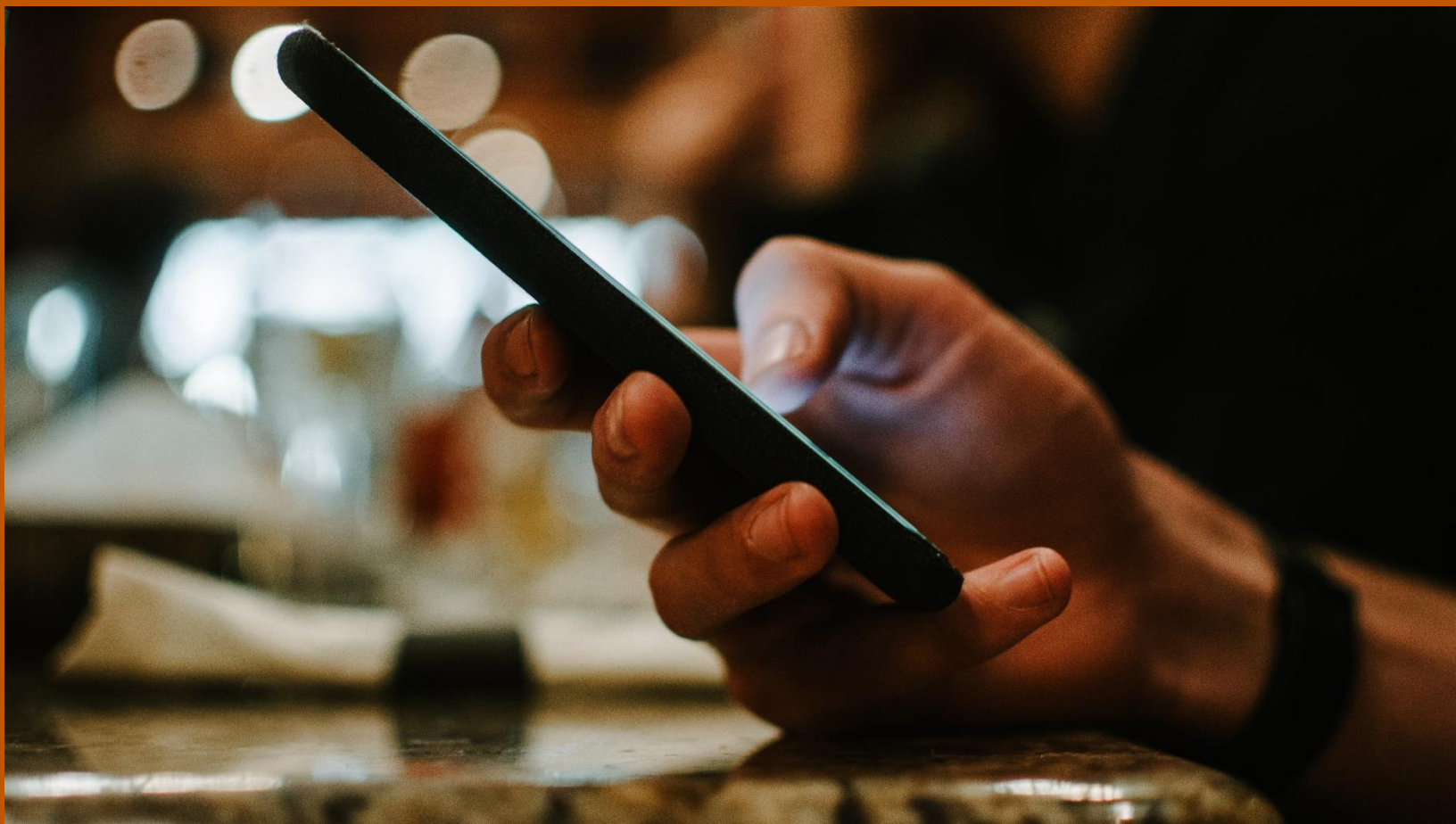


EVALUATION OF AUSTIN COMMUNITY COLLEGE'S STRENGTHENING INSTITUTIONS PROGRAM GRANT

ANNUAL OUTCOMES AND IMPACTS REPORT 2021



RAY MARSHALL CENTER FOR THE STUDY OF HUMAN RESOURCES
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ANNUAL OUTCOMES AND IMPACTS REPORT

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INTRODUCTION

OVERVIEW

Austin Community College (ACC) received a \$1.7 million Strengthening Institutions Program (SIP) grant from the U.S. Department of Education (DOE) in 2015 to develop programs to help students understand smart money management and college financing. The grant, “Achieving Student Success through Financial Aid Education and Financial Literacy,” funded initiatives to teach students about money management and to help the ACC community understand the connection between students’ academic and financial goals. The target population for ACC’s initiatives for the SIP grant was all first-time in college (FTIC) credential-seeking students.

Through this grant, ACC established the Student Money Management Office (SMMO) whose mission is to support Austin Community College student success by providing accessible and relevant money management education, enabling students to make informed financial decisions. SMMO’s activities included text message alerts about financial aid requirements and deadlines, financial literacy workshops for students, professional development for faculty and staff, outreach and awareness campaigns for students, creation of an online presence using various social media platforms, and enhancements to the online Degree Map planning tool to provide personalized real-time financial aid information.

ACC hoped to demonstrate that the activities of SMMO were linked to improvements in measures of student success such as retention rates, credential attainment rates, and cohort loan default rates. ACC partnered with the Ray Marshall Center (RMC), an organized research unit in the LBJ School of Public Affairs at The University of Texas, to perform an impact evaluation of the effectiveness of SMMO’s activities on the student outcome measures of interest, as well as an implementation evaluation.

EVALUATION DESIGN

Outcomes analysis

The ACC SIP grant was expected to lead to several significant and measurable outcomes. The Ray Marshall Center documented and analyzed these outcomes by assembling data on key outcomes over the evaluation period. The goal was to provide actionable information about the success of the intervention while each successive cohort of recipients was in the process of receiving services, allowing for relatively rapid reflection and program modification as needed by ACC staff.

Impact analysis

The impact analysis was designed to address the question: what impact did grant-funded activities have on key student outcomes? The main goal of the impact analysis was attribution – isolating the effect of the grant-funded activities from other factors and potential selection bias. The main challenge of any impact analysis is to determine what would have happened to program participants if the program had not existed (i.e., the counterfactual). While a program’s impact can truly be assessed only by comparing the actual and counterfactual outcomes, the counterfactual is not observed. Without information on the counterfactual, the next best alternative is to compare outcomes of program participants with those of a comparison group of non-participants. Successful impact analyses hinge on finding a good comparison group (Khandker et al., 2010).

The Ray Marshall Center used a quasi-experimental evaluation methodology to estimate the impacts of the ACC SIP grant on key outcomes. A quasi-experimental design was appropriate since the program did not lend itself to a random assignment evaluation. Recent research has demonstrated that, when carried out under the right conditions, quasi-experimental estimation produces impact estimates that are similar in direction and magnitude to those resulting from more expensive and intrusive experimental (random assignment) evaluation methods. Using this methodology, outcomes for the treatment group that received the intervention were compared to the outcomes for the comparison group that did not receive the intervention. Differences in outcomes between the two groups can be understood as the effect of the treatment. The evaluation team also used propensity score matching (PSM) to identify statistically similar matches from the comparison group pool for the treatment group.

REPORT ORGANIZATION

This report examines the outcomes and impacts of grant-funded activities throughout the five-year grant period. The following chapter of the report describes the participants served by the grant and examines participation patterns. The next chapter presents findings from the outcomes analysis, followed by a chapter outlining the impact analysis approach and impact findings. The report concludes with a chapter summarizing key findings and recommendations.

PROGRAM DESCRIPTION

BACKGROUND

Text messaging campaigns were the central component of SMMO's strategy to support student success. Low-cost, technological solutions such as text-based outreach have shown promise for supporting students in overcoming barriers that hinder college enrollment, persistence, and completion (Castleman & Page, 2015; Barr et al., 2016; Castleman & Page 2016; Bird et al., 2017). Castleman & Page found that college-intending high school graduates who were randomly assigned to receive text message reminders about important college and financial aid tasks required for successful matriculation were substantially more likely to enroll in college than students who did not receive the text messages (Castleman & Page, 2015). Castleman & Page also found large positive impacts of a financial aid text message campaign on the continued college persistence of first-year students at community colleges - students who were initially enrolled in a community college and who received the text messages were nearly 12 percentage points more likely to persist into the fall of their sophomore year of college compared to community college freshmen who did not receive the texts (Castleman & Page, 2016). Barr, Bird & Castleman found that a text messaging campaign that prompted loan applicants at a large community college to make informed and active borrowing decisions led students to reduce their unsubsidized loan borrowing (Barr et al., 2016). SMMO adopted best practices from this prior research to implement text messaging interventions using Signal Vine's two-way text messaging platform.

IMPLEMENTATION

2016-17 school year

SMMO began implementing its text messaging intervention with two pilots in the 2016-2017 school year. Students were recruited to participate via presentations made in Area of Study (AOS) sessions. The Area of Study sessions were required of all incoming students with fewer than 12 college-credit hours. In-person sessions were conducted by ACC academic advisors and virtual sessions were available for students unable to come to campus. The AOS information sessions introduced students to advisors and representatives from their area of study who presented an overview of programs and information relevant to the students' chosen area. At the in-person sessions, advisors were asked to give students the opportunity to opt-in to receiving text messages by signing a one-page paper consent form. The consent form collected the students' names, cell phone number, institutional identification number, and

their consent to receive text messages. AOS sessions occurred before registration and could occur as early as July for the following fall semester, resulting in a significant lag time between the time the student consented to receive texts and the time the student received the first text. Some students who attended an AOS session may also have failed to later register.

The first text message sent to each student asked the student to confirm their interest in receiving the text messages. This process eliminated inactive numbers and established the students' continued interest in receiving the messages. In the 2016-2017 school year, students received approximately one text per week throughout the semester. Text messages included reminders about payment deadlines, registration reminders, notices of job fairs, and general tips for managing finances.

2017-18 school year

New incoming students in the 2017-2018 school year were again recruited to participate through the AOS sessions. Students who opted-in received up to 18 messages covering nine topics relevant to financial wellbeing: tuition payment and financial aid deadlines, scholarship opportunities, when class registration opened, ACC's job board, a financial education program platform for tracking student loans, applications for the peer money mentor program, a link to an instructional video on completing the application for financial aid, and workshops on transferring to a four-year college or university.

During the Fall 2017 semester, SMMO implemented A/B testing of messages to determine what message characteristics result in greater student responses. The first A/B test evaluated different times for sending messages and determined that future messages should be sent between 10 a.m. and 8 p.m. The time frame for the Signal Vine system to distribute the text messaging for a large group is four hours and staff discovered that students had no concerns with receiving text messages from school up to 11:30 p.m. SMMO staff also tracked student clicks on web links provided in text messages and found that enhancements such as including the student name, sender name, providing a link to something specific (such as a specific grant rather than a general information site), and adding a picture all received more clicks on the identified link than those that did not include these enhancements.

Additional efforts to gain insight into student preferences regarding text messages from their college included a student survey and in-depth interviews of randomly selected ACC students. The survey presented three variations of each potential text message and asked students to identify the text message style to which they would be most likely to respond. Students were most likely to respond to text messages that included a salutation, such as, "Hey [Name]" and messages that identified the

sender, such as, “It’s Karen from ACC.” Also, the majority of respondents preferred text messages that used formal language instead of text slang and preferred links to information sites over referrals to support services. The in-depth interviews reinforced the findings that students preferred the recipient’s name, sender’s name, and institution to be included in text messages to establish “trustworthiness and familiarity.” Students also preferred the use of an exclamation point to a period at the end of a sentence and expressed annoyance at the use of slang or abbreviations in professional text messages. Most students approved of embedded hyperlinks in text messages (Taylor & Serna, 2020).

2018-19 school year

In Spring 2019, a new ACC Administrative Rule allowed departments interested in sending text messages to students to use the ACC Colleague student information data management system to access student phone numbers to text students without receiving prior written consent. The Rule required that the initial text must include a clear opt-out option and alleviated the demands of seeking paper consent forms. Eliminating the demands of manual data entry, the Rule lowered the risk of error in transcribing phone numbers into the system and eliminated the lag between the time students sign consent forms and when students receive their first texts.

Students who opted-in received a series of messages from February 12 through May 14. A key innovation to this series of text messages was the introduction of a follow-up text sent the day after the initial opt-in text messages were sent. SMMO reported that the follow-up text increased the overall response rate by 40 percent.

2019-20 school year

Recruitment and content remained the same as the 2018-19 year with minor changes following campus closures in Spring 2020 due to COVID-19. All changes were related to students being unable to access on-campus services.

2020-21 school year

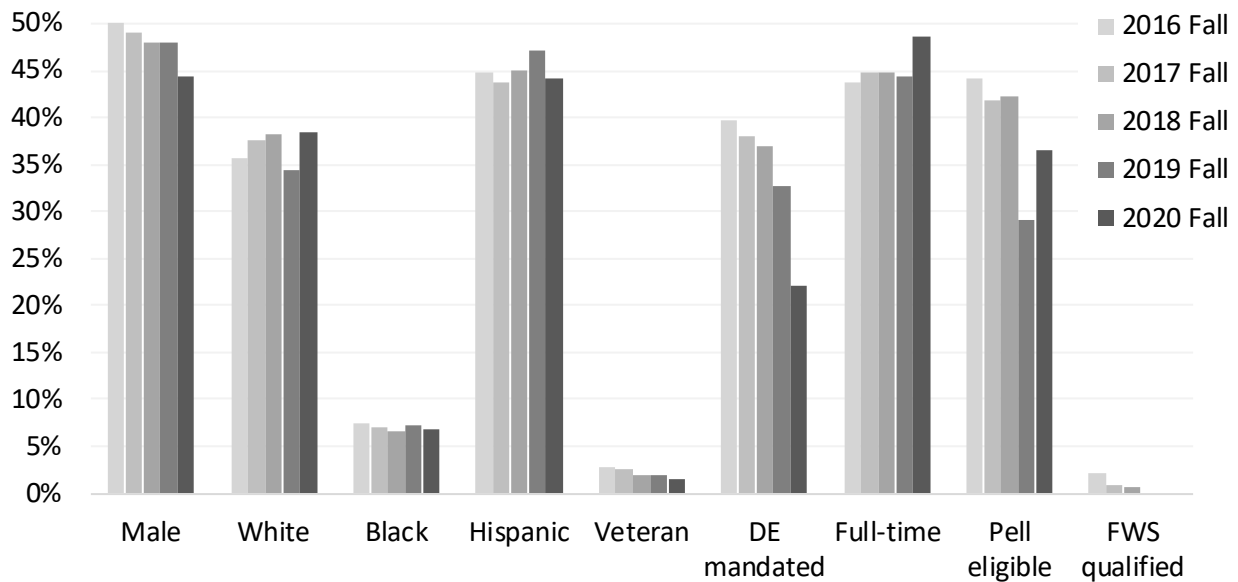
Recruitment processes remained the same as the previous two years. Text message content was modified to include financial assistance notifications such as CARES Act funding and other sources of emergency assistance. Texts also focused on encouraging FASFA completion, reaching out to students who may not be meeting satisfactory academic progress that impact their financial aid, and nudges to complete scholarship applications.

PARTICIPANT CHARACTERISTICS

TARGET POPULATION

Grant implementation began in 2016; thus, the target population comprised of FTIC credential-seeking students who entered ACC in Fall 2016 or later. RMC received data for the Fall 2016, Fall 2017, Fall 2018, Fall 2019, and Fall 2020 cohorts. The demographic characteristics of these cohorts are presented in Figure 1. The target population had about an equal number of males and females. Nearly half of the students were Hispanic, while over a third were White, and less than a tenth were Black. Less than half were attending college full-time. Nearly half were Pell-eligible. More than a third were required to take one or more developmental education classes. Notably, over the grant period, the proportion of students required to take developmental education classes decreased from 40 percent in 2016 to 22 percent in 2020.

Figure 1. Demographic characteristics of the target population



Note: "DE mandated" indicates students required to take developmental education. "FWS qualified" indicates students qualified for Federal Work-Study funds.

The 2020 FTIC cohort enrolled in college during the COVID-19 pandemic, and there are some notable differences in demographics compared to the 2019 cohort. The 2020 FTIC cohort had higher proportions of full-time students, White students, and Pell-eligible students but had lower proportions of male students, Hispanic students, and DE-mandated students.

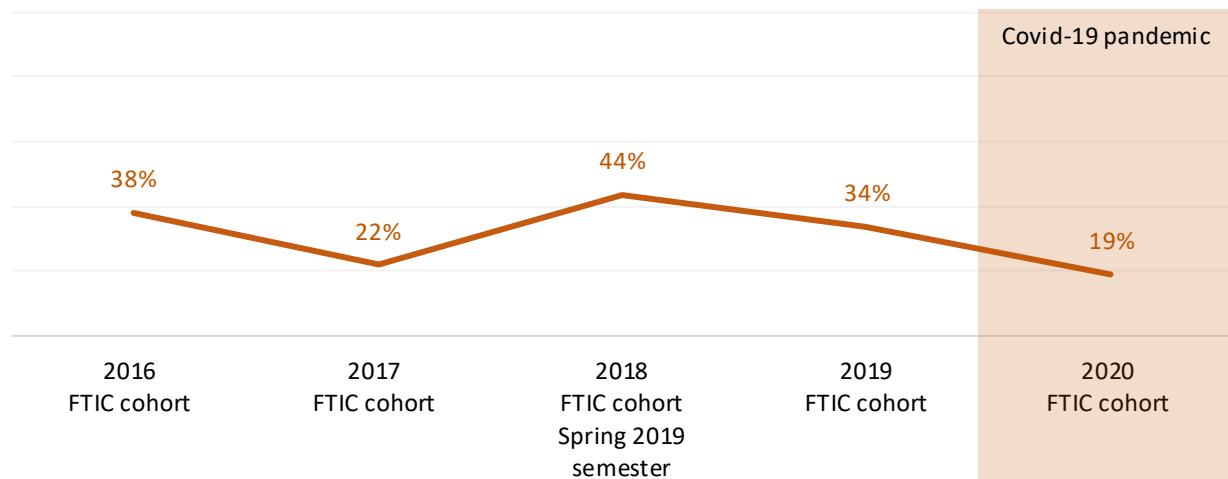
PARTICIPATION PATTERNS

Recruitment

Beginning with the pilot in the Fall 2016 semester and continuing through the Fall 2017 semester, student consent to receive text messages was primarily collected through the area of study sessions. Using these recruitment methods, about a third of students in the 2016 and 2017 FTIC cohorts were contacted by SMMO with text messages (Figure 2).

In Fall 2018, area of study sessions were more frequently offered online. The opportunity to receive text messages from SMMO was still offered to students in the online sessions, but very few students returned consent forms. Because so few sessions were in person, SMMO stopped training advisors on recruiting students to participate. As a result, only 12 percent of the 2018 FTIC cohort were contacted by SMMO with text messages. However, this diminished outreach was not a concern as SMMO was anticipating expanded access to students in the following Spring semester due to the new Administrative Rule.

Figure 2. Proportion of students contacted by SMMO with text messages



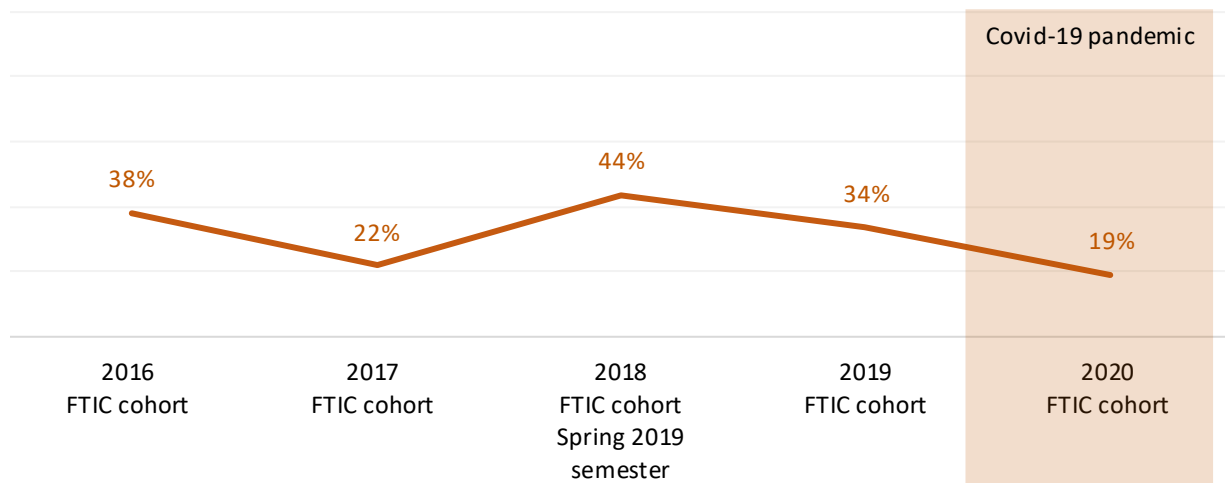
In Spring 2019, the new ACC Administrative Rule was institutionalized that allowed departments interested in sending text messages to use the ACC Colleague student information data management system to access student phone numbers to text students without receiving prior written consent. As a result, SMMO was able to text nearly two-thirds (65 percent) of the 2018 FTIC cohort and invite them to participate in the text messaging intervention in Spring 2019. The following year, 57 percent of the 2019 FTIC cohort were texted by SMMO and invited to participate in Fall 2019. Overall, SMMO doubled the

number of students contacted. However, recruitment dropped slightly in the 2020-21 school year with SMMO contacting a little less than half of the 2020 cohort by text in Fall 2020.

Opt-out rates

In the first year of implementation, opt-out rates were high. Of the 1,768 students in the 2016 cohort who were invited to participate, 38 percent opted out (Figure 3). Reasons for the high opt-out rate included errors in transcribing phone numbers into the Signal Vine as well as the lag between the time students signed consent forms and the time students received their first texts. Over the next year, SMMO implemented multiple strategies aimed at reducing opt-out rates, with some success. Of the 1,624 students in the 2017 cohort who were invited to participate, only 22 percent opted out.

Figure 3. Opt-out rates



Due to the institutionalization of the new ACC Administrative Rule in Spring 2019, SMMO was able to contact students directly without seeking paper consent forms. While this rule had the significant benefit of doubling the number of students that SMMO could contact, the rule also contributed to a higher opt-out rate since students were being essentially “cold-called.” Of the 2,594 students in the 2018 cohort who were invited to participate in Spring 2019, nearly half opted out. SMMO staff reported that since students were not primed to receive the texts, many students questioned the validity of the texting campaign, responding with questions and comments like “If you’re from ACC, tell me where your office is.” Additionally, students may have received texts from multiple ACC organizations because of the Rule change, making it hard to differentiate between those providing a direct benefit (SMMO) and those just providing general guidance and support. These concerns likely impacted the opt-out rate.

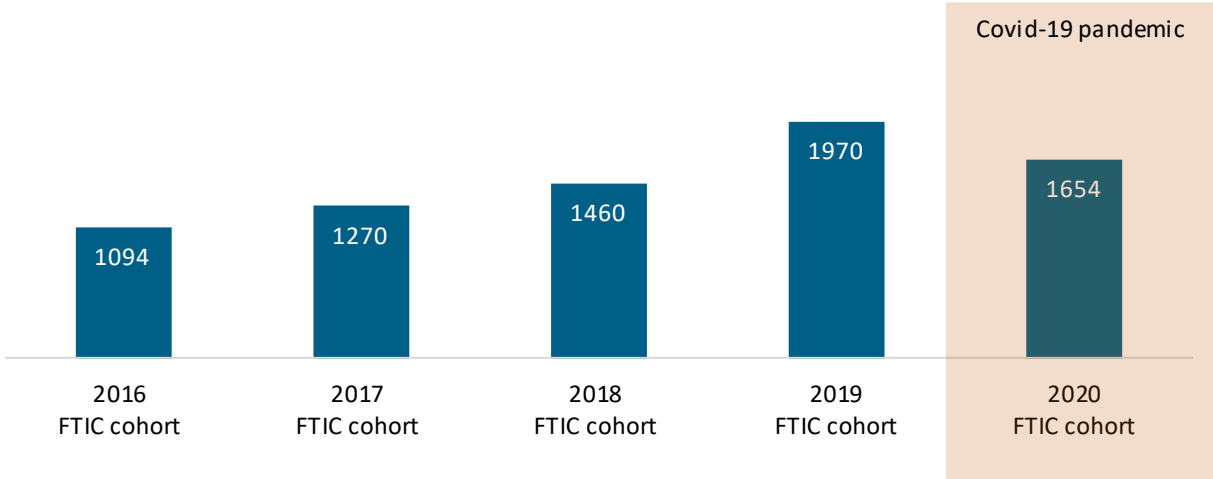
SMMO staff made a small but significant change to their recruitment campaign for the next cohort. SMMO out an email to students on the same day as the initial text; the email alerted the students that they would be receiving a text from SMMO and assured students that the text was legitimate. Notably, the opt-out rate fell significantly - of the 2,972 students in the 2019 cohort who were invited to participate in the Fall 2019 semester, only a third opted out. Opt-out rates improved even further the next year - of the 2,048 students in the 2020 cohort who were invited to participate in the Fall 2020 semester, only a fifth opted out.

In the Spring semesters, SMMO also reached out to students who had received texts in the previous Fall semester and asked them to opt in to receiving texts in the Spring semester. The opt-in rates for the Spring semester were consistently high (ranging from 92 percent to 96 percent), suggesting that students appreciated the texts they received in their Fall semester and were agreeable to receiving texts in the Spring semester.

Program participation

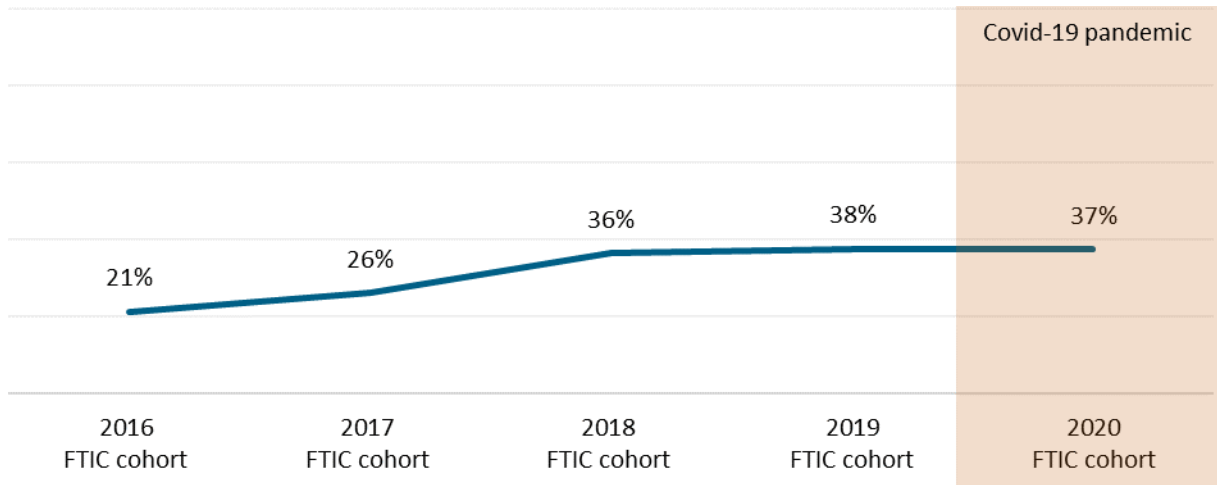
Overall, SMMO has seen a steady increase in the number of FTIC students served by the text messaging intervention (Figure 4). In the first year of the SIP grant, the 2016-2017 school year, SMMO piloted text messaging interventions and served 1,094 FTIC students (21 percent of the 2016 FTIC cohort). Towards the end of the SIP grant, the 2019-2020 school year, SMMO had doubled that number, serving 1,970 students (38 percent of the 2019 cohort).

Figure 4. Number of students served by the SMMO text messaging intervention



In the 2020-21 school year, overall enrollment at ACC dipped, and thus the number of students served by SMMO decreased slightly. However, the proportion of FTIC students served by SMMO stayed steady at nearly 40 percent (Figure 5).

Figure 5. Proportion of students served by the SMMO text messaging intervention



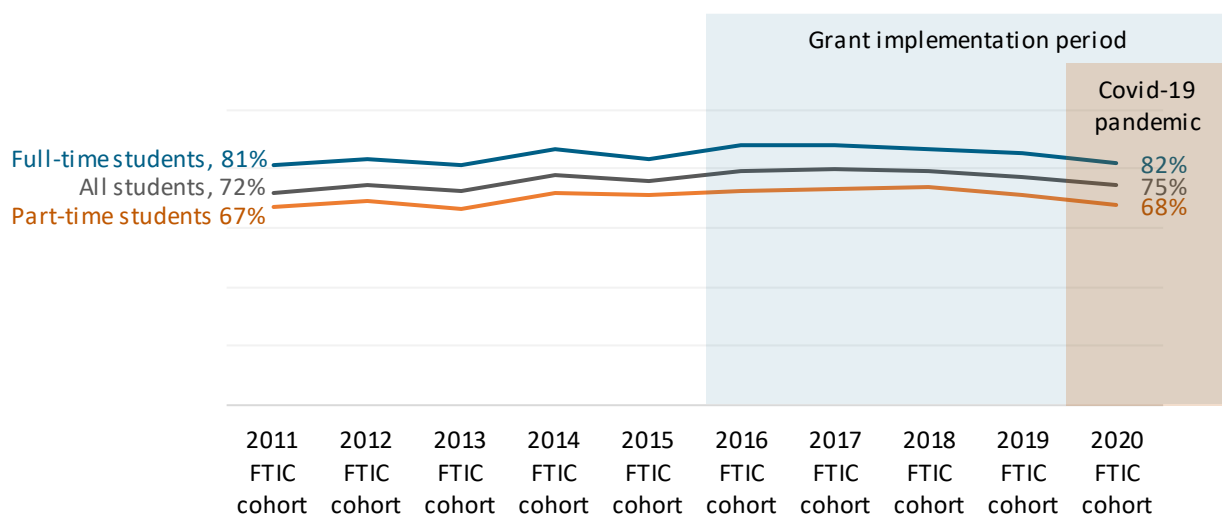
KEY OUTCOMES

Key outcomes for the grant are retention rates, FAFSA refiling rates, and graduation rates. In each section below, we examine the trends in outcomes over the last decade.

FALL-TO-SPRING RETENTION RATES

First-semester (i.e. fall-to-spring) retention rates for FTIC credential seeking students at ACC have steadily increased over the last decade: 79 percent of students who entered ACC in Fall 2018 returned to ACC the following spring, compared to 76 percent of students who entered in Fall 2015 and only 72 percent of students who entered in Fall 2011, a seven percentage point increase over seven years (Figure 6). However, the fall-to-spring retention rates fell for both the 2019 and 2020 cohorts, reflecting the retention challenges of students during the Covid-19 pandemic. Fulltime students consistently had higher fall-to-spring retention rates than part-time students.

Figure 6. Fall-to-spring retention rates

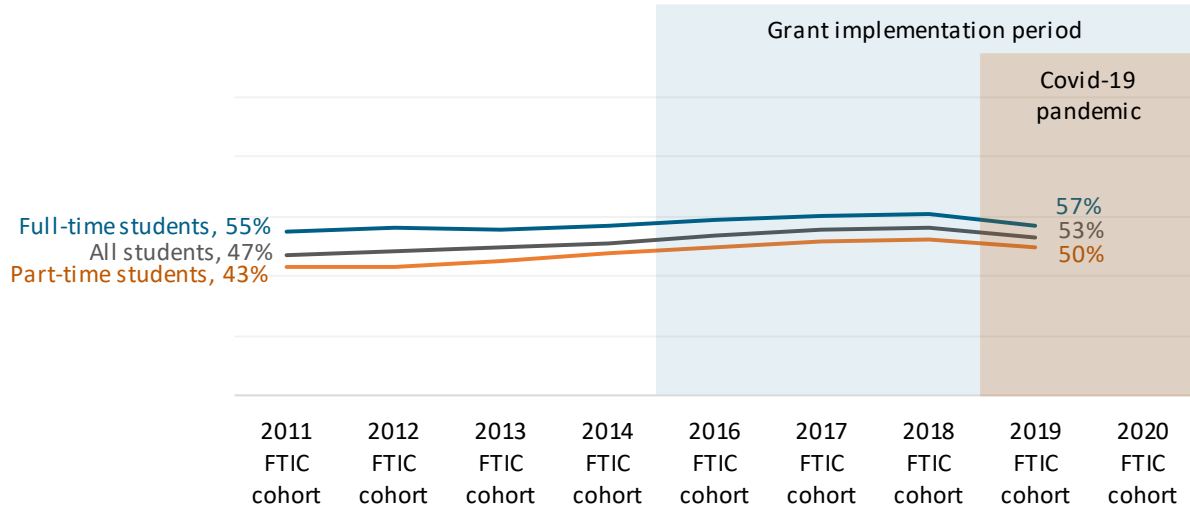


FALL-TO-FALL RETENTION RATES

In the baseline report, we noted that first-year (i.e. fall-to-fall) retention rates for FTIC credential-seeking students at ACC had steadily increased from Fall 2011 to Fall 2014 (Patnaik 2017). We find that this trend had continued for nearly a decade: 56 percent of students who entered ACC in Fall 2018 returned to ACC the following fall, compared to 51 percent of students who entered in Fall 2014 and only 47 percent of students who entered in Fall 2011, a nine percentage point increase over seven years (Figure 7). However, the fall-to-fall retention rates fell for the 2019 cohort, reflecting the retention

challenges of students during the Covid-19 pandemic. Fulltime students consistently had higher fall-to-fall retention rates than part-time students.

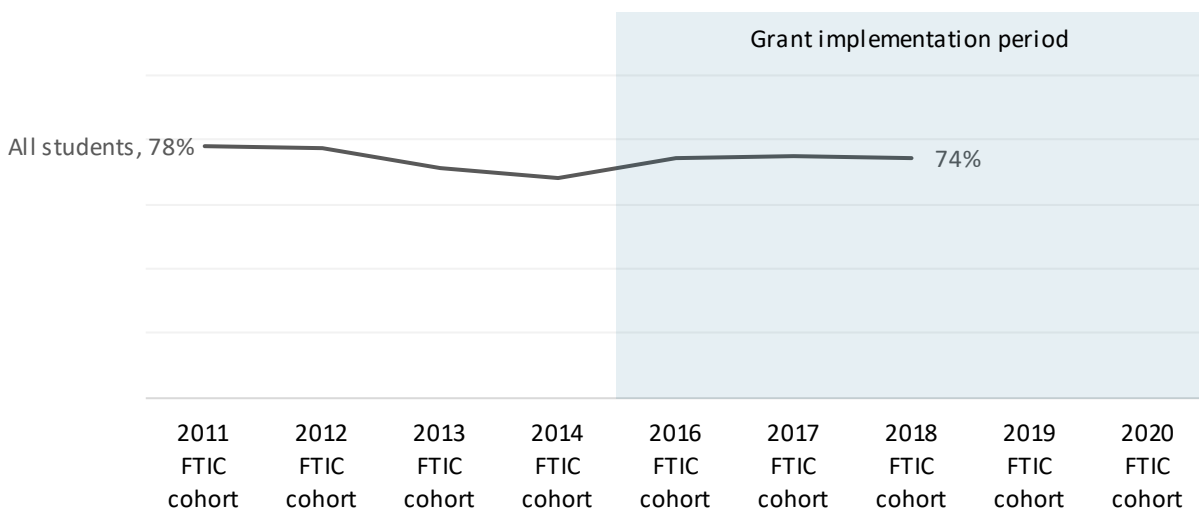
Figure 7. Fall-to-fall retention rates



FAFSA REFILEING RATES

We examined FAFSA refiling rates for all returning sophomores who had filed a FAFSA in their freshman year. At ACC, approximately 1,800 students in each cohort filed a FAFSA in their freshman year and returned to ACC in their sophomore year. FAFSA refiling rates for returning sophomores at ACC have remained fairly steady over the past several years, with about three-quarters of returning sophomores refiling their FAFSA.

Figure 8. FAFSA refiling rates

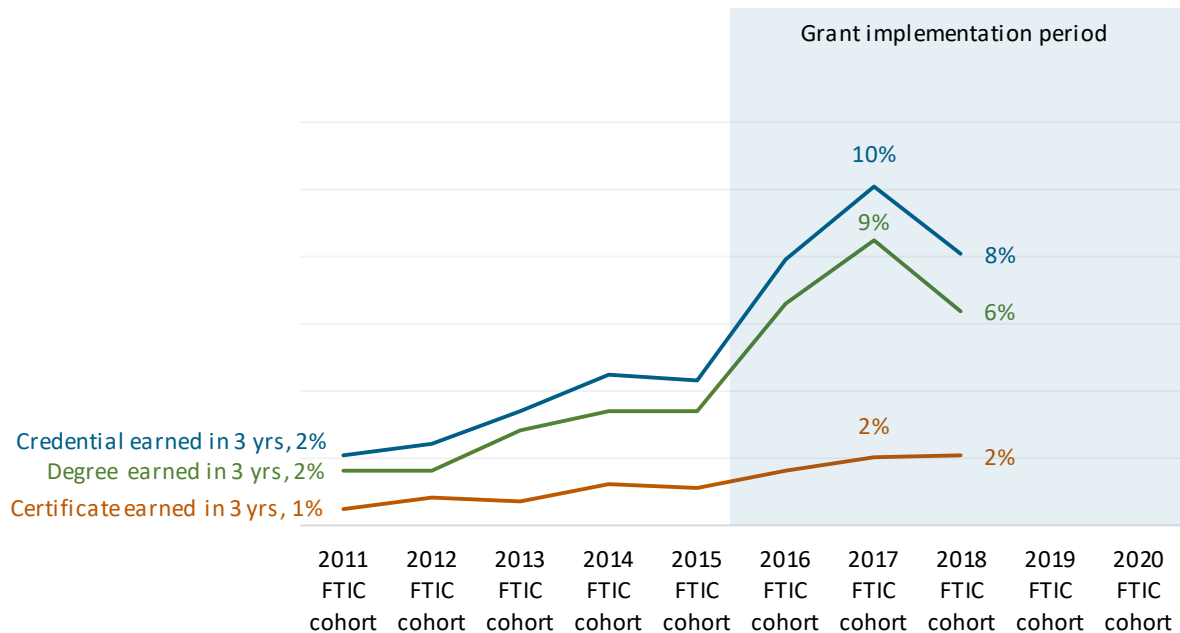


CREDENTIAL ATTAINMENT

In the baseline report, we noted that 3-year credential attainment rates for FTIC credential-seeking students at ACC had steadily increased from Fall 2011 to Fall 2013 (Patnaik 2017). With the inclusion of credential attainment data through the Spring 2021 semester, we find that this trend had continued till the 2017 cohort: 10 percent of students who entered ACC in Fall 2017 had earned a credential within 3 years, compared to 4 percent of students who entered in Fall 2015 and only 2 percent of students who entered in Fall 2011, an eight percentage point increase over six years.

However, 3-year credential attainment rates dipped for the Fall 2018 cohort, likely reflecting the retention and completion challenges of students during the Covid-19 pandemic. The 3-year measurement period for the Fall 2018 cohort included the 2018-19, 2019-20, and 2020-21 academic years. Students in this cohort would have been completing their second academic year as the pandemic began in Spring 2020.

Figure 9. Credential attainment rates for all students



PROGRAM IMPACTS

IMPACT ANALYSIS DESIGN

To estimate the impacts of the text messaging intervention, RMC implemented a **contemporaneous cohort analysis combined with propensity score matching**. Outcomes for the treatment group that received the intervention were compared to the outcomes for a comparison group that did not receive the intervention. Differences in outcomes between the two groups can be understood as the effect of the treatment. The treatment group comprised of FTIC credential-seeking students who entered ACC in the Fall, received texts from SMMO, and opted in to continue receiving texts. The comparison group comprised of FTIC credential-seeking students who entered ACC in Fall and either did not receive texts from SMMO or received texts from SMMO but passively opted out. The evaluation team also used propensity score matching (PSM) to identify matches from the comparison group. Each year’s cohort was analyzed separately since the text messaging intervention and recruitment methods evolved over the years.

Table 1. Intervention and consent characteristics

Cohort	Semester in which students received texts	Method of requesting consent
Fall 2016*	Spring 2017	AOS Info Session
Fall 2017	Fall 2017	AOS Info Session
Fall 2018	Spring 2019	Text via Directory
Fall 2019	Fall 2019	Text via Directory
Fall 2020	Fall 2020	Text via Directory

Due to the lag in data available to us, we were unable to examine some outcomes for the most recent cohort – the FTIC 2020 cohort. We also chose not to examine program impacts for the 2016 cohort as this cohort served as the pilot and several improvements were made to the text messaging intervention for the following cohorts. In interpreting results, several factors need to be considered:

1. The treatment groups in the Fall 2017, Fall 2019, and Fall 2020 cohorts received text messages in their first fall semester; thus, the comparison groups for these cohorts were drawn from students who entered ACC in the Fall 2017, Fall 2019, and Fall 2020 semesters but did not receive texts. The treatment groups in the Fall 2018 cohort received text messages in the Spring 2019 semester; thus,

the comparison group for this cohort was drawn from students who entered ACC in the Fall 2018 semester and returned to ACC in the following spring semesters but did not receive texts.

2. As discussed earlier, the treatment group in the Fall 2017 cohort was recruited at Area of Study Information sessions and students actively opted in to be contacted by SMMO. The treatment groups in Fall 2018, Fall 2019, and Fall 2020 cohorts were recruited by SMMO “cold-calling” students by texting their phone numbers listed in the student directory.

The charts below illustrate impact findings by presenting the average outcomes rates for the treatment and the matched comparison group. Impacts are reported by cohort to reflect the evolution in the text messaging intervention and recruitment methods over the grant period. As the later years of this effort involved cohorts impacted by the Covid-19 pandemic, and these impacts likely differed in context (e.g., at the start of the pandemic or during the midst of the pandemic), measuring impacts by cohort also better reflects the changing and unique influence of the pandemic on local college enrollment and retention.

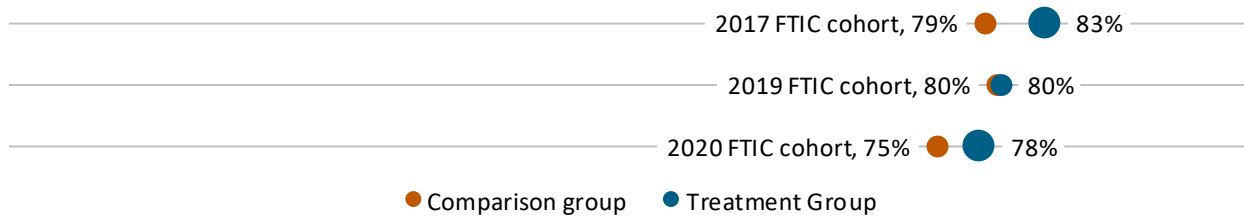
IMPACT FINDINGS

Impacts on fall-to-spring retention

First, we examined program impacts on fall-to-spring retention for the cohorts that received the text messaging interventions in the fall semester (Figure 10). Statistically significant program impacts are noted with a large marker size. PSM models found that the text messaging intervention had a significant positive impact on fall-to-spring retention for the 2017 cohort. Students in the 2017 cohort who received the texts were 5 percentage points more likely to enroll the following spring than students who did not receive the texts. The effect size was small (Cohen’s $d=0.2$).¹ PSM models found no program impact on fall-to-spring retention for the 2019 cohort. Notably, fall-to-spring retention fell for both groups in the 2020 cohort, likely reflecting the retention challenges of students during the Covid-19 pandemic including job security, safety, and childcare. However, the intervention still had a significant positive impact.

¹ Cohen (1988) suggested that $d = 0.2$ be considered a 'small' effect size, 0.5 a 'medium' effect size and 0.8 a 'large' effect size.

Figure 10. Program impact on fall-to-spring retention



Subgroup analyses of the Fall 2017 cohort found that that the text messaging intervention had significant positive impacts on fall-to-spring retention for nearly all subgroups (Figure 11). In contrast, subgroup analyses of the Fall 2019 cohort found that the intervention had no significant impacts on fall-to-spring retention for any of the subgroups (Figure 12). Finally, subgroup analyses of the Fall 2020 cohort found that that the text messaging intervention had significant positive impacts on fall-to-spring retention for only part-time students and Hispanic students (Figure 13).

Figure 11. Program impact on fall-to-spring retention for the Fall 2017 cohort, by subgroups

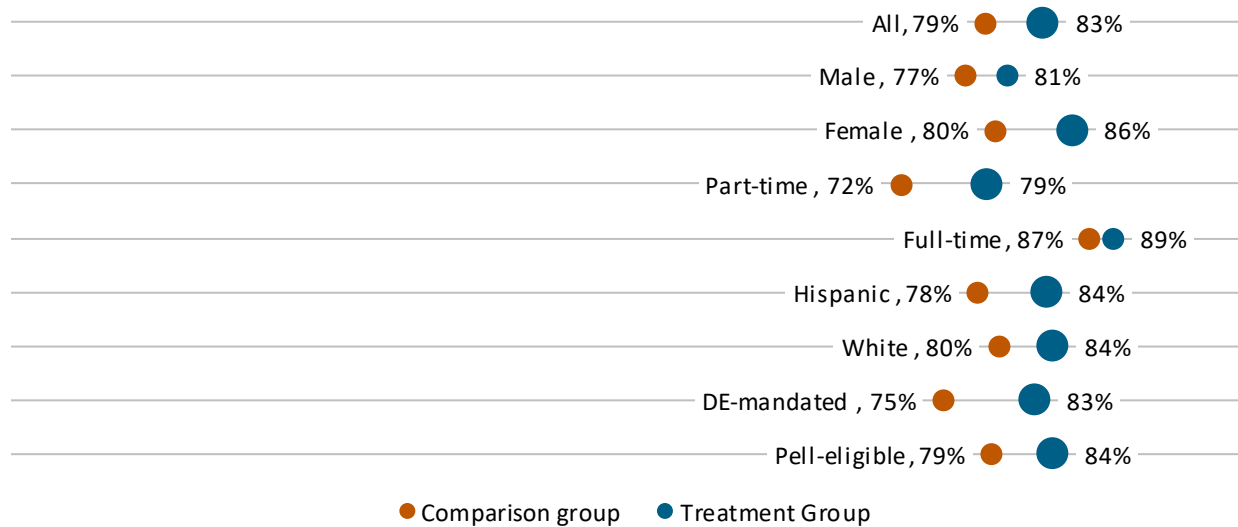


Figure 12. Program impact on fall-to-spring retention for the Fall 2019 cohort, by subgroups

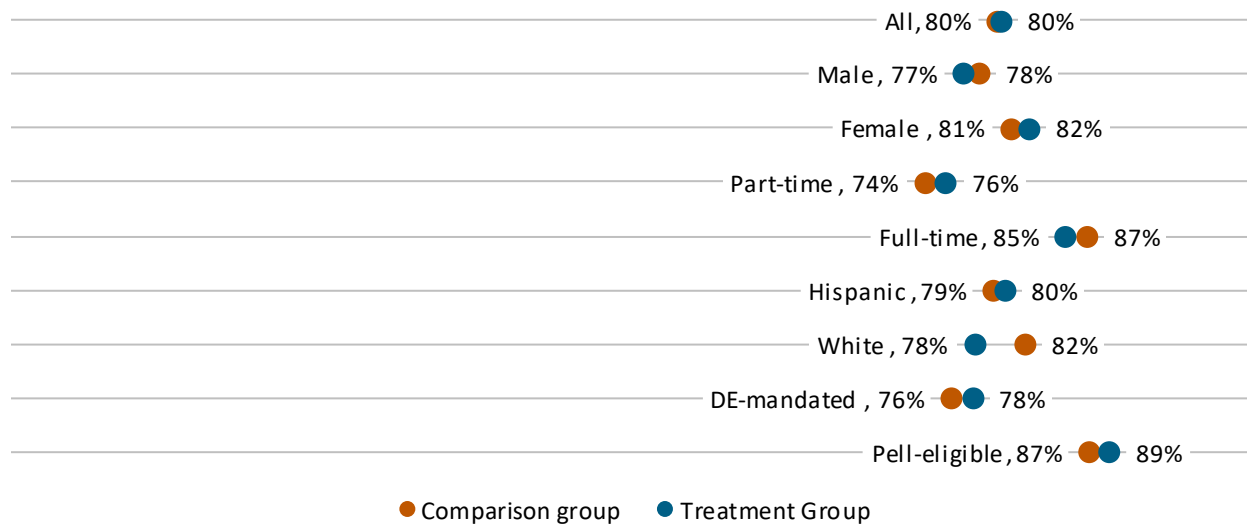
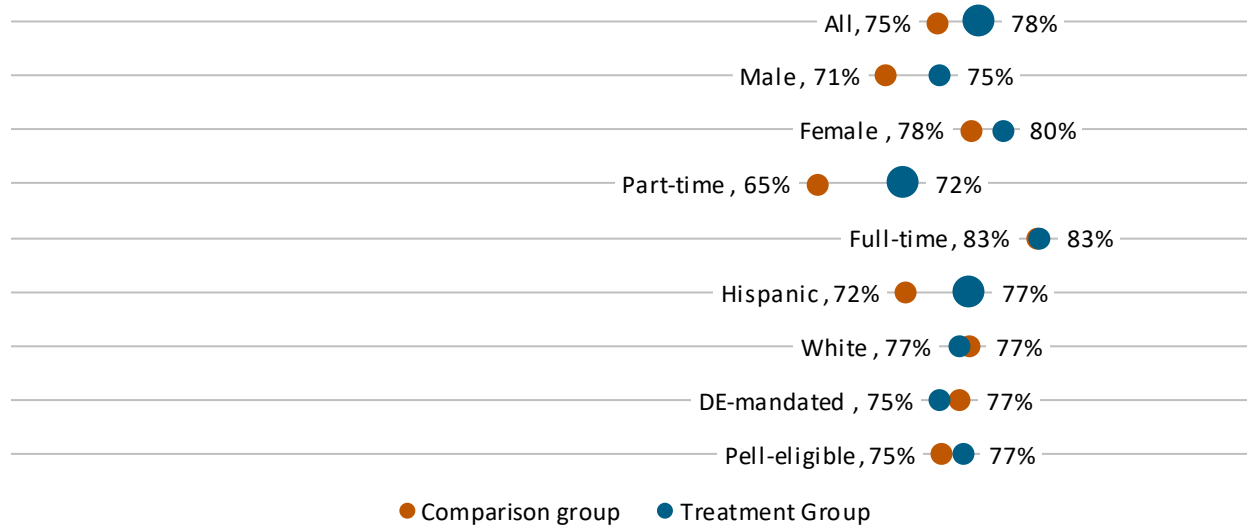


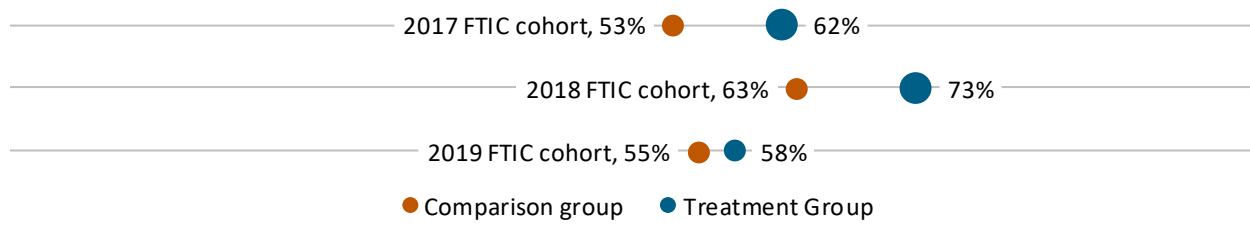
Figure 13. Program impact on fall-to-spring retention for the Fall 2020 cohort, by subgroups



Impacts on fall-to-fall retention

Next, we examined program impacts on fall-to-fall retention (Figure 14). Overall, PSM models found that the text messaging intervention had a significant positive impact on fall-to-fall retention across the early years of program implementation. Students in the 2017 and 2018 cohorts who received the texts were about 10 percentage points more likely to enroll in the fall of their sophomore year than students who did not receive the texts. Fall-to-fall retention fell for both groups in the 2019 cohort, likely reflecting the retention challenges of students during the Covid-19 pandemic. PSM models found no program impact on fall-to-fall retention for the 2019 cohort overall.

Figure 14. Program impact on fall-to-fall retention



Subgroup analysis of the Fall 2017 and Fall 2018 cohorts found that that the text messaging intervention had significant positive impacts on fall-to-fall retention for all subgroups (Figure 15 and Figure 16). Notably, White students in the 2018 cohort who received the texts were about 15 percentage points more likely to enroll in the fall of their sophomore year than students who did not receive the texts.

Figure 15. Program impact on fall-to-fall retention for the Fall 2017 cohort, by subgroups

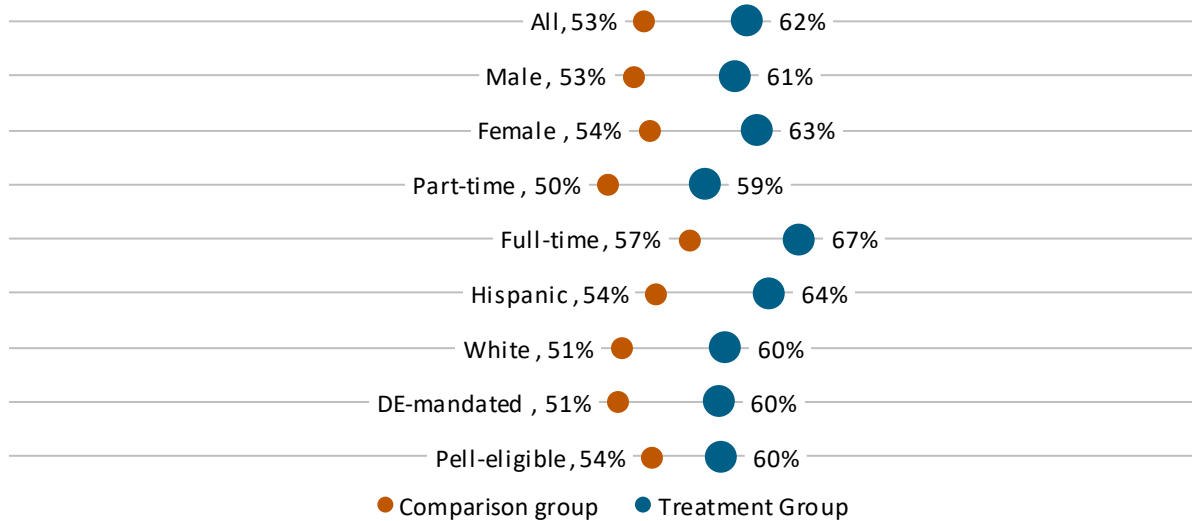
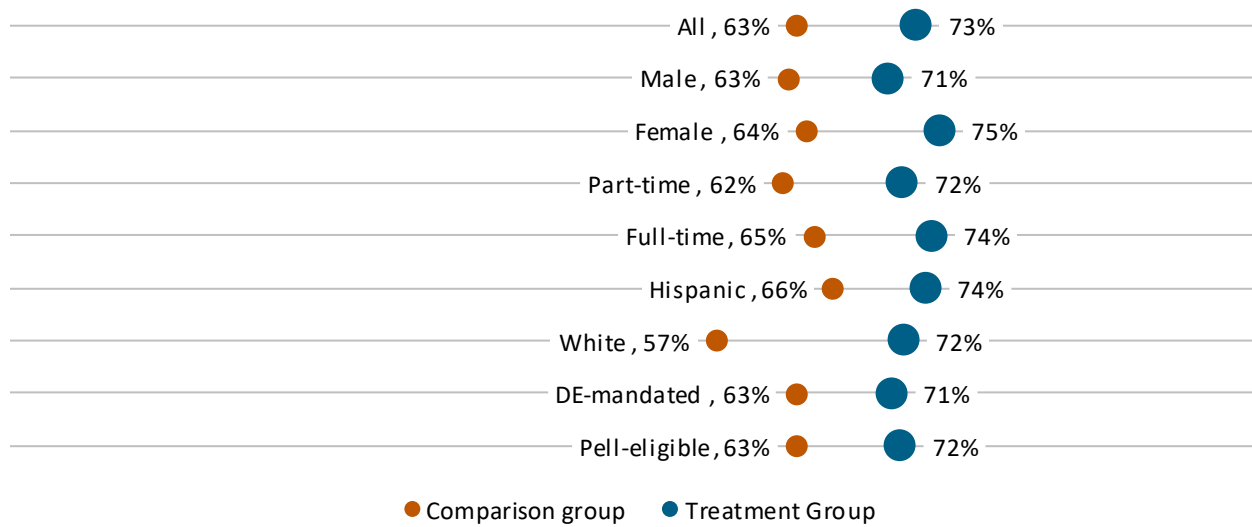
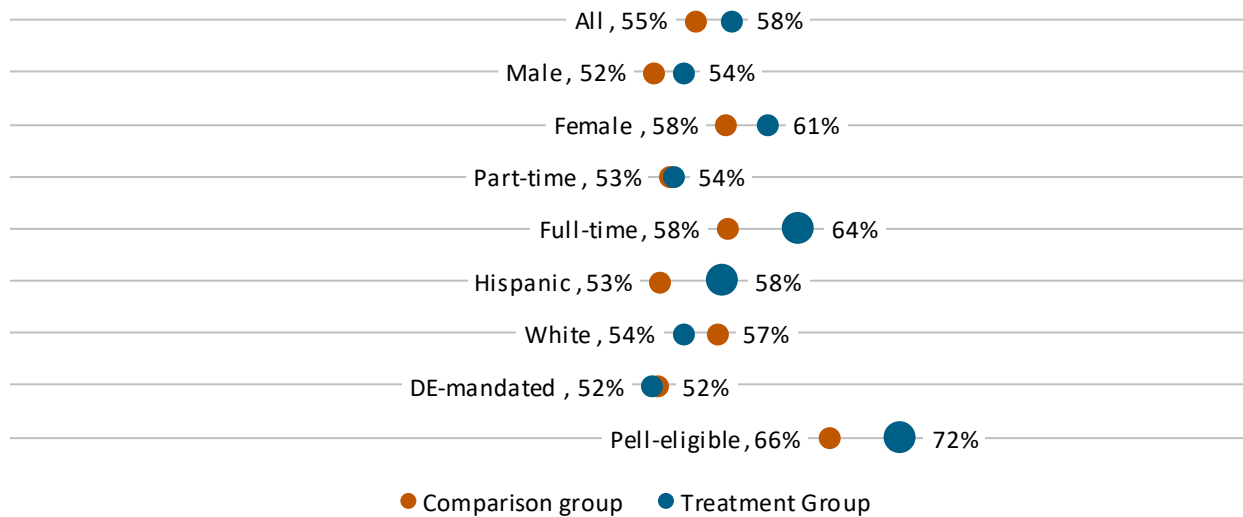


Figure 16. Program impact on fall-to-fall retention for the Fall 2018 cohort, by subgroups



Although PSM models found no program impact on fall-to-fall retention for the 2019 cohort overall, subgroup analysis found significant positive impacts on fall-to-fall retention rates for full-time students, Pell-eligible students, and Hispanic students (Figure 17).

Figure 17. Program impact on fall-to-fall retention for the Fall 2019 cohort, by subgroups



Impacts on FAFSA refiling

We also examined the impacts of the text messaging intervention on FAFSA refiling rates for returning sophomores who had filed a FAFSA in their freshman year (Figure 18). PSM models found that the ACC SIP text messaging intervention had no significant impacts on FAFSA refiling rates overall for the 2017

and 2018 cohorts. Subgroup analysis found significant positive impacts on FAFSA refiling for only White students in the Fall 2017 cohort.

Figure 18. Program impact on FAFSA refiling



Figure 19. Program impact on FAFSA refiling for the Fall 2017 cohort, by subgroups

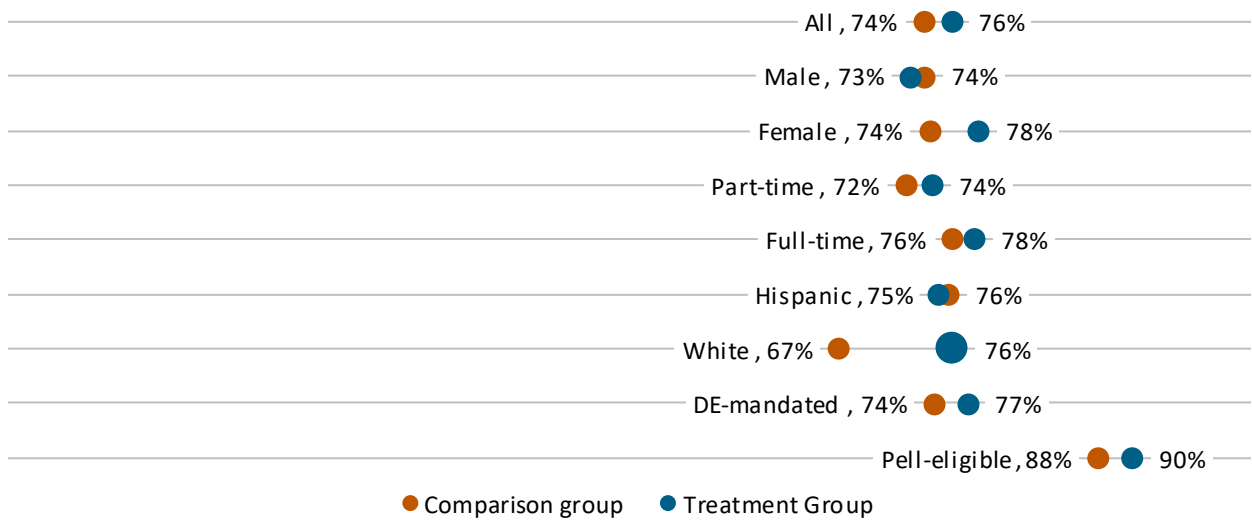
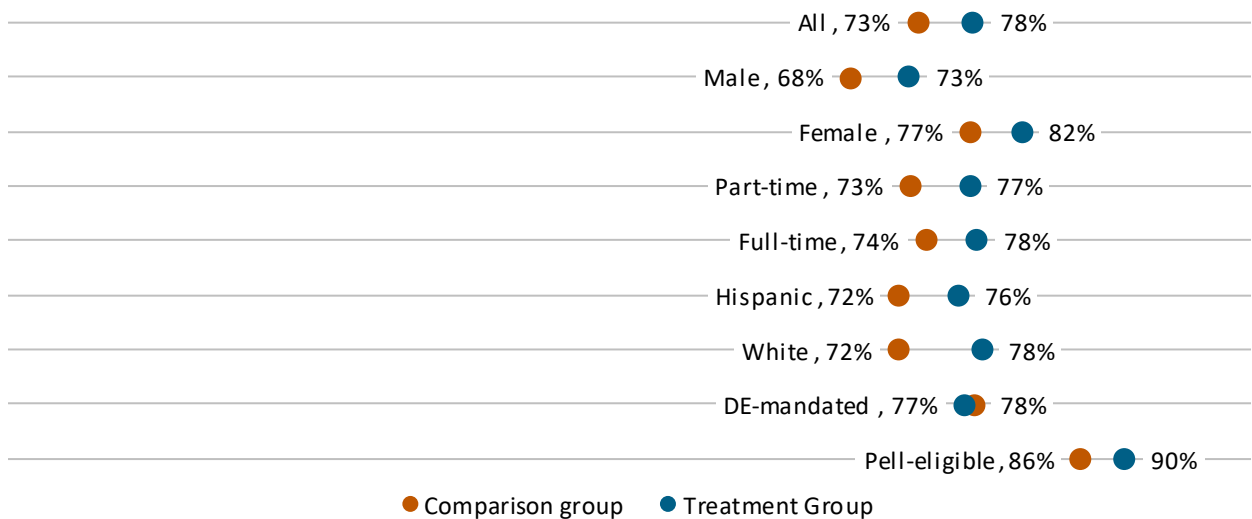


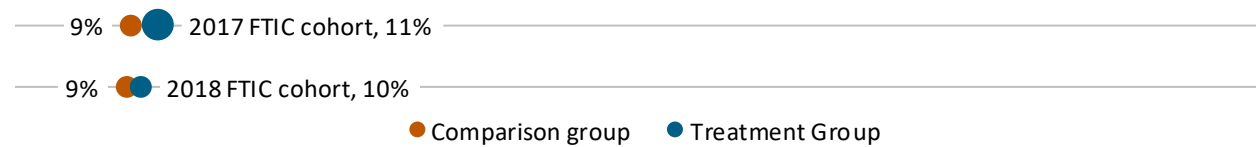
Figure 20. Program impact on FAFSA refiling for the Fall 2018 cohort, by subgroups



Impacts on credential attainment

We also examined the impacts of the text messaging intervention on three-year credential attainment rates (Figure 21). PSM models found that the text messaging intervention had a significant positive impact on 3-year credential attainment for the 2017 cohort. Students in the 2017 cohort who received the texts were about 2 percentage points more likely to earn a credential within 3 years than students who did not receive the texts. However, the impact had a very small effect size (Cohen’s $d=0.1$). PSM models found that the text messaging intervention had no significant impacts on the 2018 cohort.

Figure 21. Program impact on credential attainment



Subgroup analysis found significant positive impacts on 3-year credential attainment rates for female students, full-time students, and White students in the Fall 2017 cohort (Figure 22). Female students who received the texts were about 3 percentage points more likely to have earned a credential in three years than students who did not receive the texts. Notably, full-time students and White students who received the texts were about 3 percentage points more likely to have earned a credential in three years than students who did not receive the texts. Impacts had small effect sizes (Cohen’s $d=0.2$). PSM models did not detect program impacts for any subgroups in the 2018 cohort (Figure 23).

Figure 22. Program impact on credential attainment for the Fall 2017 cohort, by subgroups

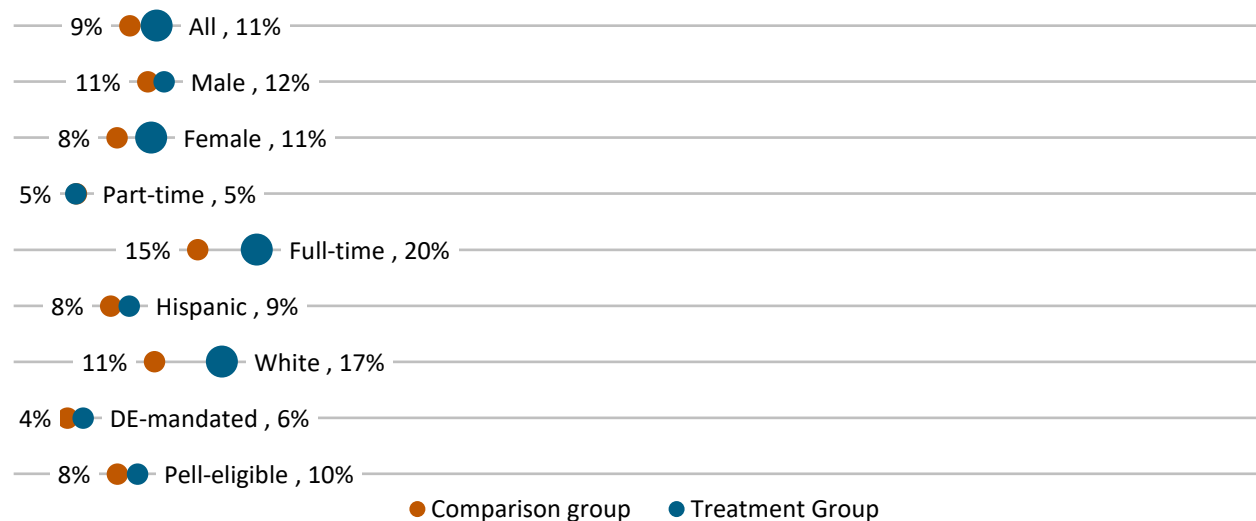
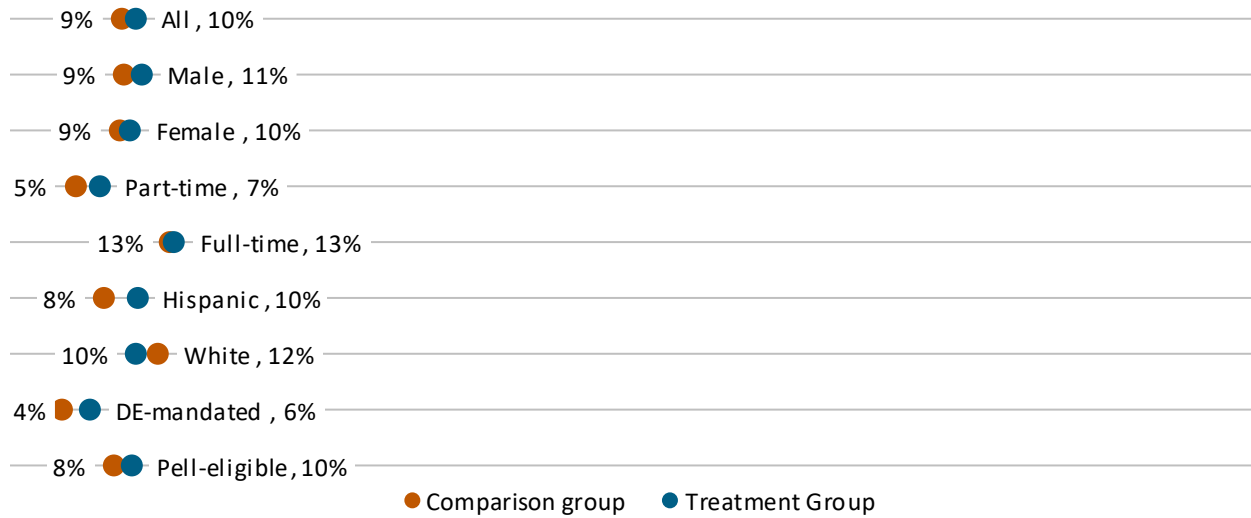


Figure 23. Program impact on credential attainment for the Fall 2018 cohort, by subgroups



LIMITATIONS

The impact analysis is limited by its quasi-experimental design. While propensity score matching (PSM) controls for observed differences between the treatment group and the comparison group, it cannot control for selection bias that may be due to unobserved differences between the groups. As with all PSM approaches, the degree to which unmeasured sources of bias affect the comparability of groups is unknown. The evaluation team made efforts to incorporate all available and important characteristics such as age, gender, race, development education mandated status, Pell-eligible status, and enrollment status. However, some important characteristics such as high school GPA, performance on college entrance tests, and parental education could not be included in the analysis since ACC is an open-access college and hence does not collect this information. PSM does not correct for selection bias that might be caused by characteristics not observed or measured; this remains a significant limitation of this and any other similarly conducted study.

A key goal of the original program design was to lower loan default rates. Unfortunately, we were unable to examine default rates due to the long lag in the availability of loan default data and the small sample sizes of students who have started paying off their loans as of the writing of this report.

CONCLUSION

BACKGROUND

There is extensive evidence that postsecondary education has considerable employment and economic benefits, as well as societal benefits. Individuals with higher levels of education are more likely to have lower unemployment rates, higher earnings, decreased reliance on social support and public assistance programs, better health insurance and pension benefits, and healthier lifestyles (Baum et al., 2013). In 2017, the median earnings of males whose highest level of educational attainment was a bachelor's degree (\$71,990) were 70 percent higher than those of males whose highest level of attainment was high school completion (\$42,440), while the median earnings of females whose highest level of educational attainment was a bachelor's degree (\$52,440) were 63 percent higher than those of females whose highest level of attainment was high school completion (\$31,800). In 2018, 86 percent of young adults aged 25 to 34 years old with a bachelor's or higher degree were employed, compared with 72 percent of those who had completed only high school and 59 percent of those who had not completed high school (Snyder et al., 2019).

Although college enrollment rates have continued to rise across all institution types in recent decades, persistence to degree completion remains a concern, particularly at community colleges. The retention rate² for full-time first-time degree-seeking students who began at public two-year institutions in Fall 2018 was 62 percent, compared to 81 percent for students who began at public four-year institutions. Only 29 percent of students who began college in Fall 2015 as first-time degree-seeking students at public two-year institutions had graduated within 150% of normal time (National Center for Education Statistics, 2020). Researchers and policymakers agree that improving persistence and completion rates among community college students is a top educational priority (Goldrick-Rab, 2010).

DISCUSSION

Our evaluation's findings contribute to a growing body of research investigating the use of behaviorally informed strategies, such as text messaging interventions, to help people navigate complex decisions, such as financial aid. Through a randomized controlled trial design, Castleman & Page (2016) found that a personalized text-messaging intervention designed to encourage college freshmen to refile their

² Persistence is defined as first-year students returning to *any* institution one year later, while retention is defined as first-year students returning to the *same* institution one year later.

FAFSA and maintain their financial aid for their sophomore year produced large and positive effects among freshmen at community colleges - text recipients were almost 14 percentage points more likely to remain continuously enrolled through the Spring of their sophomore year. The Nudging to Stem Success initiative, a randomized controlled trial implemented at four community colleges in Virginia and Ohio, also found a 10 percentage point increase in persistence for STEM students compared to a control group. Such interventions may particularly benefit community college students for whom the ability to continue in college likely depends on being able to maintain financial aid (Soricone & Ende, 2019).

Retention

ACC's retention rate of 58 percent for full-time first-time degree-seeking students in the Fall 2016 cohort was slightly lower than the overall retention rate of 62 percent nationwide and statewide in Texas for public two-year institutions (National Center for Education Statistics, 2018; National Center for Education Statistics, 2020). ACC's retention rate was also 6 percentage points lower than the retention rate of similar large urban public two-year institutions in Texas (64 percent).

Our evaluation of ACC's text message intervention focusing on financial aid outreach found significant positive impacts on fall-to-fall as well as fall-to-spring retention among first-time in college (FTIC) credential-seeking students. Our findings suggest that sustaining and expanding this texting intervention could potentially improve ACC's retention rates to the level of similar large urban two-year public institutions in Texas.

Retention during a pandemic

Students returning to college in the Fall 2020 semester were dealing with multiple challenges related to the Covid-19 pandemic including job security, safety, and childcare. Thus, it is not surprising that fall-to-fall retention for the Fall 2019 cohort overall was lower than previous cohorts.

Even in the context of these challenges, we found that the text messaging intervention had a significant positive impact on fall-to-fall retention for key sub-groups in the Fall 2019 cohort.

Similarly, students returning to college in the Spring 2021 semester were continuing to deal with multiple challenges related to the Covid-19 pandemic and fall-to-spring retention for the Fall 2020 cohort overall was lower than previous cohorts. *Even in the context of these challenges, we found that the text messaging intervention had a significant positive impact on fall-to-spring retention for the Fall 2020 cohort.* Both findings point to the strength of the intervention and its importance in helping students navigate college during a challenging period.

FAFSA refiling

Overall, FAFSA refiling rates for returning students at ACC are high – about three-quarters of returning sophomores who had filed a FAFSA in their freshmen year also refile FAFSA in their sophomore year. *Although we did not find any significant impacts on FAFSA refiling rates overall, our subgroup analyses found a significant positive impact for White students in the 2017 cohort.*

Credential attainment

Only 11 percent of full-time first-time degree-seeking undergraduate students in the Fall 2014 cohort at ACC graduated within 150% of normal time to program completion (National Center for Education Statistics, 2018). In contrast, the graduation rate within 150% of normal time for the Fall 2014 cohort at two-year public institutions was 27 percent nationwide and 19 percent statewide in Texas (National Center for Education Statistics, 2020). ACC's graduation rate was also 8 percentage points lower than the graduation rate of similar large urban two-year public institutions in Texas (19 percent).

Our evaluation found that the text messaging intervention had a small significant impact on credential attainment for the Fall 2017 cohort overall, as well as significant impacts for key subgroups. These relatively small impacts are unsurprising as the text messaging intervention focused on supporting students soon after they entered college, leaving little time for them to graduate in the timeframe of this study. The intervention's positive impacts on retention likely helped boost credential attainment.

Research suggests that addressing completion may require supporting students long after they arrive on campus. Bettinger et al. (2019) studied an experimental intervention that provided students late into college with personalized text messages that prompted them to identify goals associated with finishing their degree, encouraged them to connect with campus-based academic and financial resources, and reminded them of upcoming and important deadlines. Early results indicate that the intervention increased degree completion after one year by 6 percentage points among students at the greatest risk of dropout based on their background and prior enrollment experiences. The study suggests some promise in providing low-cost support to high-risk students within a few semesters of graduating.

Bearing in mind the evaluation's findings of positive impacts on retention and early findings of small impacts on credential attainment, researchers recommend that ACC investigate the use of similar text message interventions that are aimed at students close to graduation and that providing these students with supports needed to graduate.

Sub-group impacts

Part-time students

Our analysis of program impacts for various sub-groups also sheds light on students for whom such interventions may be most helpful. *Although we found that the intervention had significant positive impacts on retention across all sub-groups, our findings also suggested slightly higher impacts for part-time students. These results are particularly salient since part-time students are often juggling work and family obligations and have traditionally had lower retention rates.* Nationwide, only 45 percent of part-time first-time degree-seeking students who began at public two-year institutions in Fall 2018 were retained, compared to 62 percent of full-time students (National Center for Education Statistics, 2020). Considering that half of ACC's FTIC students are classified as part-time, sustaining and expanding this intervention would provide significant benefit to hundreds of part-time students at ACC.

White students

Our evaluation also found a much larger impact on retention for White students in the 2018 cohort as well as a significant positive impact on FAFSA refiling rates for White returning sophomores. This is consistent with findings from a few recent studies. Hurwitz & Smith (2016) studied the U.S. Department's "College Scorecard" and found that students were more likely to send SAT scores to colleges with higher earnings reported on the Scorecard, but that those results were concentrated among White and Asian students and students whose parents had some postsecondary education. Hillman et al. (2017) found that while recent changes to FAFSA filing resulted in more students filing the FAFSA, these changes may not have benefitted the schools enrolling students most likely to benefit from the aid: FAFSA filing rates were lower in schools with larger shares of Black students and students eligible for free- or reduced-price lunch, while higher-income districts and districts with larger shares of White students experienced higher filing rates than in previous cycles. In a study of text messaging-based outreach conducted by the University of Virginia to support applicants from Virginia in completing their financial aid applications on time, Castleman et al. (2017) found that underrepresented minority students were not significantly responsive to the outreach, while their White and Asian peers were more responsive.

CONCLUSION

Some cohorts or some members of cohorts enrolled in ACC treated in this intervention clearly benefited, with increased fall-to-spring and fall-to-fall retention rates (notably, even during a global pandemic),

credential attainment, and FAFSA refiling. Though this research focuses on the benefit to students of this intervention, there are also benefits to ACC as an organization. For example, without this intervention, 120 students (62 part-time students and 57 full-time students) in the 2018 FTIC cohort would not have been retained from fall-to-fall, foregoing tuition costs of \$2,550³ for a full-time student and an estimated \$1,020 for a part-time student⁴, and so their retention also represents a direct fiscal gain of \$209,032 for ACC for the 2018 FTIC treatment group and an estimated \$838,216,568 if this treatment were implemented ACC-wide to all 2018 FTIC students.

Outside of direct benefit to ACC, the SMMO's outreach also provides a centralized focal point across all campuses related to student financial information; this clustering of financial services, referrals, and supports has helped grant participants navigate the often complex territory around financial topics necessary to address while enrolled in college but a step outside the traditional federal and state financial aid efforts. This centralization of services around the SMMO also provides a focal point for future grant efforts and implementation in the growing and important field of community college financial supports intended to promote financial wellbeing, ameliorate the effects of low-income, and, in the long term, coordinate and support wealth generation.

³ Source: <https://www.austincc.edu/students/financial-aid/explore-your-financial-aid/cost-of-attendance>. These costs are estimates based on enrollment in 15 credit hours during the fall and spring terms combined and enrollment within the 16-week session for each term (i.e. full-time enrollment during the regular academic year).

⁴ Source: <https://www.austincc.edu/students/tuition-and-payments/tuition-table>. These costs are estimates based on enrollment in 6 credit hours during the fall and spring terms combined and enrollment within the 16-week session for each term (i.e. part-time enrollment during the regular academic year).

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