Surgery*, 53, 278-281.
- Flint, T. A. (1997). Predicting Student Loan Defaults. *The Journal of Higher Education*, 68, 322-354. <https://doi.org/10.1080/00221546.1997.11778986>
- Friedman, Z. (2021). Student Loan Debt Statistics in 2021: A Record \$1.7 Trillion. *Forbes*.
<https://www.forbes.com/sites/zackfriedman/2021/02/20/student-loan-debt-statistics-in-2021-a-record-17-trillion/?sh=170df9fd1431>
- Galloway, F. J., & Swail, W. S. (1999). *Institutional Retention Strategies at Historically Black Colleges and Universities and Their Effects on Cohort Default Rates: 1997-1995. Monograph Series*.
- Ganem, N. M., & Manasse, M. (2011). The Relationship between Scholarships and Student Success: An Art and Design Case Study. *Education Research International*, 2011, Article ID: 743120. <https://doi.org/10.1155/2011/743120>
- Goodell, J. W. (2016). Do For-Profit Universities Induce Bad Student Loans? *The Quarterly Review of Economics and Finance*, 61, 173-184.
<https://doi.org/10.1016/j.qref.2016.02.003>
- Gross, J. P. K., Cekie, O., Hossler, D., & Hillman, N. (2009). What Matters in Student Loan Default? A Review of the Research Literature. *Journal of Student Financial Aid*, 39, 19-29. <https://doi.org/10.55504/0884-9153.1032>
- Harrast, S. A. (2004). Undergraduate Borrowing: A Study of Debtor Students and Their Ability to Retire Undergraduate Loans. *Journal of Student Financial Aid*, 34, 21-37.
<https://doi.org/10.55504/0884-9153.1081>
- Head, B. A. (2019). *Understanding Community College Student Perception of Success beyond Traditional Measures of Persistence and Degree Attainment*. The University of Alabama.
http://gateway.proquest.com/openurl?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation&res_dat=xri:pqm&rft_dat=xri:pqdiss:13809265
- Hepworth, D., Littlepage, B., & Hancock, K. (2018). Factors Influencing University Student Academic Success. *Educational Research Quarterly*, 42, 45-61.

- Herr, E., & Burt, L. (2005). Predicting Student Loan Default for the University of Texas at Austin. *Journal of Student Financial Aid*, 36, 34-52.
<https://doi.org/10.55504/0884-9153.1072>
- Hillman, N. W. (2015). Cohort Default Rates: Predicting the Probability of Federal Sanctions. *Educational Policy*, 29, 559-582. <https://doi.org/10.1177/0895904813510772>
- Hinton-Smith, T. (2016). Negotiating the Risk of Debt-Financed Higher Education: The Experience of Lone Parent Student. *British Educational Research Journal*, 42, 207-222.
<https://doi.org/10.1002/berj.3201>
- Hordosy, R., Clark, T., & Vickers, D. (2018). Lower-Income Students and the Double Deficit of Part-Time Work: Undergraduate Experiences of Finance, Studying and Employability. *Journal of Education and Work*, 31, 353-365.
<https://doi.org/10.1080/13639080.2018.1498068>
- Inge, B. (2017). *Factors Associated with Federal Student Loan Default among Borrowers in a Statewide System of Community and Technical Colleges*. Doctoral Dissertation, University of Louisville.
- Ionescu, A. F., & Ionescu, A. M. (2014). *The Interplay between Student Loans and Credit Card Debt: Implications for Default in the Great Recession*.
<https://www.federalreserve.gov/econres/feds/the-interplay-between-student-loans-and-credit-card-debt-implications-for-default-in-the-great-recession.htm>
<https://doi.org/10.2139/ssrn.2399182>
- Ionescu, F., & Simpson, N. (2016). Default Risk and Private Student Loans: Implications for Higher Education Policies. *Journal of Economic Dynamics & Control*, 64, 119-147.
<https://doi.org/10.1016/j.jedc.2015.12.003>
- Ishitani, T. T., & McKittrick, S. A. (2016). Are Student Loan Default Rates Linked to Institutional Capacity? *Journal of Student Financial Aid*, 46, 17-37.
<https://doi.org/10.55504/0884-9153.1557>
- Jaquette, O., & Hillman, N. W. (2015). Paying for Default: Change over Time in the Share of Federal Financial Aid Sent to Institutions with High Student Loan Default Rates. *Journal of Student Financial Aid*, 45, Article 2.
<https://ir.library.louisville.edu/jsfa/vol45/iss1/2>
<https://doi.org/10.55504/0884-9153.1543>
- Kelchen, R. (2019). Do High Cohort Default Rates Affect Student Living Allowances and Debt Burdens? An Empirical Analysis. *Journal of Student Financial Aid*, 49, Article 3.
<https://ir.library.louisville.edu/jsfa/vol49/iss1/3>
<https://doi.org/10.55504/0884-9153.1648>
- Knapp, L. G., & Seaks, T. G. (1992). An Analysis of the Probability of Default on Federally Guaranteed Student Loans. *The Review of Economics and Statistics*, 74, 404-411.
<https://doi.org/10.2307/2109484>
- Kool, T. G., & Seaks, T. G. (2021). Evaluation of the Macro and Micro Economic Factors Affecting the Financial Energy of Households. *Energies*, 14, Article 3512.
<https://doi.org/10.3390/en14123512>
- Lochner, L. J., & Monge-Naranjo, A. (2015). Default and Repayment among Baccalaureate Degree Earners. In B. Hershbein, & K. M. Hollenbeck (Eds.), *Student Loans and the Dynamics of Debt* (pp. 235-286). W.E. Upjohn Institute for Employment Research.
<https://doi.org/10.17848/9780880994873.ch8>
- Lochner, L., Stinebrickner, T., & Suleymanoglu, U. (2013). *Analysis of the CSLP Student Loan Defaulter Survey and Client Satisfaction Surveys*. University of Western Ontario, CIBC Center for Human Capital and Productivity.
https://economic.uwo.ca/cibc/workingpapers_docs/docs/wp2013/Lochner_Stinebrickner_Suleymanoglu03.pdf

- Looney, A., & Yannelis, C. (2015). A Crisis in Student Loans? How Changes in the Characteristics of Borrowers and in the Institutions They Attended Contributed to Rising Loan Defaults. *Brookings Papers on Economic Activity*, 2, 1-89. <https://doi.org/10.1353/eca.2015.0003>
- Luna-Torres, M., McKinney, L., Horn, C., & Jones, S. (2018). Understanding Loan Use and Debt Burden among Low-Income and Minority Students at a Large Urban Community College. *Journal of Student Financial Aid*, 48, Article 2. <https://doi.org/10.55504/0884-9153.1619>
- McKinney, L., Gross, J. P. K., & Inge, B. (2014). Understanding Federal Loan Borrowing, Repayment, and Default among Community College Students. In *The Annual Meeting of the Association for the Study of Higher Education*.
- McKinney, L., Gross, J. P., Burrige, A., Inge, B., & Williams, A. (2021). Understanding Loan Default among Community College Students. *Community College Review*, 49, 314-342. <https://doi.org/10.1177/00915521211001467>
- McKinney, L., Novak, H., & Hagedorn, L. S. (2016). *Borrowing among Academically Underprepared Students: Facilitating Success or Perpetuating Inequity at the Community College?* Greater Texas Foundation.
- McVicar, B. (2017). *Michigan Student Loan Default Rate on the Rise*. Michigan Live. https://www.mlive.com/news/2017/09/michigans_student_loan_default.html#
- Mezza, A. A., & Sommer, K. (2015). A Trillion-Dollar Question: What Predicts Student Loan Delinquencies? *Finance and Economics Discussions*, 95, 1-47. <https://doi.org/10.17016/feds.2015.098>
- Millea, M., Wills, R., Elder, A., & Molina, D. (2018). What Matters in College Student Success? Determinants of College Retention and Graduation Rates. *Education*, 138, 309-322.
- Millian, R. P., Zarifa, D., & Seward, B. (2021). Paying Back Student Loans: Demographic, Human Capital, and Other Correlates of Defaults and Repayment Difficulty. *Higher Education Quarterly*, 75, 77-97.
- Montalto, C. P., Phillips, E. L., McDaniel, A., & Baker, A. R. (2019). College Student Financial Wellness: Student Loans and Beyond. *Journal of Family & Economic Issues*, 40, 3-21. <https://doi.org/10.1007/s10834-018-9593-4>
- Mueller, H. M., & Yannelis, C. (2019). *Reducing Barriers to Enrollment in Federal Student Loan Repayment Plans: Evidence from the Navient Field Experiment*. <https://cmepg.gmu.edu/wp-content/uploads/2019/08/MuellerYannelis.pdf>
- National Center for Education Statistics (2023). *Your Primary Source for Information on U.S. Colleges, Universities, and Technical and Vocational Institutions*.
- Nyahende, V. R. (2013). The Influence of Students' Loan Borrowers' Characteristics on Default Rate in Tanzania. *Higher Education Studies*, 3, 26-49. <https://doi.org/10.5539/hes.v3n4p26>
- Odle, T. K., Lee, J. C., & Gentile, S. P. (2021). Do Promise Programs Reduce Student Loans? Evidence from Tennessee Promise. *The Journal of Higher Education*, 92, 847-876. <https://doi.org/10.1080/00221546.2021.1888674>
- Park, H. (2013). An Introduction to Logistic Regression: From Basic Concepts to Interpretation with Particular Attention to the Nursing Domain. *Journal of Korean Academy of Nursing*, 43, 154-164. <https://doi.org/10.4040/jkan.2013.43.2.154>
- Perna, L. W., Kvaal, J., & Ruiz, R. (2017). Understanding Student Debt: Implications for Federal Policy and Future Research. *The Annals of the American Academy of Political and Social Sciences*, 671, 270-286. <https://doi.org/10.1177/0002716217704002>
- Pew Research (2019). *Institutional Eligibility for Participation in Title IV Student Finan-*

- cial Aid Programs*. Congressional Research Service, R43159.
<https://crsreports.congress.gov>
- Podgursky, M., Ehlert, M., Monroe, R., Watson, D., & Wittstruck, J. (2002). Student Loan Defaults and Enrollment Persistence. *Journal of Student Financial Aid*, 32, 27-42.
<https://doi.org/10.55504/0884-9153.1184>
- Price, D. V., & Tovar, E. (2014). Student Engagement and Institutional Graduation Rates: Identifying High-Impact Educational Practices for Community Colleges. *Community College Journal of Research and Practice*, 39, 766-782.
<https://doi.org/10.1080/10668926.2012.719481>
- Princeton Review (2021). A Test Used by Most Higher Institutions to Make Admissions Decisions. *The Princeton Review*.
<https://www.princetonreview.com/college/act-information>
- Sampson, J. P., Hooley, T., & Marriot, J. (2011). *Fostering College and Career Readiness: How Career Development Activities in Schools Impact on Graduation Rates and Students' Life Success*. International Center for Guidance Studies.
- Sattelmeyer, S., Denten, B., Spencer, O., Remedios, J., Williams, R., & Willson, C. (2019). *Student Loan System Presents Repayment Challenges. Borrowers at Risk of Default and Delinquency Need Flexibility and Targeted, Timely Support*. Pew Charitable Trusts Report.
<https://www.pewtrusts.org/en/research-and-analysis/reports/2019/11/student-loan-system-presents-repayment-challenges>
- Saunders, M., Lewis, P., & Thornhill, A. (2007). *Research Methods for Business Students* (4th ed.). Prentice-Hall.
- Scott-Clayton, J., & Li, J. (2016). *Black-White Disparity in Student Loan Debt More than Triples after Graduation: Evidence Speaks Reports*. The Brookings Institution.
- Sekaran, U., & Bougie, R. (2016). Quantitative Data Analysis: Hypothesis Testing 300. In *Research Methods for Business: A Skill Building Approach* (7th ed., pp. 300-331). Wiley.
- Syedian, M., & Yi, T. D. (2011). Improving Financial Literacy of College Students: A Cross-Sectional Analysis. *College Student Journal*, 45, 177-189.
- Steiner, M., & Barone, S. (2014). *Detecting Early Signs of Default Risk at Austin Community College*. Texas Guaranteed Research and Analytical Services.
- Stoddard, C., Urban, C., & Schmeiser, M. D. (2018). College Financing Choices and Academic Performance. *Journal of Consumer Affairs*, 52, 540-561.
<https://doi.org/10.1111/joca.12175>
- TICAS (2019). *Driving Down Fault: How to Strengthen the Cohort Default Rate to Further Reduce Federal Student Loan Default Risk*. The Institute for College Access and Success. <https://ticas.org/wp-content/uploads/2019/11/Driving-Down-Default.pdf>
- Tudor, T. R. (2018). Fully Integrating Academic Advising with Career Coaching to Increase Student Retention, Graduation Rates and Future Job Satisfaction: An Industry Approach. *Industry and Higher Education*, 32, 73-79.
<https://doi.org/10.1177/0950422218759928>
- U.S. Department of Education (2016). *Student Loan Delinquency and Default*. U.S. Department of Education Office of Federal Student Loan Aid.
- U.S. Department of Education (2019). *National Student Loan Data System*.
- U.S. Department of Education (2021). *FY2018 Official 3-Year Default Rates*.
- Volkwein, F. J., Szelest, B. P., Cabrera, A. F., & Napierski-Pracl, M. R. (1998). Factors Associated with Student Loan Default among Different Racial and Ethnic Groups. *The*

-
- Journal of Higher Education*, 69, 206-237. <https://doi.org/10.2307/2649206>
- Volkwein, J. F., & Szelest, B. P. (1995). Individual and Campus Characteristics Associated with Student Loan Default. *Research in Higher Education*, 36, 41-72. <https://doi.org/10.1007/BF02207766>
- Webber, K. L., & Rogers, S. L. (2014). Student Loan Default: Do Characteristics of Four-Year Institutions Contribute to the Puzzle? *Journal of Student Financial Aid*, 44, Article 2. <https://doi.org/10.55504/0884-9153.1541>
- Westfall, P. H., & Henning, K. S. S. (2013). *Texts in Statistical Science. Understanding Advanced Statistical Methods*. Taylor & Francis. <https://doi.org/10.1201/b14398>
- White, H. (1980). A Heteroscedasticity-Consistent Covariance Estimator and a Direct Test for Heteroscedasticity. *Econometrica*, 14, 817-838. <https://doi.org/10.2307/1912934>
- Wilcox, L. (1991). Evaluating the Impact of Financial Aid on Student Recruitment and Retention. *New Directions for Institutional Research*, 1991, 47-60. <https://doi.org/10.1002/ir.37019917006>
- Wilkinson, R. B., Taylor, J. S., Peterson, A., & Machado-Taylor, M. D. (2007). *A Practical Guide to Strategic Enrollment Management Planning*. <https://files.eric.ed.gov/fulltext/ED499875.pdf>
- Woo, J. H. (2002). Factors Affecting the Probability of Default: Student Loans in California. *Journal of Student Financial Aid*, 32, 5-23. <https://doi.org/10.55504/0884-9153.1179>