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Completion Predictors for Students who Transfer-in to a Community College

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This is to certify that the doctoral study by

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Walden University
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Abstract

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Erin Kristina Reeder

MS, Kaplan University, 2011

BS, University of Maryland, 2003

AA, Anne Arundel Community College, 2000

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

The problem that was addressed through this study is that the credential completion rate for transfer-in students (TIS) is lower than for first-time, full-time students (FTFT) at Peninsula Community College (PCC, a pseudonym). The purpose of this quantitative study was to determine if the completion input (gender, race/ethnicity, age) and environment (number of transfer credits accepted) variables predict credential completion for credential-seeking TIS at PCC. Astin's input-environment-outcome model served as the framework, in which a student's success is a function of the student's background before enrolling and the experiences while attending college. Deidentified archival data for TIS enrolled in fall 2013 were retrieved (n = 565). A logistic regression model showed the input variables, which are common predictors of FTFT completion, were not indicative of completion for TIS. The only statistically significant finding (p = 0.002) was Black TIS were 2.19 times less likely to complete a credential than White TIS. A second logistic regression model showed the environment variable, a completion predictor for 2-to-4-year transfer students, was statistically significant ($p < 0.001$) in predicting completion of TIS. The analysis determined TIS do not have the same completion predictors as FTFT and may need additional or focused support services to improve completion rates. The study resulted in a policy paper proposing recommendations to support TIS: success coach for Black TIS, review how transfer credits are accepted, improve communication with TIS, and engage in consistent evaluation of TIS success. Completing a college credential could mean a better employment for TIS who did not finish a credential the first time they went to college. TIS can be better supported by creating an awareness of the unique needs of the population.

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Dedication

This paper is dedicated to my dad, “Grump.” Thank you for instilling in me the love of learning and perseverance. I wouldn’t be here now without your love and support, and I promise to keep going.

Acknowledgments

There are so many people that helped me get to this point. First and foremost, Dr. Inkpen, I could not have done this without you believing in me and my study. From the beginning you told me stories of cutting 60 pages from papers, so when I had to cut 20, I didn't blink an eye. You did that on purpose, didn't you? I felt recharged after every Zoom call and was so blessed to have had you as my advisor/chair. Sorry I was eating gummy bears instead of going to spin class, but maybe you can tackle that with me next.

To my friends, family, and dogs who constantly heard "I can't, I have to write" – thank you for your patience and encouragement. Even if you had no idea what I was writing about, you still managed to seem interested in my progress. Bunny, I don't have words to describe what your support meant to me in the final weeks. To my boss, John, thank you for reminding me there is light at the end of the tunnel. I look forward to the day I can clean off my desk with a sigh of relief, although most of it is immortalized in the cloud. Finally, I need to acknowledge my son, Kenny, who had to learn to stop asking what was for dinner and just order delivery. Your nutritional sacrifice for several years made it possible for me to write after work. You have a lot of broccoli-eating to catch up on!

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Section 1: The Problem

The Local Problem

Associate degree or certificate (credential)-seeking students who transferred from another postsecondary institution to a community college without a previous degree, referred to as transfer-in students (TIS), were the focus of this project study. Researchers recommend higher education professionals develop an awareness of students who do not follow a traditional path through higher education and adopt strategies to facilitate student transfer and credential completion (Bahr, 2011; Baldwin, 2017b; Katsinas et al., 2019; Taylor & Jain, 2017). Cardona et al. (2019) confirmed the importance of using data to create an efficient system responsive to students' needs. Using data from the Integrated Postsecondary Education Data System (IPEDS), 24% of all new Peninsula Community College (PCC, a pseudonym) students in fall 2020 were credential-seeking TIS (National Center for Education Statistics, n.d.). Table 1 displays the 6-year completion rates for TIS and first-time, full-time students (FTFT) at PCC. The problem investigated through this study is that the completion rate for TIS is lower than for FTFT at PCC.

Table 1

Six-Year Completion Rates for Transfer-in and First-time, Full-time Students at Peninsula Community College

Start term	6-year completion rate (%)	
	TIS	FTFT
Fall 2014	23.1	34.7
Fall 2015	24.5	33.1
Fall 2016	24.0	40.0

Note. TIS = transfer-in students; FTFT = first-time, full-time students.

Gardner et al. (2021) remarked that TIS are largely ignored or unsupported. Additional researchers agreed, finding a lack of attention to transfer student experiences and transfer policy to support degree completion (Katsinas et al., 2019; Taylor & Jain, 2017; Tett et al., 2017; Welsh et al., 2020). As evidenced by the lower completion rates of TIS compared to FTFT, student services and initiatives at PCC are not as effective for TIS. After understanding the completion predictors TIS PCC refine and develop student success services with TIS success in mind.

Rationale

A low percentage of college completers, particularly at community colleges, has caused U.S. postsecondary education to come under scrutiny (Baldwin, 2017a; Levin & Kater, 2018; Torres et al., 2018). State and national efforts are focused on institutional accountability and degree completion (Baker & Doyle, 2017; Baldwin, 2017b; Laanan & Jain, 2016; Wickersham, 2020). Although the shorter timeline to complete a community college credential than a bachelor's degree appeals to students who need to enter or reenter the workforce quickly (Kamer & Ishitani, 2020), many community college students never graduate with the credential they sought (Bailey, 2016). The increasing diversity of student paths through higher education, including various transfer possibilities, has implications for institutional and student success (Crisp, 2016; Wang et al., 2016). Because of the pressure for community colleges to increase the number of graduates and a low completion rate for TIS at PCC, the need for this study was made evident. TIS with some college credits but no degree are a logical target population to increase completion (Baldwin, 2017a; Institute for Higher Education Policy, 2011).

Studies specific to TIS are predominantly focused on bachelor's degree completion predictors and the experiences of students who transferred from a community college to a 4-year institution (Jacobson et al., 2017; Nuñez & Yoshimi, 2017). Studies about students who transfer-in to a community college remain limited (Baldwin, 2017a; Taylor & Jain, 2017) or outdated. For example, Bahr's (2009, 2012) seminal studies of community college-to-community college transfer in California for students enrolled in fall 1995 have not been refreshed or recreated for other types of student transfer. According to a National Student Clearinghouse (NSC) report, 32% of students who transferred out of a public 4-year institution transferred into a community college (Shapiro et al., 2018). NSC reported that 39% of students who transferred out of a community college transferred to another community college (Shapiro et al., 2018) with other community colleges being the most popular destination of all students who transferred between postsecondary institutions (Baldwin, 2017a; Shapiro et al., 2018).

The student input (demographic) completion predictor variables for this project study were selected based on Astin's (1993) input-environment-outcome (IEO) framework and were found as common predictors in other studies of undergraduate completion (Armbrust, 2019; Barbera et al., 2020; Causey et al., 2020; Ocean & Hicks, 2021; Yu, 2017). PCC cannot control student demographics but can address the college environment to improve outcomes (Astin, 1993). The number of transfer credits accepted is often studied as a bachelor's degree predictor variable for students who transferred from a community college to 4-year institution (Hodara et al., 2017; Monaghan & Attewell, 2015). PCC currently transfers only credits toward a student's major, not all

credits earned at previous institutions. A student may have earned 30 credits, but only 12 credits transfer into the new major. When credits a student earned at another institution do not transfer, or transfer as electives instead of courses in the major, it increases the time it takes for a student to earn a degree (Hodara et al., 2017). To adequately support TIS completion at PCC, completion predictors for TIS must be understood. College completion goals cannot be met without increasing credentials earned by TIS (Gardner et al., 2021). The purpose of this quantitative study was to determine if the variables gender, race/ethnicity, age, and/or number of transfer credits accepted predicted credential completion for TIS at PCC.

Definition of Terms

Completion rate: "the percentage of full-time, first-time degree/certificate-seeking undergraduate students enrolled at the institution who obtain a degree or certificate within [a specified number of years]" (Aliyeva et al., 2018, p. GR-2).

First-time, full-time students (FTFT): Credential-seeking undergraduate students who have not attended another postsecondary institution and are enrolled in a full-time course load (IPEDS, 2021).

Racial minorities: Individuals from races and ethnicities other than White. The U.S. population was composed of 39% racial minorities in 2017 (Espinosa et al., 2019).

Transfer-in students (TIS): "A student entering the reporting institution for the first time but known to have previously attended a postsecondary institution at the same level (e.g., undergraduate, graduate). This includes new students enrolled in the fall term who transferred into the reporting institution the prior summer term. The student may

transfer with or without credit. For systems of coordinated institutions (multi-campus system), students are to be identified as TIS upon entering an institution from another institution within the same coordinated system" (IPEDS, n.d.).

Transfer credits: "Transfer and award of academic credit between higher education institutions" (Reilly et al., 2017, p. 1).

Significance of the Study

As colleges across the United States become more flexible in program and course offerings, including an increase in online courses, it is easier for students to take courses outside of their geographic area (Friedman & Moody, 2021). Because of the increased mobility of U.S. college students, understanding the completion predictors of TIS can help community college leaders and policymakers across the country make informed decisions related to the specific needs of the TIS population (Katsinas et al., 2019; Shapiro et al., 2018; Taylor & Jain, 2017). Students with some college credits but no degree are closer to the finish line than FTFT, thereby making TIS a desirable population to target for completion initiatives (Baldwin, 2017a).

Although student-related predictor variables negatively associated with success, such as being a racial minority (Cahalan et al., 2021) or having a low high school GPA (Yu, 2017) cannot be changed, environment variables in the form of services or policies introduced by the institution could help students be more successful (Barbera et al., 2020). For example, if age is determined to be a completion predictor for TIS at PCC, new student orientation could be updated to focus on support services that might be important to older students, or more evening classes with full-time faculty could be

scheduled. If male TIS of Black race/ethnicity are less likely to complete a credential, a student support program with faculty mentors who are Black men could be created. Understanding the completion predictors for TIS expands upon the completion dialog at PCC.

Research Questions and Hypotheses

The following research questions guide this study:

RQ1: Do the completion predictor variables gender, race/ethnicity, or age predict credential completion within 6 years for TIS at PCC?

$H_0 1_1$: Gender is not a predictor of credential completion for TIS at PCC.

$H_a 1_1$: Gender is a predictor of credential completion for TIS at PCC.

$H_0 1_2$: Race/ethnicity is not a predictor of credential completion for TIS at PCC.

$H_a 1_2$: Race/ethnicity is a predictor of credential completion for TIS at PCC.

$H_0 1_3$: Age is not a predictor of credential completion for TIS at PCC.

$H_a 1_3$: Age is a predictor of credential completion for TIS at PCC.

RQ2: Does the number of transfer credits accepted predict credential completion within 6 years for TIS at PCC?

$H_0 2$: The number of transfer credits accepted is not a predictor of credential completion for TIS at PCC.

$H_a 2$: The number of transfer credits accepted is a predictor of credential completion for TIS at PCC.

Review of the Literature

Research for this literature review was collected using the following databases: Education Source, ERIC, SAGE Journals, Taylor and Francis, Academic Search Complete, ProQuest Dissertations and Theses, and Google Scholar. The articles were restricted to those published since 2016, except for seminal work in the fields. The following keywords were used for the search: *community college, transfer students, lateral transfer, reverse transfer, completion, associate degree or certificate, graduation, student success data, nontraditional students, input-environment-outcome, first-time full-time students,* and *transfer credits*. Relevant statistics were provided by PCC's institutional research (IR) office or found using public reports and data from NSC, NCES, PCC's state higher education commission, and PCC.

Theoretical Foundation

Astin's (1993) IEO framework is based on the concept that a student's success is a function of the student's background, characteristics, and perceptions before enrolling and experiences the student has while attending college. The input pillar used variables to describe the person before enrolling in the institution. The environment pillar represented the experiences and interactions a student had with the institution's programs, people, and policies. The outcome pillar used variables to describe the characteristics of the student at milestones and upon leaving the institution. In essence, Astin used the equation *input + environment = outcome* to describe the impact of college on a student.

Astin (1993) assessed how a student changed after exposure to college environmental variables. Astin used the IEO framework to study the impact of 131 input

and 192 environmental variables on 82 outcomes. Astin's study tested cognitive and noncognitive variables of freshman college and university students over 4 years. A sample of the 131 input variables in Astin's study included high school GPA, SAT scores, gender, race/ethnicity, age, socioeconomic status, religion, political orientation, alcohol consumption, and fraternity or sorority membership. Institution size, institution type (public, private, research), academic field of study, student orientation, on-campus housing, percent of faculty with a Ph.D., and student peer group traits were among the 192 environmental variables in Astin's study. Some of the 82 outcome variables in Astin's study included retention, bachelor's degree completion, satisfaction with the value of college, and measures of self-change.

Astin's (1993) IEO framework was selected for this project study because the model allowed for the flexibility to study transfer-related variables that have not been analyzed at PCC. Since current research about completion predictor variables for TIS does not exist, the present study was reflective of recent research about completion predictor variables for FTFT college students (Armbrust, 2019; Barbera et al., 2020; Causey et al., 2020; Ocean & Hicks, 2021; Yu, 2017). Astin's IEO framework was used to examine how a sample of FTFT predictor variables apply to TIS completion. The predictor variables representing the input pillar in this study were gender, race/ethnicity, and age. Because PCC has a degree of control over how credits are accepted (registrar, personal communication, November 1, 2021), the predictor variable representing PCC's environment for TIS was the number of transfer credits accepted. The dependent variable, or outcome pillar, was completion of an associate degree or certificate after 6 years. Six

years was selected to mirror previous completion studies (Bahr, 2009; Causey et al., 2020; Juszkiewicz, 2017; Yu, 2017).

Review of the Broader Problem

The format of this literature review is reflective of Astin's (1993) IEO framework and is organized by Astin's three pillars: input, environment, and outcome. First, the input predictor variables related to student demographics are presented. Next, the number of transfer credits accepted is discussed as the environment variable. Finally, the outcome of credential completion is presented.

Input: Community College Student Demographics

Following Astin's (1993) IEO framework, student demographics (input) are examined as predictor variables of completion for TIS at PCC. The predictor variables in this project study are not exhaustive but are common in community college completion studies (Armbrust, 2019; Barbera et al., 2020; Yu, 2017). Community college leadership are particularly concerned with issues of equity and inclusion (Mead, 2021); hence, completion is often analyzed by gender, race/ethnicity, and age to identify subsets of students in need of extra support to be successful (Yu, 2017). Therefore, the present study includes gender, race/ethnicity, and age as input predictor variables for the TIS subset at PCC. The results of this study have the potential to provide insight into whether the support services based on FTFT data are effective for TIS at PCC.

Gender

Gender was selected as an input variable because it is a common predictor variable in completion studies about college students (Armbrust, 2019; Barbera et al.,

2020; Ocean & Hicks, 2021; Yu, 2017). In fall 2019, 57.6% of all community college students were female (NCES, 2020a). According to NCES, 60.7% of 2018-2019 associate degree graduates were female (NCES, 2020c), and 32% of certificate graduates were female (NCES, 2020b). In a study of community college students (Cardona et al. (2019) found gender to have a very low importance on 3-year associate degree completion. Using 10-year enrollment data, NSC found little difference in the time it takes for male (3.3 years) and female (3.4 years) students to earn an associate or bachelor's degree (Shapiro et al., 2018). In a between-college study, Yu (2017) found community colleges with a larger portion of female students is negatively associated with credential completion for FTFT community college students. In fall 2020, 62.4% of PCC students were female (PCC, 2021a). The present study determined if gender predicts completion for TIS at PCC, which may lead PCC to examine strategies such as course scheduling or faculty and advisor hiring.

Race/Ethnicity

Because of the large population of racial minorities, community colleges assume much of the responsibility to tackle equity issues in higher education (Mead, 2021). Community colleges serve more racial minorities than any other sector of higher education (Baldwin, 2017a). More than half (54%) of all students enrolled in a 2-year college in fall 2019 were not White (NCES, 2021b). In fall 2019, the largest racial minority group enrolled in 2-year colleges were Hispanic students at 27% of the total student population, followed by Black students at 14% (NCES, 2016). With the population growth of racial minorities across the United States (Espinosa et al., 2019),

education professionals must understand needs and how to support student success for all populations (Flores et al., 2017).

Race/ethnicity was selected as a predictor variable for this study because it is commonly analyzed in completion studies for all sectors of higher education (Armbrust, 2019; Bahr, 2009; Barbera et al., 2020; Ocean & Hicks, 2021; Yu, 2017). Yu (2017) analyzed whether several variables, including race/ethnicity, predicted community college completion after 6 years. Yu found first-time community college racial minorities were less likely to complete a community college credential in 6 years than White students. Causey et al. (2020) found the 6-year completion rate declined in 2019 for Black and Hispanic students who started at a community college (Causey et al., 2020). Since racial minorities are overrepresented at community colleges (Levin & Kater, 2018), the findings about completion predictors for TIS in this study are necessary to understand where inequities exist (Durosko, 2018). In fall 2020, 45% of PCC students were racial minorities (PCC, 2021a). The present project study determined whether race/ethnicity predict completion for TIS at PCC, which may lead college leadership to consider innovative programs such as Black male mentoring.

Age

Age is also a common completion predictor variable for all sectors of higher education (Armbrust, 2019; Barbera et al., 2020; Ocean & Hicks, 2021; Yu, 2017). Community colleges serve students of broad age ranges (Levin & Kater, 2018). According to NCES (2021b), 32.3% of 2-year college students (public and private) were age 25 or older. Cardona et al. (2019) found age highly influential for 3-year associate

degree completion. Armbrust (2019) found students age 22 to 27 were 2.477 times more likely to complete a certificate from a community college than students age 16 to 21; students age 28 to 33 were 7.279 times more likely; students age 34 to 39 were 4.96 times more likely; and students over 39 were 2.79 times more likely. The mean age of PCC students in fall 2020 was 25 (PCC, 2021a). The present project study determined whether age predicts credential completion for TIS at PCC.

Environment: Number of Transfer Credits Accepted

The environment variable is the only variable an institution can address to improve outcomes (Astin, 1993). Continuing with Astin's (1993) IEO framework, the environment predictor variable in this study is the number of transfer credits accepted by PCC. The environment variable in this project study is specific to TIS as not all PCC students have transfer credits. The literature about TIS is dominated by vertical 2-to-4-year transfer (Taylor & Jain, 2017). The number of transfer credits accepted is often studied as a bachelor's degree predictor variable for students who transferred from a 2-year to 4-year institution (Hodara et al., 2017; Monaghan & Attewell, 2015) and was examined in this study since current literature about transfer-in to community colleges does not exist. Monaghan and Attewell (2015) found the number of credits transferred was a positive predictor of bachelor's degree completion. Hodara et al. (2017) found students who had all or most of their credits transferred had 2.5 times greater likelihood of bachelor's degree completion than those who had less than half of their earned credits transfer. The present study determined whether the number of transfer credits accepted predicts completion for TIS at PCC.

External factors, including state requirements and national recommendations, play a role in how credits are allowed to be transferred (Hodara et al., 2017; Reilly et al., 2017; Taylor & Jain, 2017). When credits a student took at another institution do not transfer, or transfer as elective credit instead of credit for courses in the major, it increases the time it takes for a student to earn a degree (Hodara et al., 2017). In addition, when an institution does not accept course credits a student paid for at a previous institution, it increases the cost of the degree due to a repetition of coursework (Hodara et al., 2016). The results of this study revealed that for each credit transferred, TIS have an increased chance of completion. Because of this finding, PCC may want to consider transferring all acceptable credits, instead of only credits related to the student's major. PCC cannot control how many transfer credits a student earns before enrolling in PCC, but the number of transfer credits accepted by PCC is a variable PCC can control within regulations. Transferring all acceptable credits allows students to conduct "what-if" scenarios with various majors to determine the fastest path to graduation.

Outcome: Credential Completion

The outcome of credential completion (associate degree or certificate) is the final pillar in the present study grounded in Astin's (1993) IEO framework. This study examines the input and environment predictor variables presented earlier on the dependent variable, credential completion for TIS at PCC. Credential completion will be determined after 6 years, by spring 2019. Six years was selected to mirror previous completion studies (Bahr, 2009; Causey et al., 2020; Juszkiewicz, 2017; Yu, 2017). Six

years also allows TIS ample time to graduate as a part-time student or if no credits were transferred to PCC.

Community colleges play a critical role in higher education, especially for students who may not otherwise be able to access a college education (Levin & Kater, 2018). Because of open-admission and lower cost of attendance, community colleges appeal to students with diverse academic and socioeconomic backgrounds, attracting students whose life situations require convenience and flexibility (Cohen et al., 2014; Laanan & Jain, 2016; Levin & Kater, 2018). According to the American Association of Community Colleges (AACC, 2021), community colleges served 11.8 million students in fall 2019, 6.8 million of which enrolled in degree and certificate programs and courses. The shorter timeline to complete a community college credential than a bachelor's degree appeals to students who need to enter or reenter the workforce (Kamer & Ishitani, 2020). Students with an associate degree earn more than someone with only a high school diploma (NCES, 2019). One of the fundamental challenges for community colleges is getting students to the finish line (Bailey, 2016). As such, community colleges receive criticism for lower completion rates than 4-year institutions (Levin & Kater, 2018; Torres et al., 2018). However, critics fail to acknowledge that community college students more often have life situations that prevent completion than their 4-year college peers (Torres et al., 2018).

National completion initiatives were created to address the low percent of students who complete a community college credential. In the American Graduation Initiative, President Obama emphasized the role of community colleges in increasing the

number of graduates (The White House, 2009). Several other completion initiatives emerged to support an increase in degree and certificate completion. Achieving the Dream, Complete College America, and Completion by Design are specific to helping community college students earn a certificate or associate degree, particularly low-income, racial minorities, and students age 25-34 (Baldwin, 2017a; Morris, 2016). PCC's state higher education commission established a program designed to assist students who transferred from a community college to a state university without an associate degree to transfer university credits back to complete the associate degree (State Higher Education Commission, 2016).

Implications

The primary goal of the project study is to provide PCC leadership with recommendations of services to support TIS. I chose a policy recommendation paper as the best way to present study findings to leadership at PCC. Results of predictor variables may provide insight into student support services so TIS are provided with a unique opportunity for success. The study results could lead to improvements in services for TIS, which could lead to increased completion for TIS at PCC. The policy paper may establish a foundation for TIS advocacy and expand understanding of TIS beyond those in transfer-related positions.

Summary

An undesirably low percentage of college completers, particularly at community colleges, has caused U.S. postsecondary education to come under scrutiny and created pressure for community colleges to increase the number of graduates (Baldwin, 2017a;

Levin & Kater, 2018; Torres et al., 2018). The need for this project study was made evident because of a low completion rate for TIS at PCC. TIS with some college credits but no degree are a logical target population to increase completion (Baldwin, 2017a; Institute for Higher Education Policy, 2011). Because of the increased mobility of U.S. college students, understanding the completion predictors of TIS can help community college leaders and policymakers across the country make informed decisions related to the specific needs of TIS (Katsinas et al., 2019; Shapiro et al., 2018; Taylor & Jain, 2017). Understanding the completion predictors of PCC TIS can aid PCC in refining and developing student success services with TIS success in mind. If the completion predictors for FTFT are not significant predictors for TIS, it indicates that services and support for TIS need to be refined.

Astin's (1993) IEO model was used as the framework for this study to analyze input (gender, race/ethnicity, and age) and environment (number of transfer credits accepted) variables on the outcome (credential completion after 6 years). The predictor variables tested in this study are not the sole predictors of completion but are common variables tested in college completion studies (Armbrust, 2019; Bahr, 2009; Barbera et al., 2020; Ocean & Hicks, 2021; Yu, 2017). In Section 2, the research design, sample, and data analysis plan are detailed. Additionally, information about the research site and sample are presented, as well as study assumptions and limitations.

Section 2: The Methodology

Research Design and Approach

A quantitative study design is detailed in this section to determine whether input (RQ1) and environment (RQ2) variables predict completion for TIS at PCC. Specifically, a correlational design was employed in this study to determine whether input (gender, race/ethnicity, age) and environment (number of transfer credits accepted) variables predicted completion of a credential within 6 years for TIS at PCC. A correlational design was selected to answer the RQs because it describes the strength and direction of the relationship between two variables that cannot be manipulated by a researcher (Cuttler, 2017). Current research about completion predictor variables for TIS does not exist, so completion predictor variables for FTFT college students were selected for this project study (Armbrust, 2019; Barbera et al., 2020; Causey et al., 2020; Ocean & Hicks, 2021; Yu, 2017). This project study does not include commonly studied predictor variables for high school GPA, SAT, or ACT because TIS are not required to submit those data if college English and math were completed at another institution (PCC, n.d.-a). Both RQ1 and RQ2 were analyzed using logistic regression to predict the outcome of the dependent variable based on the independent variables (Cuttler, 2017).

Setting and Sample

The local setting is PCC, a suburban mid-Atlantic community college established in 1961. In addition to certificates, PCC offers degrees in associate of arts (AA), associate of applied science (AAS), associate of science (AS), associate of arts in teaching (AAT), and associate of science in engineering (ASE). Fall 2013 was selected for the project

study to avoid possible atypical completion rates due to the COVID-19 pandemic. PCC enrolled 16,463 students in fall 2013 (NCES, n.d.). According to PCC's fall 2013 demographic data, 39% of students were 25 or older, 59% of students were female, 38% were racial minorities, and 24% of students were new to PCC. PCC reported 840 TIS in the fall 2013 IPEDS enrollment report, representing 24% of all new PCC students that fall (NCES, n.d.).

Cohen's (1992) primer of statistical power was used to determine the minimum sample size for the research questions, a logistic regression with four independent variables. Using the standard educational settings of power at 0.8, medium effect size, and an α of 0.05, Cohen's table indicated a minimum sample size of 84. The entire population of 840 TIS is, consequently, sufficient.

Secondary data from the 840 TIS enrolled in at least one semester credit hour at PCC during fall 2013 as reported to IPEDS were examined in this project study. TIS transferred from another community college, 4-year institution, or combination thereof. This population may transfer-in with or without credits from their previous institution. Reasons for not accepting transfer credits include poor grades at the previous institution, the institution was not degree-awarding and regionally or nationally accredited, the previous coursework does not apply to the new major at PCC, or because PCC does not offer a similar discipline.

The study population does not include students who transferred from institutions outside of the United States. TIS do not include students who only transferred credits from nontraditional sources such as Advanced Placement (AP), College Level

Examination Program (CLEP), International Baccalaureate (IB), high school articulated credit, or military experience. However, if the student attended another U.S. postsecondary institution in addition to earning college credit from a nontraditional source or foreign college, the student is included in the TIS population.

Instrumentation and Materials

PCC collects data about each student from their admission application and transcripts submitted. The admission application is completed online or a paper version is available (PCC, n.d.-b). Student demographics are self-reported on the admission application. Race/ethnicity is determined based on responses to two fields on the admission application and are not required fields on the admission application. Ethnicity has two responses: Hispanic or non-Hispanic. Responses for race are Black, White, Asian, Native American, Hawaiian or Pacific Islander, two or more races, or other. For the purposes of this project study, a Hispanic ethnicity supersedes race. So, if a student reported Hispanic ethnicity and Black race, the race/ethnicity will be reported as Hispanic. If a student reported non-Hispanic ethnicity and Black race, the race/ethnicity will be reported as Black. Gender is a required field and has two responses: male or female. The student's date of birth is a required field and is used to determine age on the census date of the fall 2013 term (20% of the term has elapsed). Students also provide high school and previous postsecondary institution(s) attended with dates and degree(s) earned, if applicable, on the admission application. Attendance at a previous institution is also added to a student's record when transcripts are received in the registrar's office.

Students certify the accuracy of data prior to submission. Deidentified raw data about each TIS in this study will be stored on a secure server and retained for at least 5 years.

Data Collection and Analysis

Deidentified secondary data about TIS were requested from PCC's IR office after approval by Walden University's Institutional Research Board (IRB; 02-17-22-1014009) and PCC's IRB (2232022). Only secondary data were used in this study; human subjects were not involved. Data were delivered via a SPSS file using a secure file transfer program used at PCC to transmit sensitive data. Table 2 presents the scale for each independent variable (IV) and dependent variable (DV) used to answer the RQs in this project study.

Table 2

Study Variables and Scale

	Research question	Variables	Scale	Raw data values
RQ1	Do the completion predictor variables gender, race/ethnicity, or age predict credential completion within 6 years for TIS at PCC?	Gender (IV)	Nominal	Male, Female
		Race/Ethnicity (IV)	Nominal	Hispanic, White, Black, Asian, Native Hawaiian or Pacific Islander, American Indian or Alaska Native, Multi-race
		Age (IV)	Continuous	17 to 81
		Completion (DV)	Nominal	Yes, No
RQ2	Does the number of transfer credits accepted predict credential completion within 6 years for TIS at PCC?	Number of transfer credits accepted (IV)	Continuous	0 to 68
		Completion (DV)	Nominal	Yes, No

Note. IV = independent variable; DV = dependent variable.

The RQs examined whether the independent variables gender, race/ethnicity, age, and number of transfer credits accepted predict completion for TIS. The RQs were analyzed using logistic regression since the dependent variable is dichotomous (completed or not). Binary logistic regression allows the independent variables to be considered at the same time without determining a hierarchy of importance relative to each other (Sio Jyh Lih & Ismail, 2019). Carales (2020) used logistic regression to predict associate degree completion, retention, and transfer or bachelor's degree completion for Latinx students. Carales' study also examined input and environment independent variables and served as a model to answer the RQs in this study.

Assumptions, Limitations, Scope and Delimitations

Assumptions

It was assumed that students accurately completed the admission application and indicated previous colleges attended. The previous institution attended field on the application, used to determine whether the student is a TIS, is not required because not all students previously attended another college. In absence of previous college attendance on the admission application, the college's registrar notes the student submitted transcripts and the previous institution field will be entered by the registrar's office. It was assumed that students truly intended to seek a credential at PCC and did not enroll only to get a college email address for student discounts (Runner Enterprise Data Quality, n.d.) or as part of a financial aid scam (Patel, 2021). I assumed students who were credential-seeking when enrolled in fall 2013 remained as such in future semesters. Finally, previous enrollment at other college(s) was not verified using the NSC database.

Limitations

This study was based on a specific community college in a specific region of the United States. Results of this study are not generalizable to the entire TIS population in the United States. In addition, many predictor variables exist beyond the four evaluated in this project study. The predictor variables were selected for this study because they have been found to be significant predictors of completion for FTFT. Examples of other predictor variables include financial need, job status and hours worked per week, and race/ethnicity of faculty in the major, but data would be difficult to obtain or require student surveys. Future studies could analyze more of Astin's (1993) predictor variables on completion. The reason for using the predictor variables selected for this study was to determine whether TIS are a unique group and unlike FTFT.

Scope and Delimitations

According to Walden University, the scope of the doctoral capstone is to address a local problem. A delimitation for this study is transfer students transfer-in from numerous institutions. A student may have accessed and know how to seek tutoring and support services from previous experience, in which case an advantage toward completion may exist for some TIS.

Limitations of Evaluation

As this study is a doctoral capstone and reflective of a local problem, this study is based only on 6-year completion of TIS at one Mid-Atlantic community college. This study did not investigate other forms of success including term-to-term retention, transfer-out, or bachelor's degree completion.

Protection of Participants' Rights

This study did not use human participants. However, the study had several approaches to protect participants' rights. The data to be analyzed were deidentified secondary data provided by PCC's IR office sent via a secure file transfer system. Deidentified data about TIS in this study will be stored on a secure server and retained for at least 5 years. Walden University's IRB approved the study (02-17-22-1014009) as did PCC's IRB (2232022).

Data Analysis Results

The following sections provided an analysis of the study's data. After IRB approval, PCC's IR office provided an SPSS data file for 840 TIS. The data set was retrieved from PCC's secure file transfer system, Acronis, and imported into IBM SPSS (version 27) for analysis.

Data Set Cleaning

The original 840-student data set was cleaned according to the study's inclusion/exclusion criteria described in the setting and sample section. Records that were removed included students who had already earned a degree at a previous institution, had incomplete variable data, and transferred from foreign colleges or earned only military credit. The final sample for the study included 565 records. Cohen's (1992) primer using the standard educational settings of a medium effect size, power of 0.8, and an α of 0.05 determined 84 records were required for a logistic regression with four independent variables, thus the final cleaned data set with 565 records was sufficient.

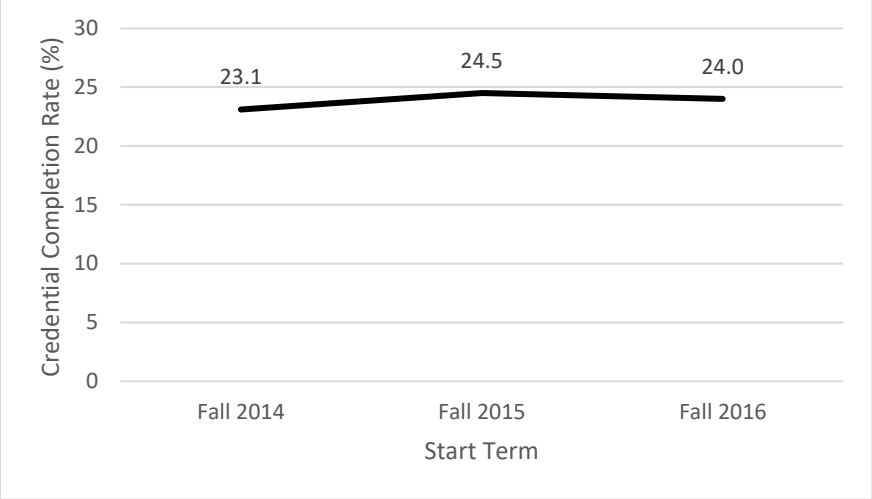
The delivered race/ethnicity variable included nine race/ethnicity values used for IPEDS reporting. Asian, American Indian/Alaskan Native, Native Hawaiian/Pacific Islander, and Multi-race were combined into one category labeled *Other Races* to mirror practice at PCC. A dummy variable was created for each remaining race/ethnicities – White, Black, Hispanic, and Other Races. For descriptive analysis, the student's previous college was categorized by type (2-year, 4-year, or both) using an internet search for the colleges.

Descriptive Statistics

Of the 565 eligible TIS enrolled in fall 2013, 137 (24.2%) completed a credential within 6 years. The fall 2013 TIS cohort completion rate was similar to the fall 2014 and fall 2015 completion rates discussed in the problem statement. The 4-year trend shown in **Error! Reference source not found.** does not indicate a consistent upward or downward trend. Of the 137 TIS who completed a credential, 119 earned an associate degree and 18 earned a certificate.

Figure 1

Transfer-in Student Completion Rates Fall 2013-Fall 2016 Cohorts



Error! Reference source not found. presents descriptive statistics about completion status and type of credential by each of the input predictor variables: gender, race/ethnicity, and age. Male TIS had a higher graduation rate (25.8%) than female (23.2%), which is atypical compared to FTFT in which women graduate at a higher rate than men (NCES, 2020c). The completion rates for all other race/ethnicities were lower than those of White TIS. The age group ranges in **Error! Reference source not found.** are commonly used at PCC. The mean age of TIS was 25.61 years old with a standard deviation of 8.519.

Table 3

Credential Completion by Gender, Race/Ethnicity, Age, and Credential Type

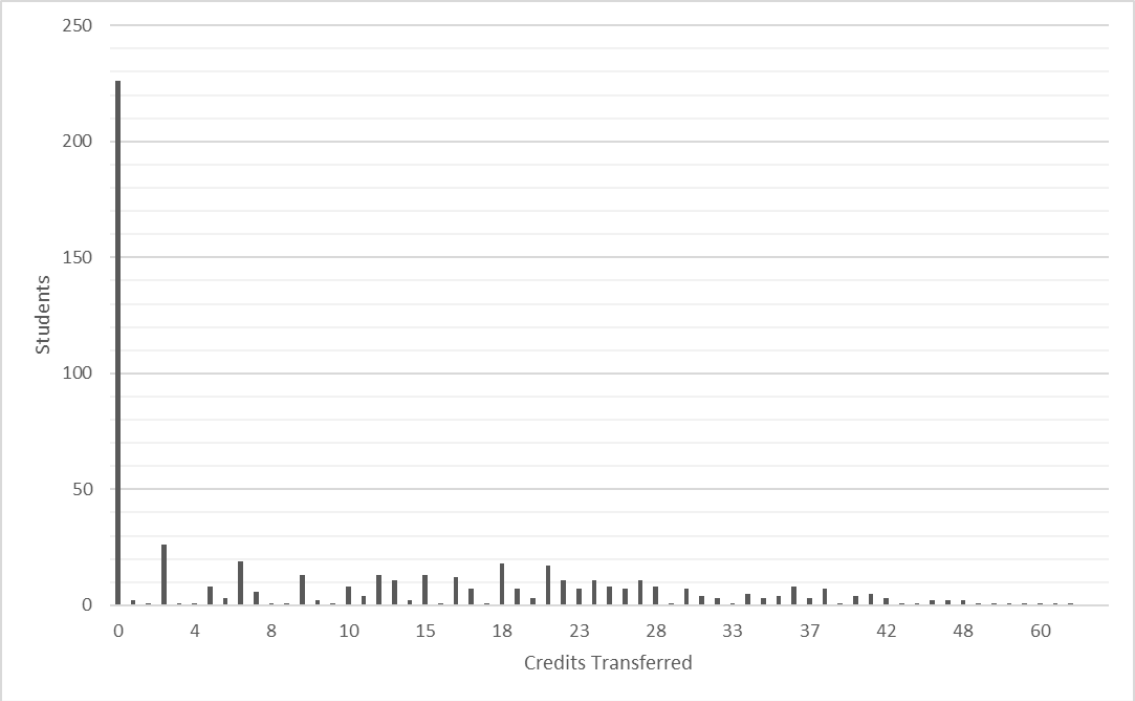
Variable	N	Graduated	Not graduated	Completion rate	Type of credential awarded	
					Associate degree	Certificate
Gender						
Male	217	56	161	25.8%	48	8
Female	348	81	267	23.2%	71	10

Race/ethnicity						
White	296	87	209	29.3%	79	8
Black	173	28	145	16.8%	20	8
Hispanic	49	10	39	20.4%	9	1
Other races	47	12	35	25.5%	11	1
Age						
Under 25	338	84	254	24.8%	77	7
25 to 35	162	37	125	22.8%	31	6
36 and over	65	16	49	24.6%	11	5

TIS (*n* = 565) previously attended another 2-year college (38.9%), a 4-year institution (43.4%), or both a 2-year and a 4-year institution (17.7%). A similar trend in previous college attendance was witnessed for the TIS who completed a credential (*n* = 137). TIS completers attended another 2-year college (38.7%), a 4-year institution (42.3%), or both a 2-year and 4-year institution (19.0%).

Figure **2**

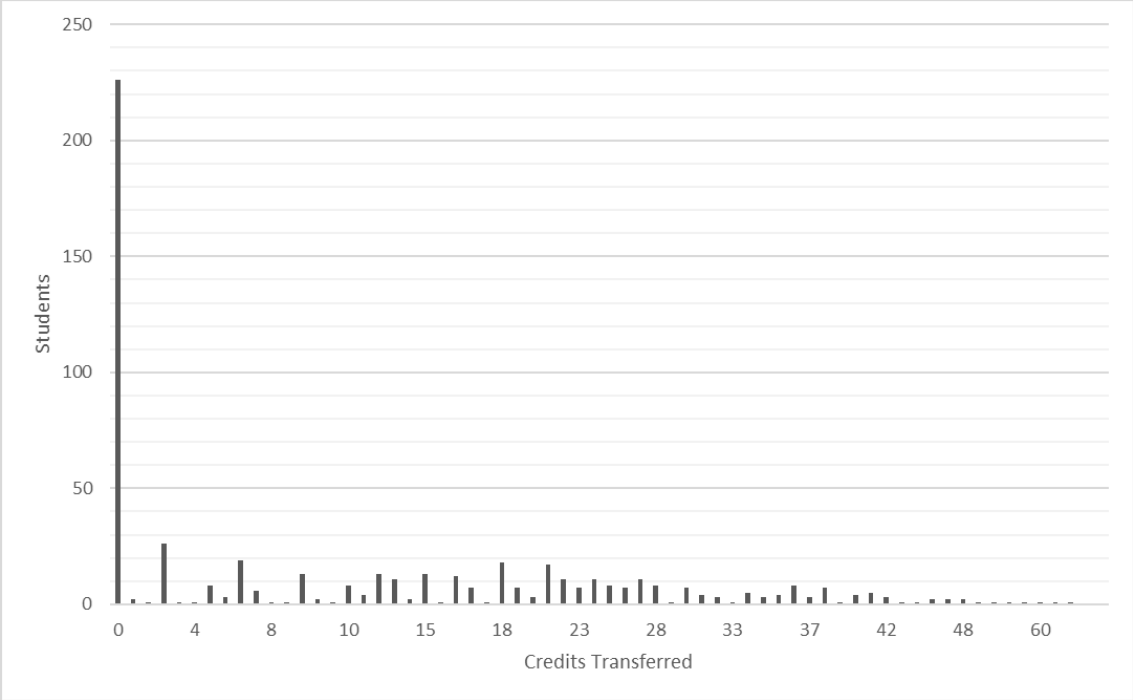
Number of Transfer Credits Accepted for Transfer-in Students



presents a graphic of frequency of transfer credits accepted by PCC. Upon visual inspection many TIS entered PCC with zero transfer credits.

Figure 2

Number of Transfer Credits Accepted for Transfer-in Students



Addressing Binary Logistic Regression Assumptions

The research questions were analyzed using binary logistic regression. Binary logistic regression analysis relies on seven assumptions. The seven statistical assumptions for binomial logistic regression were tested and indicated that the data set could be analyzed using this method because all assumptions were satisfied (Laerd Statistics, n.d.; Osborne, 2015).

Assumption 1: The Dependent Variable is Dichotomous

The dependent variable for this study was credential completion within 6 years, (1 = yes, 0 = no).

Assumption 2: There is at Least One Continuous or Nominal Independent Variable

This study examined four independent variables: gender (nominal), race/ethnicity (nominal), age (continuous), and number of transfer credits accepted (continuous).

Assumption 3: There is an Independence of Observations

There is an independence of observations because the dichotomous dependent variable and nominal independent variables are mutually exclusive and exhaustive. The dichotomous dependent variable for this study was credential completion within 6 years (1 = yes, 0 = no). It is only possible for a student to be in one category – they graduated or not. Likewise, students are in one of two categories for gender (Male or Female). The race/ethnicity nominal independent variable was constructed in such a way that students belong to the White, Black, Hispanic, or Other Race category. If a student has more than one Race/ethnicity, such as Black and Asian American, they are categorized in Other Race.

Assumption 4: There is a Minimum of 15 Cases per Independent Variable

The final cleaned data set included 565 student records and each dummy variable contained more than 15 cases (see

Table **4**).

Table 4

Categorical Variables Frequency

Variable	Frequency
Race/ethnicity	
White	296
Black	173
Hispanic	49
Other races	47
Gender	
Female	348
Male	217

Assumption 5: The Relationship Between the Independent Variables and the Logit of the Dependent Variable is Linear

The chance that a Type I error (rejecting the null hypothesis incorrectly) increases when a researcher performs comparison tests multiple times (Emerson, 2020). Bonferroni suggested that researchers divide the planned error rate by the number of comparisons being made (Emerson, 2020). To test this assumption, the *p*-value 0.05 was divided by the seven variables analyzed to determine the new *p*-value = 0.007143. The logit transformation of the continuous independent variables age ($p = .013$) and number of transfer credits accepted ($p = .474$) were not significant, indicating a linear relationship, so the assumption was not violated.

Assumption 6: The Data Must Not Show Multicollinearity

Since the variance inflation factor (*VIF*) for the independent variables were all between 1.006 and 1.040 (see Table 5), considered a moderate correlation range, the data do not show multicollinearity.

Table 5

Variance Inflation Factor for Independent Variables

Variable	*VIF*
Gender	1.040
Race/ethnicity	1.009
Age	1.032
Number of transfer credits accepted	1.006

Assumption 7: There are No Inappropriately Influential Cases

There should be no significant outliers, high leverage points, or highly influential points. Cases with a standardized residual greater than 2.5 SD should be inspected and removed from the data set if necessary (Laerd Statistics, n.d.). There were no outliers greater than 2.5 SD and SPSS did not provide an output.

Research Question 1

RQ1: Do the completion predictor variables gender, race/ethnicity, or age predict credential completion within 6 years for TIS at PCC?

$H_0 1_1$: Gender is not a predictor of credential completion for TIS at PCC.

$H_a 1_1$: Gender is a predictor of credential completion for TIS at PCC.

$H_0 1_2$: Race/ethnicity is not a predictor of credential completion for TIS at PCC.

$H_a 1_2$: Race/ethnicity is a predictor of credential completion for TIS at PCC.

$H_0 1_3$: Age is not a predictor of credential completion for TIS at PCC.

$H_a 1_3$: Age is a predictor of credential completion for TIS at PCC.

A binary logistic regression was performed to determine if the input predictor variables gender, race/ethnicity, or age predicted 6-year credential completion for TIS at

PCC. The logistic regression model was statistically significant, $\chi^2(5) = 11.663$, $p = 0.04$. Since the p-value was < 0.05, the null hypothesis was rejected and one or more of the predictor variables was a predictor of completion. The result of the Hosmer-Lemeshow goodness of fit test for logistic regression determined the model was a good fit (p = 0.588) because $p > 0.05$ (Laerd Statistics, n.d.). The model explained 3.1% (Nagelkerke R^2) of the variance in credential completion. Nagelkerke R^2 was used to determine variance because it has a possible range 0 to 1 making the statistic easier to interpret than Cox Snell. The model correctly classified 75.8% of cases, sensitivity was 0.0%, specificity was 100.0%, positive predictive value was 0.0%, and negative predictive value was 75.7%.

Of the three predictor variables, the Black race/ethnicity was a statistically significant predictor of completion (see

Table 6) for TIS at PCC. **Error! Reference source not found.** shows the ratio of Black TIS completers to noncompleters is not comparable to the other race/ethnicity categories. Black TIS were 2.19 times more likely not to complete a credential (Exp (B) = 0.456) than White TIS. Only 16.8% of Black TIS completed a credential within 6 years, compared to 29.3% of White TIS (see **Error! Reference source not found.**). The remaining racial minority categories of TIS (Hispanic and Other Races) were not statistically significant predictors of completion compared to White TIS. The findings are unlike FTFT completion predictors for race/ethnicity in which all racial minorities (Black, Hispanic, Other Races) are statistically significantly less likely to complete a credential than White students (Causey et al., 2020; Yu, 2017).

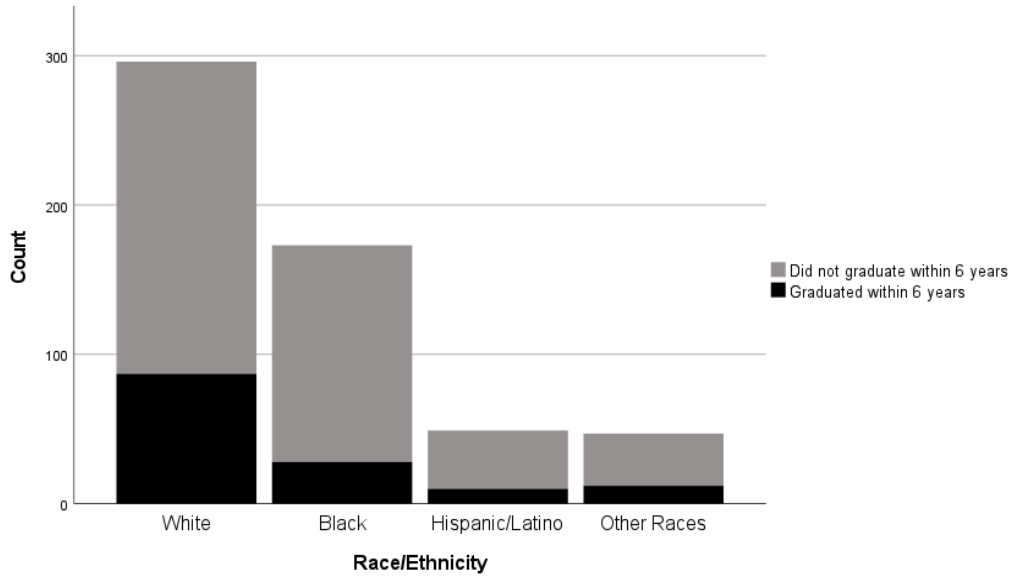
Table 6

Likelihood of Credential Completion Based on Gender (Baseline Female), Race/Ethnicity (Baseline White), and Age

Independent variable	*B*	*SE*	Wald	*df*	*p*	Exp(B)	95% CI for Exp(B)	
							Lower	Upper
Male	.055	.207	.070	1	.791	1.056	.704	1.584
Black	-.784	.248	10.037	1	.002	.456	.281	0.741
Hispanic	-.494	.379	1.698	1	.192	.610	.290	1.283
Other races	-.189	.358	.279	1	.597	.828	.410	1.670
Age	.008	.012	.413	1	.521	1.008	.984	1.031

Figure 3

Credential Completion vs. Noncompletion by Race/Ethnicity



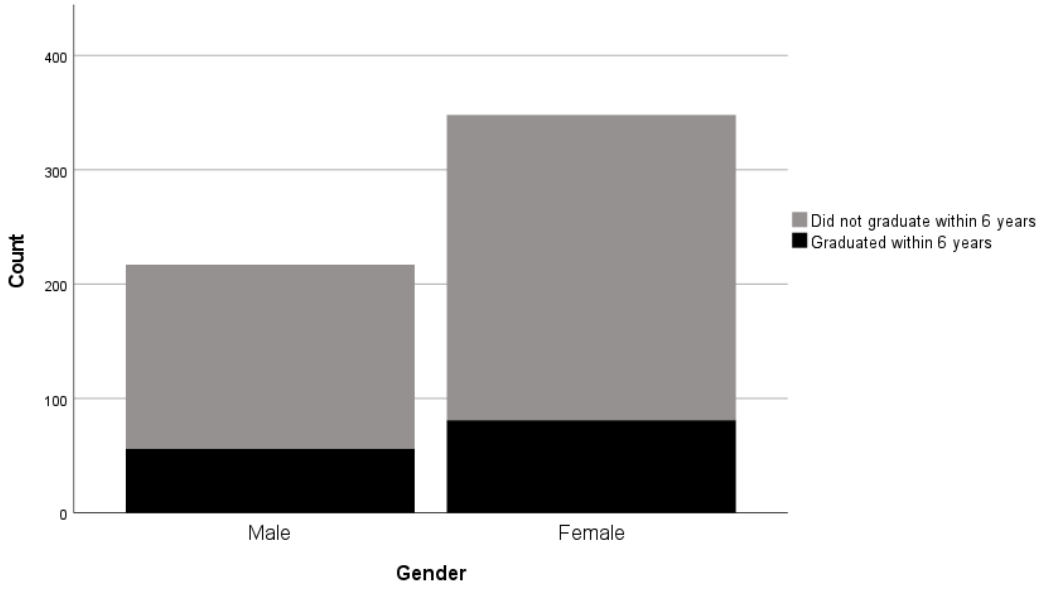
Since racial minorities are overrepresented at community colleges (Levin & Kater, 2018), the findings about completion predictors for TIS in this study are necessary to understand where inequities exist (Durosko, 2018). In fall 2020, 45% of PCC students were racial minorities (PCC, 2021a). This finding suggests PCC's policies are not

supportive of Black TIS. Improvements can be made to eliminate the substantial gap in completion rates between Black and White TIS at PCC.

Although documented as completion predictors for FTFT (Armbrust, 2019; Cardona et al., 2019; Yu, 2017), age and gender were not found to be significant predictors of completion for TIS. Even though not statistically significant, male TIS had a higher completion rate (25.8%) than female TIS (23.2%) at PCC (see **Error! Reference source not found.**), which is not typical of findings for FTFT (NCES, 2020c).

Figure 4

Credential Completion vs. Noncompletion by Gender



The TIS age group 25 to 35 had the lowest completion rate (see **Error! Reference source not found.**), whereas Armbrust (2019) found students age 28 to 33 were 7.279 times more likely to complete than traditional-age college students age 16 to 21. This difference may be related to the population of students in each study. Most TIS

credential completers earned an associate degree, while Armbrust's (2019) tudy was of students in a technical certificate program. Certificates were earned by only 18 of the 137 TIS students in the study. Certificate programs are focused on skills necessary to become employed after completion and typically do not include the general education core that associate degrees require. Students in certificate programs may have different motivations and characteristics than those in associate degree programs. Within the 25 to 35 age group that had the lowest completion rates, female TIS had a credential completion rate of 18.5% compared to 31.5% of male TIS the same age (see Table 7). These findings may suggest that female TIS of child-bearing age have obligations that take precedence over college enrollment.

Table 7

Credential Completion by Age and Gender

Age	Completed credential	No credential	Completion rate (%)
Under age 25			
Male	36	113	24.1
Female	48	141	25.4
Age 25 to 35			
Male	17	37	31.5
Female	20	88	18.5
Over age 36			
Male	3	11	21.4
Female	13	38	25.5

Research Question 2

RQ2: Does the number of transfer credits accepted predict credential completion within 6 years for TIS at PCC?

$H_0$2: The number of transfer credits accepted is not a predictor of credential completion for TIS at PCC.

H_a2: The number of transfer credits accepted is a predictor of credential completion for TIS at PCC.

A binary logistic regression was performed to determine if the environment predictor variable number of transfer credits accepted predicted 6-year credential completion for TIS at PCC. The logistic regression model was statistically significant, $\chi^2(1) = 18.918$, $p < 0.001$. Since the p-value was < 0.05, the null hypothesis was rejected and the predictor variable was a predictor of completion. The result of the Hosmer and Lemeshow goodness of fit test for logistic regression was $p = 0.751$. The model was a good fit because $p > 0.05$ (Laerd Statistics, n.d.). The model explained 4.9% (Nagelkerke R^2) of the variance in credential completion and correctly classified 75.6% of cases. Again, Nagelkerke R^2 was used to determine variance because it has a possible range 0 to 1 making the statistic easier to interpret than Cox Snell. Sensitivity was 1.5%, specificity was 99.3%, positive predictive value was 40.0%, and negative predictive value was 75.8%.

The number of transfer credits accepted was a statistically significant ($p < 0.001$) predictor of credential completion within 6 years; therefore, the null hypothesis was rejected. The likelihood of credential completion within 6 years increases by 1.03 for each transfer credit accepted (95% *CI* between 1.016 and 1.044). This may appear minor, but most college courses are 3 semester credits (Coursera, 2022), so transferring in one course gives the student a greater chance of completion. When credits a student earned at

another institution do not transfer, or transfer as electives instead of courses in the major, it increases the cost and time it takes for a student to earn a degree (Hodara et al., 2017). PCC cannot change the input characteristics of TIS but can change policy to improve TIS success.

Limitations of Research Findings

Approximately 40% of TIS in the study entered PCC with zero credits. Limitations of this study did not make it possible to understand whether this was due to varying factors: the student never submitted a transcript, the student did not earn credits at their previous institution(s), or the credits previously earned were not applicable to the student's major at PCC. In addition, without the ability to cross-reference student attendance at other institutions using the NSC, it is unknown whether a student in the study population transferred-out of PCC within the 6 years. It is possible a student who transferred-out then earned a credential at another institution.

Summary

A correlational design was employed in this study to determine whether input (gender, race/ethnicity, age) and environment (number of transfer credits accepted) variables predicted completion of a credential within 6 years for TIS at PCC. Both RQ1 and RQ2 were analyzed using logistic regression to predict the outcome of the dependent variable based on the independent variables (Cuttler, 2017). Secondary data from the 565 eligible TIS were examined in this project study. Of the TIS enrolled in fall 2013 (n = 565), 137 (24.2%) completed a credential within 6 years.

Of the three input predictor variables (gender, race/ethnicity, and age), Black TIS were 2.19 times more likely not to complete a credential than White TIS. Although documented completion predictors for FTFT, age and gender were not found to be significant predictors of completion for TIS. The number of transfer credits accepted was a significant predictor of credential completion for PCC TIS. The likelihood of credential completion within 6 years increases by 1.03 for each transfer credit accepted.

This project study specifically addresses PCC's strategic goal to "increase retention and completion of all students" and the strategic objective to "meet the expectations of students and stakeholders through data-driven strategies" (PCC, 2021b). A policy recommendation paper was selected for the project study to provide PCC with an evidence-informed analysis of the credential completion predictors for TIS and provide recommendations that may improve credential completion of TIS. The data and results indicate that common college completion predictors for FTFT were not predictors for TIS, suggesting that PCC should support TIS students in a focused way that will help them succeed. PCC cannot change the input characteristics of TIS, but can better support Black TIS in credential completion and review how transfer credits are accepted. The policy recommendations to support successful completion of TIS at PCC are detailed in Section 3.

Section 3: The Project

Introduction

The problem addressed through this study was that TIS at PCC have a completion rate lower than FTFT. The purpose of this study was to determine if the predictor variables common in college completion studies (Armbrust, 2019; Barbera et al., 2020; Yu, 2017) – gender, race/ethnicity, and age – were also predictors of credential completion for TIS at PCC. A variable unique to TIS, the number of transfer credits accepted, was also evaluated. Study findings are presented in the form of a policy recommendation to address the problem of lower completion rates among TIS at PCC. In Section 3, the rationale for the selection of a policy recommendation for the project and a description of the project, its goals, evaluation plan, and implications are presented. The Appendix contains the project study titled, *PCC Transfer-in Student Success.*

Rationale

A policy recommendation was most appropriate for this project study because it provides the reader with a background of the problem, summary of findings, and recommendations based on evidence from recent literature (Cheeseman et al., 2019; Leonard, 2018). Policy recommendations intentionally address an organization's mission and strategic goals (Leonard, 2018). This project study specifically addresses PCC's strategic goal to "increase retention and completion of all students" and the strategic objective to "meet the expectations of students and stakeholders through data-driven strategies" (PCC, 2021b). A policy recommendation also supports the U.S. Department of Education's recommendation that state governors facilitate transfer for students and

use data to inform decisions when promoting college completion initiatives (Baldwin, 2017a).

An evidence-based approach connects the research, practical knowledge, and policy (Beerkens, 2018). The project provides PCC with an evidence-informed analysis of credential completion predictors for TIS and provided recommendations that may improve credential completion of TIS. The data and results indicate that common college completion predictors for FTFT were not predictors for TIS, suggesting that TIS should be supported using practices different than FTFT. In addition, the finding that the number of transfer credits accepted was significantly tied to completion supports a change in the policy to transfer all acceptable credits toward a degree or certificate at PCC.

Project Description

Project Description

The policy paper developed from this study recommends that PCC leadership adopt recommendations to improve the completion rates for TIS. The implementation requires support and leadership from stakeholders across the college. Because the evidence showed success for Black TIS was significantly lower than White TIS and that the number of transfer credits accepted significantly predicted completion, current literature was used to identify recommendations that could improve the completion rates for Black and all TIS. Tinto's (1993) theory of student departure served as the framework for four recommendations identified through a literature review: provide a success coach for Black TIS, review how transfer credits are accepted, improve communication with TIS, and engage in consistent evaluation of TIS success. The policy recommendation

paper leads with an executive summary consolidating the problem and evidence and continues with description of the study's methodology and findings. The policy paper closes with the recommendations to improve completion rates for TIS at PCC as well as an implementation plan.

Project Goals

The project is a policy recommendation paper recommending PCC leadership adopt strategies to improve completion rates for TIS. This project study specifically addresses PCC's strategic goal to "increase retention and completion of all students" and the strategic objective to "meet the expectations of students and stakeholders through data-driven strategies" (PCC, 2021b). The policy recommendation paper contains a data-informed analysis of completion predictors for PCC's TIS and is the basis for recommendations to improve completion rates of TIS. The policy recommendations from this study had three goals to improve completion rates for TIS:

- communicate new completion data about TIS to PCC leadership
- provide recommendations to improve the transition experience for TIS
- suggest revisions to the transfer credit policy

Review of the Literature

Research for this literature review was collected using the following databases: Education Source, ERIC, SAGE Journals, Taylor and Francis, Academic Search Complete, ProQuest Dissertations and Theses, Google, and Google Scholar. The articles were restricted to those published since 2017. The following keywords were used for the search: *policy paper, policy recommendation, white paper, higher education reform,*

higher education policy, college policy, institutional change, stakeholder communication, evidence-based policy, policy implementation, and *policy evaluation.*

Policy Recommendation Papers

A policy recommendation paper, also known as a policy paper or white paper, is a persuasive essay that focuses on a specific problem and recommended solutions (Malone & Wright, 2018; Pershing, 2015). A policy recommendation should include evidence of the problem, a manageable amount of recommendations supported by research, and how each recommendation can be evaluated (Majchrzak & Markus, 2014; Malone & Wright, 2018). The results of this study are best shared using a policy recommendation paper since new evidence is presented and solutions to the local problem are based on research. In addition to feasibility of implementation, resource requirements and practicality of solutions should be considered when developing a policy recommendation (Majchrzak & Markus, 2014; Rigby et al., 2016). Therefore, the recommendations in this policy paper consider the limited human and financial resources at PCC by offering quick-wins and longer-term initiatives. Policy recommendation papers should motivate and encourage action from stakeholders (Christensen et al., 2020). The policy recommendation developed for this project study is expected to promote change in PCC's transfer policy to improve completion rates for TIS.

Evidence-Informed Policy Development

Policy recommendations relied on the study's evidence to support the strategies detailed in the policy paper. State and national efforts are focused on institutional accountability and degree completion (Baker & Doyle, 2017; Baldwin, 2017b; Laanan &

Jain, 2016; Wickersham, 2020). Research and data are often woven into the decision-making processes at colleges and universities, such is the case at PCC. Initiatives require a detailed analysis of the problem, backed-up by data to inform strategic objectives (Bojtor & Bozsó, 2020). The policy recommendation paper from this study includes the findings of TIS completion predictors at PCC to address the problem of lower completion rates for TIS compared to FTFT. The completion predictors for TIS are not currently evaluated or monitored at PCC. Success of TIS has not been a focus at PCC, but the findings from this study will create a culture of awareness not only of TIS, but intend to call attention to the existence of other groups of students at PCC besides FTFT. Data have the ability to influence beliefs and create a mutual understanding of phenomena (Beerkens, 2018).

Communication With Policymakers

The author must understand the audience and stakeholders when making policy recommendations and create an understanding of the problem and supporting evidence for the audience (Gorard et al., 2020). Cheeseman et al. (2019) suggested researchers work with policymakers to inform institutional practices. Often policy recommendations focus on quick-wins (Cheeseman et al., 2019), which is important given the limited resources available to community colleges. The limited resources available at PCC were considered as the policy recommendations were developed from this study. Some of the recommendations presented in this policy paper are considered quick-wins, implemented with minimal human or financial costs, but still have an impact on success. Other policy recommendations from this study require more of a time commitment and resource

reallocation or creation of new positions. Effective communication that considers each stakeholder's perceptions and expectations is critical to establishing the need for change (Bourne, 2016; Gorard et al., 2020) that extends beyond the quick-wins.

Policy recommendations are intended to be persuasive and motivational (Carrier, 2017; Christensen et al., 2020). To that end, Cairney and Kwiatkowski (2017) described psychological tactics to effectively communicate with policymakers. Because policymakers often have demanding schedules and review complex issues, the person presenting information to a policymaker should consider strategies to ensure facts are memorable. The paper should be concise to keep the reader's attention (Majchrzak & Markus, 2014; Malone & Wright, 2018; Pershing, 2015). Frequently, a policy paper begins with an executive summary highlighting key data and recommendations (Herman, 2018) because information at the beginning and end of a presentation are most memorable (Cairney & Kwiatkowski, 2017). Recommended communication strategies include using words and pictures to enforce key points, presenting material more than once, story-telling with specific examples, maintaining a coherent message, and considering the time constraints and energy level of the policymaker (Cairney & Kwiatkowski). Style plays a role in retention of information, such as use of fonts, colors, tables, and repeated use of text and images (Cairney & Kwiatkowski, 2017; Malone & Wright, 2018). Majchrzak and Markus (2014) agreed, suggesting the use of tables or diagrams to support main points. Since PCC leadership are responsible for instantaneous decisions and long-term strategic planning, the policy recommendations presented as a

result of this study will consider the aforementioned strategies to hold the reader's attention and provide critical information in an engaging and motivational manner.

Policy Evaluation

The goal of a policy recommendation is to improve the outcome of a problem or situation. To determine whether a policy is effective, consistent evaluation is necessary (Beerkens, 2018; Mead, 2021). Desired measures of success should be defined before implementing an policy-based initiative (Bojtor & Bozsó, 2020). One of the policy recommendations from this study includes consistent evaluation of TIS success, an outcome not currently monitored by PCC. Evaluation provides assurance that policy initiatives are making a positive impact (Beerkens, 2018). At PCC, the IR office is responsible for data analysis and program evaluation, a practice common at many postsecondary institutions (Hawkins & Bailey, 2020). Updates to student affairs practices are the basis for most policy recommendations in this project study. Outcome-based assessment in student affairs demonstrates a commitment to quality and support of the student (Henning & Roberts, 2016). An increase in completion rates for TIS upon implementation of the policy recommendations would indicate the policy is making an impact for TIS. Successful (or unsuccessful) strategies based on evaluation can be shared (Brock & Slater, 2021) among community colleges in PCC's state to increase college credential attainment of its citizens.

Theoretical Framework

Students make decisions daily about whether to stay in college, change schools, or change majors (Anderson, 2019). According to Tinto's (1993) theory of student

departure, the interaction between the student and college can determine whether a student continues to enroll at the institution. Tinto's model is similar to Astin's (1993) IEO model in that a student's background and connection with the college determines the outcome of college persistence (Tinto, 1993) or completion (Astin, 1993). Students cannot make it to graduation without persistence from term to term; therefore, the policy recommendations stemming from this project study are rooted in Tinto's framework.

TIS success is related to institutional practices (Jenkins & Fink, 2016) and innovative programs are necessary to close the gap between completion rates for TIS and FTFT (Knepfle & McCaskill, 2022). At many institutions TIS do not receive the type of support they need as resources are often focused on FTFT student needs and then applied to all students (Walker & Okpala, 2017). As college student populations become more diverse, institutions recognize that all students cannot be supported using the same methods and services (Mead, 2021). The policy recommendations from this study provide initiatives to address specific completion needs of TIS at PCC.

Recommendations

Recommendation 1: Provide a Success Coach for Black Transfer-in Students

As revealed in Section 2 of this project study, Black TIS at PCC were significantly less likely not to complete a credential than White TIS. This finding suggests PCC's current policies and practices are not supportive and disadvantageous to Black TIS. PCC faculty and staff view all strategic initiatives through a lens of equity and inclusion, thoughtfully considering how to eliminate achievement gaps by race/ethnicity.

Ignoring race/ethnicity in planning and policymaking cannot close the completion gap (Crisp et al., 2020; Mead, 2021) that exists for Black TIS at PCC.

Racial minorities are less likely to seek support because they believe they "don't really belong in college in the first place" (Daniels et al., 2019, p. 1). As less than half of racial minorities use support services such as advising, tutoring, and financial resources, a study by Daniels et al. (2019) focused on successful programs that decreased stigma of seeking academic, were scalable, and provided students with wrap-around support. One successful model occurred at South Texas College where tutors attended new student orientation and were invited to classrooms to introduce themselves and the service (Daniels et al., 2019). The meetings established an early connection with a person who was specifically there to help with classwork. In another model, intrusive advising including mandatory appointments, check-ins, and degree planning was found to be effective for racial minorities (Harrell, 2016). Paul D. Camp Community College (PDCC) in Virginia increased completion for underrepresented students (Pell-eligible, first-generation, or racial minorities) using a success coach model. Success coaches monitored student progress, tracked midterm progress, and provided holistic guidance to students (Daniels et al., 2019). Success coaches provided hands-on financial aid workshops, scholarship searches, exam study events, and access to basic needs. PDCC's success coach program resulted in 70% of students maintaining at least a 2.0 GPA and tripled the number of credentials completed in 3 years (Daniels et al., 2019). The PDCC model was implemented at nine other Virginia community colleges and resulted in a 3-year return on investment of $3 million due to student retention (Daniels et al., 2019). A dedicated

success coach with knowledge of transfer policies and procedures should be assigned to Black TIS at PCC to create a welcoming environment for this group of students who need additional support to be successful. The success coach would assist Black TIS with academic planning, interventions, financial aid and scholarship applications, and connect students to resources such as tutoring, computer labs, and basic needs (Daniels et al., 2019).

Recommendation 2: Review how Transfer Credits are Accepted

Transfer of credit from one institution to another is important to a transfer-in student's completion timeline and budget (Hodara et al., 2016, 2017). The AACRAO Transfer Student Bill of Rights declares that students should "enjoy the maximization of available credit in transfer in support of reduced cost to students and the most efficient time to degree completion" (AACRAO, n.d., p. 1). A study of the experiences TIS at a historically Black college and university (HBCU) yielded the following comment during an interview with a student: "I'm going to see what [another university within the same city] will accept. I said if they will accept more of my courses, I said [this university] can kiss me goodbye for the fall because it don't make no sense to me to have to take it over. I have gotten student loans that I got to pay back" (Walker & Okpala, 2017, p. 40). In another study, a student had 18 credit hours that did not transfer, and to maintain the desired graduation timeline the student had to take more credits than planned each semester and enroll in summer classes (Daddona et al., 2019). As community colleges face enrollment declines (Marcus, 2022), increasing the number of transfer credits accepted can be used as an enrollment management strategy. TIS may select an

institution based on who accepts the most transfer credits to lower the cost and timeline for a credential.

The number of transfer credits accepted is often studied as a bachelor's degree predictor variable for students who transferred from a 2-year to 4-year institution (Hodara et al., 2017; Monaghan & Attewell, 2015) and was examined in this study because current literature about transfer-in to community colleges does not exist. Monaghan and Attewell (2015) found the number of credits transferred was a positive predictor of bachelor's degree completion. Hodara et al. (2017) found students who had all or most of their credits transferred had 2.5 times greater likelihood of bachelor's degree completion than those who had less than half of their earned credits transfer. The results of this study showed that the number of transfer credits accepted is also a predictor for TIS at PCC. For each credit transferred, a TIS has an increased chance of completion. PCC cannot control how many transfer credits a student earns before enrolling in PCC, but the number of transfer credits accepted by PCC is a variable PCC can control within state regulations. External factors including state requirements and national recommendations play a role in how credits are allowed to be transferred (Hodara et al., 2017; Reilly et al., 2017; Taylor & Jain, 2017). PCC's transfer-in policy should be reviewed to maximize acceptance of transfer credits to demonstrate an institutional commitment to assisting TIS in meeting their completion goals.

Many TIS entered PCC with zero transferred credits. Limitations of this study did not make it possible to understand whether this was due to varying factors: the student never submitted a transcript, the student did not earn credits at their previous

institution(s), or the credits previously earned were not applicable to the student's major at PCC. Once transcripts are received, PCC should consider evaluating all credits instead of those required for the transfer-in student's major at the time the transcripts were received. When credits a student earned at another institution do not transfer, or transfer as electives instead of courses in the major, it increases the cost and time it takes for a student to earn a degree (Hodara et al., 2017). A student may have earned 30 credits at another institution, but only 12 credits transfer into the new major at PCC. The analysis in Section 2 found the likelihood of credential completion within 6 years increases by 1.03 for each transfer credit accepted. This may appear minor, but most college courses are 3 semester credits (Coursera, 2022), so transferring in one course gives the student a greater chance of completion.

Since a third of all undergraduates switched majors within the first 3 years (Liu et al., 2021), transferring all acceptable credits allows students to conduct "what-if" scenarios with various majors to determine the fastest path to graduation. Transfer credits are not automatically re-evaluated after a student changes their major. By accepting all previous credits allowed within state regulations, the student or advisor can make decisions about the fastest path to completion using "what-if" scenarios without needing to request a re-evaluation. In addition, this policy recommendation ensures students do not repeat coursework at PCC that was already completed at another institution, keeping the cost of a credential down. This policy is also beneficial for transcript evaluators because they would not have to re-evaluate a transcript at a later time because the student changed their major.

Recommendation 3: Improve Communication With Transfer-in Students

According to Tinto's (1993) theory of student departure, the interaction between the student and college can determine whether a student continues to enroll at the institution. At many institutions TIS do not receive the type of support they need since resources are often focused on FTFT student needs and then applied to all students (Walker & Okpala, 2017). One of five elements of a transfer receptive culture is to provide outreach and resources that focus on the specific needs of TIS (Jain et al., 2016).

TIS need timely information to make sound decisions about course scheduling and degree planning. AACRAO advocates for the "right to clear, complete, and accessible information about how prior learning credit will be accepted and applied to degree requirements in their select program of study" in the Transfer Student Bill of Rights (AACRAO, n.d., p. 1). Schudde et al. (2020) found that many students have incomplete or inadequate information regarding transfer. This finding was also highlighted in a U.S. 2017 U.S. Government Accountability Office (GAO) report about transferring college credits. The GAO found disparity in the access to and value of public information about transfer and transfer advising. Students notice when the transfer process is difficult to navigate and want information that is readily available, clear, and accurate (Nuñez & Yoshimi, 2017; Schudde et al., 2020). Although TIS already have college experience, nomenclature and navigation of the campus and policies have to be relearned at a new institution (Walker & Okpala, 2017). This policy recommendation suggests three activities to improve outreach via communication with TIS at PCC:

Remind TIS to submit official transcripts, provide TIS access to accurate information, and successful TIS share tips with new TIS at PCC.

Reminder to Submit Official Transcripts

PCC's admissions or registrar's offices do not proactively encourage students to claim credit from other colleges. A TIS is expected to know to send transcripts or be told during an optional academic advising session. PCC should develop a communication plan to remind TIS to send official transcripts to get credit for what they have already accomplished. PCC's policy is to send correspondence through college email, but texting is available and should be utilized in addition to email and alerts in the student portal.

Provide Access to Accurate Information

Webpage. The transfer-in webpage should be reviewed to ensure accurate and useful information is provided in a way that is understood by students. Schudde et al. (2020) used a rubric to conduct a review of transfer information on institution websites. Two-thirds of the colleges reviewed fell below the desired standard of information that is intentional and useful for students. Students in an earlier study experienced problems simply understanding the information provided on websites (Margolin et al., 2013). A policy recommendation from this study is that PCC examine information found on the transfer-in webpage and materials. The review should ensure all relevant information is present, links work, contact information is correct, and should include a usability test performed by TIS (Schudde et al., 2020; Sibonga, 2020).

Transfer Equivalency Database. PCC is fortunate to have a public database of how courses transfer-in to PCC that can be used by TIS, but it is not complete or

maintained on a regular basis. An essential task to ensure the accuracy of information on the transfer-in webpage is to review and update the database so students can determine how credits transfer while awaiting an official evaluation. In fact, the American Council on Education's National Task Force on the Transfer and Award of Credit (2021) recommends information about how credits transfer be made available before a student even chooses to enroll in an institution or reasons why credit will not transfer.

Share Tips From Successful Transfer-in Students

TIS were less likely to attend events or join students clubs so inventive ideas are necessary to reach this student population (Daddona et al., 2019). In at least one study, TIS appreciated orientation presenters who could provide first-hand knowledge of how to navigate the transfer-in process to become successful students (Jain et al., 2016). These findings suggest the need for a campus culture of welcoming TIS in ways that will be impactful for their success, namely learning from other successful TIS. This policy recommendation proposes TIS share their experiences and tips for the transition via a short video or set of videos to orient new TIS to PCC. Grites (2021b) recommends a video by a student who previously attended the same institution, which may be a long-term goal toward welcoming TIS to PCC, but not necessarily a priority for implementation due to limited resources.

Recommendation 4: Engage in Consistent Evaluation of Transfer-in Students

Consistent evaluation of TIS success facilitates the continuous improvement of services and supports PCC's strategic objective to meet the expectation of students and stakeholders through data-driven strategies. This policy recommendation suggests two

activities to regularly evaluate TIS success at PCC: conduct consistent evidence-informed assessment of TIS success and conduct a qualitative study of TIS experiences at PCC.

Evidence-Informed Assessment

PCC's IR office should consistently evaluate and share completion and retention data for TIS. This serves the purpose of evaluating the effectiveness of the policy recommendations outlined in this project study as well as keeping PCC leadership informed about the success of almost a quarter of new students who seek to earn a credential at PCC. Moreover, PCC will demonstrate that TIS are as important as FTFT by monitoring retention and completion outcomes, normally evaluated and required only for FTFT. Creating a culture of TIS acceptance and support relies upon sharing of information about this student population.

Qualitative Study of Transfer-in Student Experiences

TIS have different needs than FTFT to acclimate to a new college campus (Daddona et al., 2019; Jenkins & Lahr, 2022). The Noel-Levitz (2013) study of attitudes and motivations of college transfer students indicated that the first step to supporting TIS is to understand their attitudes and motivation, then develop initiatives to support their unique needs. Yet, TIS still experience "institutional neglect" when arriving at a new institution (Nuñez & Yoshimi, 2017, p. 181). Walker and Okpala (2017) interviewed TIS at a small 4-year college. One student summarized the feeling of invisibility on campus: "Overall, there is work to be done in making sure that transfer students feel a part of the student body. I feel as if I am dangling out here on my own" (Walker & Okpala, 2017, p. 41).

A qualitative study should be conducted to examine the experiences of TIS at PCC. Student experiences and outcomes of 2-to-2-year (lateral) and 4-to-2-year (reverse) transfer have not been studied, particularly across race/ethnicities (Crisp et al., 2020). This is of specific importance for PCC considering study findings showed Black TIS are less likely to graduate than White TIS.

Required Resources and Support

The policy recommendations are tangible with the addition or reallocation of two support positions: a success coach for Black TIS and an additional transfer credit evaluator to support the evaluation of all credits and maintenance of the public transfer course database. PCC already employs student ambassadors to help welcome new students. Hiring student ambassadors who transferred-in to PCC would provide the engagement with peers that is desired by TIS. The marketing department would assist in filming the transition tip videos. The admissions and registrar's office can send reminder emails to send official transcripts and review the transfer-in website with a few TIS and make updates as needed. The IR office should be fully staffed to complete regular evaluation of TIS success. Additionally, PCC has the necessary technology and expertise to implement the policy recommendations.

Roles and Responsibilities

First, PCC leadership needs to communicate the importance of TIS support and create a culture of inclusion. The admissions and registrar's office can send reminder emails to send official transcripts and review the transfer-in website with a TIS and make updates as needed. Engagement is especially critical for Black TIS and a success coach

could serve as the central source for support during their transition to PCC. The success coach would assist Black TIS with transfer credit questions, academic planning, interventions, financial aid and scholarship applications, and connect students to resources such as tutoring, computer labs, and the food pantry. The dean of student success will be responsible for creating a job description, receiving approval from PCC's president and vice presidents, and starting the hiring process with human resources. The student ambassador program manager should specifically recruit ambassadors who were TIS to provide tips for a successful transition via short videos. The marketing department would assist in recording the videos. PCC recently invested in a transcript capture system that facilitates the evaluation of college transcripts, thus making it possible to evaluate entire transcripts, but requires that the course equivalency database is accurate and complete. An additional transfer credit evaluator would assist with the increased volume of course equivalency reviews and maintain the internal and public-facing database of equivalencies. The registrar will be responsible for creating a job description for the position, receiving approval from PCC's president and vice presidents, and starting the hiring process with human resources. With full-staffing in the IR office, regular evaluation of TIS completion and surveys can occur.

Implementation Plan and Timeline

The policy recommendations do not require approval from a collegewide committee, only from the supervising vice presidents of each division involved. The implementation falls within the responsibilities of the student services division and IR department. First, the dean of students should create a job description for the Black TIS

success coach and the registrar should create a job description for an additional transfer credit evaluator who will maintain the course equivalency database. Upon review and approval for the new positions or reallocation from vacant positions, the human resources office will advertise the position. A search committee will be formed for each position.

While awaiting approval for the positions, the admissions and registrar's office should create a communication to remind TIS to send official transcripts for evaluation. Simultaneously, the admissions and registrar's offices should review information on the transfer-in webpage for accuracy and student-friendly terminology.

Upon hire of an additional transfer credit evaluator, the registrar's office should begin transferring all credit (within state and institutional regulations) from a transfer-in student's transcript. This allows the academic advisor and student to have a full picture of the student's academic history to determine whether there may be a faster path to a degree or certificate.

Upon hire of the success coach, the IR and admissions offices can develop a reporting structure to facilitate the advising assignment of Black TIS to the success coach. The success coach would begin outreach to students in their caseload. Finally, the IR office will need to schedule regular assessment of TIS success. The methodology from this study can be used as the template for quantitative data analysis, while a survey to capture TIS experiences and needs would be developed by IR.

Potential Barriers and Barrier Mitigation

A very real barrier to the implementation of the policy recommendation is the PCC's limited budget and human resources. The budget likely cannot accommodate the

creation of two new positions, but PCC could reallocate positions that have been vacant because jobs have changed due to the pandemic. Another barrier may be in working with the marketing department on TIS success tips videos. The marketing department may want to script the videos, but students want to hear a candid message from peers (Swett, 2016). If this becomes a barrier to effective implementation, the student ambassador department could record the videos themselves without the assistance of the marketing department.

Project Evaluation Plan

The primary goal of the PCC TIS policy paper is to improve completion rates for TIS. The effectiveness of the policy will be evaluated by monitoring the completion rate of TIS. All recommendations will likely not be adopted simultaneously due to differences in the nature and complexity of the recommendations; however, outcome-based evaluation can begin after quick-wins such as improvements in communication are implemented. Cousins et al. (2014) recommend to conduct and use effective evaluations (PCC, 2021b). The project will be recognized as a success with adoption of all policy recommendations and an increased completion rate for TIS at PCC.

Recommendation 4 is essentially the project evaluation plan. This recommendation is for PCC to engage in consistent evaluation of TIS success through quantitative and qualitative studies not currently conduced at PCC. While a complete evaluation cannot be conducted until 6 years after full implementation of all recommendations, the IR office can begin monitoring completion rates of TIS on the same schedule as FTFT. PCC's IR office should consistently evaluate and share

completion and retention data for TIS. This serves the purpose of evaluating the effectiveness of the policy recommendations outlined in this project study as well as keeping PCC leadership informed about the success of TIS, who represent almost a quarter of new students who seek to earn a credential at PCC. Moreover, PCC will demonstrate that TIS are as important as FTFT by monitoring retention and completion outcomes, normally evaluated and required only for FTFT. Comparing student experiences before and after implementation of recommendations using a qualitative study is another evaluation that will measure the effectiveness of the policy. Creating a culture of TIS awareness and support relies upon sharing of information about this student population.

Project Implications

Implications at the Local Level

The primary goal of this project study was to provide PCC leadership with data about completion predictors of TIS and recommendations of services to improve completion rates of TIS. An analysis of PCC TIS student data provided insight into the variables that are significant predictors for completion among this student population. Implementation of recommendations based on a literature review could lead to improvements in communication with and services for TIS, which could lead to increased completion for TIS at PCC. The policy paper will establish an awareness of TIS completion outcomes beyond just those working in enrollment and transfer-related positions.

Implications in the Larger Context

Previous studies about transfer-in to a community college were limited or are now outdated (Baldwin, 2017a; Taylor & Jain, 2017). Grites (2021a) suggests that TIS are often ignored by administrators and faculty because they are not included in retention and completion metrics that are important to colleges for funding and rankings. Several authors called for current research into completion predictors for TIS as college students become more mobile and need to transfer credits between institutions (Katsinas et al., 2019; Shapiro et al., 2018; Taylor & Jain, 2017). The American Council on Education (ACE) advises that by eliminating barriers to TIS completion, institutions can help strengthen trust in a college education and "reaffirm its value as an engine of economic and social mobility and justice (ACE, 2021, p. ix).

Findings from this study indicate an equity gap amongst completion rates of Black and White students. Closing gaps in outcomes between racial minority groups and White peers is a focus of community colleges nationwide (Brock & Slater, 2021; Crisp et al., 2020; Kruse et al., 2018; Mead, 2021; Taylor & Jain, 2017). The equity gap must be eliminated to provide the means for all citizens to be successful and gainfully employed through the opportunities provided by a college education. When stakeholders work together to impact change with a positive outcome, it instills a sense of accomplishment and responsibility and encourages further change movements (Kruse et al., 2018).

Section 4: Reflections and Conclusions

Project Strengths and Limitations

PCC supplied data about TIS enrolled in fall 2013 and completion within 6 years. The data were analyzed in RQ1 to determine whether completion predictor variables typical of FTFT were also predictors for TIS. The results of the study showed that students of Black race/ethnicity were less likely than White students to complete a credential within 6 years. RQ2 analyzed whether the number of transfer credits accepted, a completion predictor for 2-to-4-year transfer was significant for TIS at PCC. The number of transfer credits accepted was found to be a significant predictor of credential completion for TIS. The study findings are communicated in a policy recommendation paper along with recommendations based on best practices and research findings to improve completion rates for TIS at PCC.

Project Strengths

This project study was critical to address a gap in practice at PCC and shed light on shortcomings in PCC practices and strategies related to student completion. Project strengths included using current data specific to TIS at PCC and adds to the dialog about student completion at PCC. Because the data are based on PCC students instead of a national database, PCC leadership can be assured that the results are directly reflective of PCC students. The findings from this study also contribute to the broader examination of student completion of community college students.

Project Limitations

This study was the beginning of understanding the PCC TIS population; as such, there were limitations associated with the study. NSC data were not used to determine if 4-year to 2-year transfers were true reverse transfers seeking a PCC credential or whether the student attended in fall 2013, selected a degree program only for financial aid purposes, and then returned to the 4-year institution. Including students in the study who never intended to earn a PCC credential, despite declaring such on the application, could have artificially lowered the completion rate. Many TIS entered PCC with zero transfer credits accepted; however, it was unknown whether this was because the student never submitted transcripts, had not earned credits at the previous institution, or completely changed their major when transferring and the credits were not applicable to the PCC major (PCC only transfers credits required for the major). In addition, without the ability to cross-reference student attendance at other institutions using the NSC, it is unknown whether a student in the study population transferred-out of PCC within the 6 years. It is possible a student who transferred-out then earned a credential at another institution. The limitations of this study provide direction for future studies of TIS at PCC and elsewhere.

Recommendations for Alternative Approaches

An examination of a sample of student transcripts from the previous institution(s) and PCC is an alternative approach to this study design. By examining student transcripts, it would resolve the question of whether the student earned credit at the previous institution, changed majors, or never submitted a transcript. The student information system does not store the data necessary to do this with a query. This

approach would be manual and time-consuming and would be feasible using only a sample of TIS.

Another approach to study ways to better support TIS is through a qualitative study, which was also a recommendation in the resulting policy paper. A qualitative study of TIS who completed a credential could examine the experiences, challenges, and barriers of transfer to PCC. Student experiences and outcomes of transfer to a community college have not been studied, particularly across race/ethnicities (Crisp et al., 2020). This is of specific importance for PCC considering study findings showed Black TIS are less likely to graduate than White students.

Scholarship, Project Development and Evaluation, and Leadership and Change Scholarship

I chose Walden University's Doctor of Education in community college leadership to advance my knowledge of community college challenges and promising practices. Through the required coursework, I learned how to use evidence to justify strategies for enacting social change. Instead of writing papers related to my project study topic during coursework, I decided to invest my time in researching topics that I knew I needed to learn more about as a practitioner. I gained valuable leadership skills and worked with an encouraging group of peers and faculty. As I reflect on my growth professionally and as a researcher, I am convinced I have the tools to be an effective practitioner who can enact change for the betterment of community college students.

Project Development and Evaluation

The Walden residency at the beginning of my studies clarified much of the prospectus and proposal processes. Although I chose a different topic than I used in residency, I was encouraged to decide on a real topic quickly so I could start researching existing literature. That advice was invaluable, and by the time I was writing the prospectus, I had much of the literature I needed to begin to address a local problem. As I learned more about my topic, I was able to establish recommendations to improve the completion rate for TIS at PCC. Lower completion rates for TIS than FTFT is not unique to PCC. A policy recommendation provides the evidence-based foundation to create sustainable change for TIS at PCC. An improved 6-year completion rate for TIS, especially Black TIS, would be evidence that the policy recommendations impacted change. Although overall effectiveness cannot be determined for 6 years after full implementation, annual assessment of completion rates will allow PCC leadership to monitor progress.

Leadership and Change

Implementation of the recommendations in this policy paper requires the support of PCC leadership. Leadership must communicate the evidence and the need for change. However, the staff stakeholders must assume leadership roles to implement the procedures and practices that support the policy changes (Frantz et al., 2020). As a scholar-practitioner, I have learned how to identify a problem, find evidence that supports a need for change, and communicate the need for change to senior leadership. I intend to serve as a champion for student success for all students, beginning with promoting better

assessment and services for TIS. I will work with the stakeholders to understand the results of this study and the literature that has supported the recommendations.

Reflection on Importance of the Work

Because of the open-access and lower cost of attendance, community colleges appeal to students with diverse academic and socioeconomic backgrounds, attracting students whose life situations require convenience and flexibility (Cohen et al., 2014; Laanan & Jain, 2016; Levin & Kater, 2018). The underlying mission of community colleges is to serve the students most in need of higher education to secure a better economic future (Brock & Slater, 2021). The shorter timeline to complete an associate degree or certificate appeals to students who need to enter or reenter the workforce and earn more than someone with only a high school diploma (Kamer & Ishitani, 2020). National efforts are focused on institutional accountability and student success outcomes to control student debt and increase degree completion in the United States (Baldwin, 2017a; Laanan & Jain, 2016; Wickersham, 2020).

Implications, Applications, and Directions for Future Research

Implications

The completion rate for TIS at PCC is low compared to FTFT. The findings from this study led to recommendations that may improve the completion rate for TIS at PCC and create a campus commitment to the success of this group of students. Both Astin (1993) and Tinto (1993) suggested the way a student interacts with the college environment has an impact on whether the student will be retained (Tinto) or complete (Astin). When implemented, the recommendations in this policy can improve the

completion rates for TIS, who for whatever reason, were unable to complete a credential at their previous institution.

This study intentionally excluded data from COVID years. With almost every college in the United States moving to a remote learning environment and possibly keeping that modality going forward even when classes are back on campus, it will be even easier for students to be mobile and collect credits from many colleges. This could increase the number of TIS at our institutions.

Applications

Other student groups, such as military or adult learners at PCC, may be unstudied or understudied in regard to completion predictors. This study can serve as a template for identifying completion predictors for other student groups to determine where improvements should be made. In addition, other community colleges may be struggling with low completion rates for TIS. Successful initiatives from this study can be shared with other community colleges to increase the completion rate for students across the United States.

Directions for Future Research

Completion predictors for TIS have not been studied since Bahr's (2009, 2012) studies of lateral transfer students in California. This study was an exploratory study of completion predictors for TIS at one community college. Future research could focus on other completion predictors, such as major or field of interest/metamajor, previous type of college attended (2-year or 4-year), developmental English and math completion, credit English and math completion, previous GPA, or Pell grant status. The predictors

variables could also be used to study retention from term-to-term instead of completion. A study could use NSC data to determine if the noncompleters transferred-out and graduated from another institution. A review of individual transcripts to determine whether zero credits were transferred because the student had not earned credit at the previous institution or whether the student changed majors and credits were no longer applicable. Another study could also determine which classes are still needed for the noncompleters in an attempt to reach out to complete a credential.

Conclusion

This project study was motivated by the lower completion rates for TIS than FTFT at PCC. As a community college practitioner, I am driven by the desire to help students who, without a community college, may otherwise never complete a college degree. My coursework and doctoral committee at Walden University prepared me to develop a research study, analyze the results, and make recommendations for social change based on evidence. The education I received at Walden University taught me how to conduct research and use results to further academic success for students at PCC. I will share the policy recommendations with PCC leadership and expect to be able to work with stakeholders to implement the quick-wins within the recommendations. This project study may contribute to the scholarly literature about community college TIS and may benefit other community college TIS as a result.

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Appendix: The Project

PCC Transfer-in Student Success

Prepared by Erin K. Reeder, M.S., Doctoral Candidate November, 2022

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Executive Summary

Introduction

Peninsula Community College (PCC) has strategic goals and objectives to:

increase retention and completion of all students.

meet the expectations of students and stakeholders through data-driven strategies.

Students with some college credits but no degree are closer to the finish line than first-time, full-time students (FTFT), thereby making transfer-in students (TIS) a desirable population to target for completion initiatives. Because of the increased mobility of U.S. college students, understanding the completion predictors of TIS will help PCC leadership make data-informed decisions related to the specific needs of TIS at PCC.

The Problem

PCC reported to IPEDS that 24% of all new PCC students in fall 2020 were credential-seeking TIS. Unfortunately, the completion rate for credential-seeking TIS is lower than for FTFT at PCC. Studies about students who transfer-in to a community college remain limited or outdated. Transfer student research is predominantly focused on bachelor's degree completion predictors and the experiences of students who transferred vertically from a community college to a 4-year institution. To adequately support and improve completion of TIS at PCC, completion predictors for TIS must be understood. This study determined whether common college completion predictors - gender, race/ethnicity, age, and/or

	6-Year Completion Rate (%)	
Start Term	Transfer-in	FTFT
Fall 2014	23.1	34.7
Fall 2015	24.5	33.1
Fall 2016	24.0	40.0

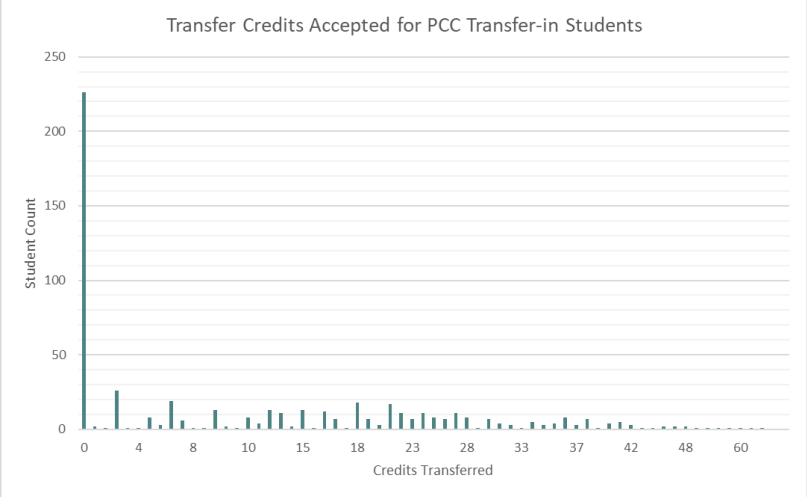
number of transfer credits accepted - predicted credential completion for TIS at PCC. The number of transfer credits accepted is often studied as a bachelor's degree predictor variable for students who transferred from a community college to 4-year institution.

Data-Driven Evidence

The study's findings indicate that TIS at PCC are unlike FTFT. Of the traditional FTFT completion predictors evaluated in this study (gender, age, and race/ethnicity), Black TIS were significantly less likely to complete a credential than White TIS. The one study variable that PCC can control – the number of transfer credits accepted – was also found to be a significant predictor of credential completion. The likelihood of credential completion within 6 years increased by 1.03 for each transfer credit accepted. This may appear minor, but most college courses are 3-4 semester credits so transferring in additional courses gives the student a greater chance of completion. By far, 0.0 was the most common number of credits accepted for PCC TIS.

I'm going to see what [another university within the same city] will accept. If they will accept more of my courses, [this university] can kiss me goodbye...

-Transfer-in student
(Walker & Okpala, 2017)



Recommendations

1. **Provide a Success Coach for Black Transfer-in Students**

   A dedicated success coach with knowledge of transfer policies and procedures should be assigned to Black transfer-in students.

2. **Review how Transfer Credits are Accepted**

   Transfer credit procedures should maximize credit acceptance to reduce cost and time-to-completion.

3. **Improve Communication with Transfer-in Students**

   Transfer-in students should not feel isolated or neglected in their transition and acclimation to PCC.

4. **Consistently Evaluate Transfer-in Student Success**

   Just as PCC regularly monitors success of FTFT and part-time students, TIS success should be routinely monitored. PCC also needs to identify what our TIS need for success through qualitative studies.

Final Thoughts

Adopting the recommended TIS success policy demonstrates the PCC's commitment to students and stakeholders to use data to increase completion for ***all*** students. This policy recommendation demonstrates a commitment to a transfer receptive culture. TIS have different needs and experiences than traditional FTFT. This policy is tangible with the addition or reallocation of two support positions.

Introduction

Associate degree or certificate (credential)-seeking students who transferred from another postsecondary institution to a community college without a previous degree, referred to as TIS, were the focus of this study. The increasing diversity of student paths through higher education, including various transfer possibilities, has implications for institutional and student success (Crisp, 2016; Wang et al., 2016). Researchers recommend higher education professionals develop an awareness of students who do not follow a traditional path through higher education and adopt strategies to facilitate student transfer and credential completion (Bahr, 2011; Baldwin, 2017b; Katsinas et al., 2019; Taylor & Jain, 2017). TIS with some college credits but no degree are a logical target population to increase completion (Baldwin, 2017a; Institute for Higher Education Policy, 2011).

The Problem

PCC data reported to IPEDS revealed that 24% of all new PCC students in fall 2020 were TIS. The completion rate for TIS is lower than for FTFT at PCC (see Table 1). Nationwide, TIS are largely unsupported and insufficient attention is given to transfer student experiences and transfer policy to support degree completion (Gardner et al., 2021; Katsinas et al., 2019; Taylor & Jain, 2017; Tett et al., 2017; Welsh et al., 2020). As evidenced by the lower completion rates of TIS at PCC, college leadership have an opportunity to improve services and initiatives to support credential completion of TIS.

Table 1

Six-Year Completion Rates for Transfer-in and First-time, Full-time Students at Peninsula Community College

Start term	6-year completion rate (%)	
	TIS	FTFT
Fall 2014	23.1	34.7
Fall 2015	24.5	33.1
Fall 2016	24.0	40.0

Note. TIS = transfer-in students; FTFT = first-time, full-time students.

Studies about students who transfer-in to a community college remain limited or outdated. Transfer student research is predominantly focused on bachelor's degree completion predictors and the experiences of students who transferred vertically from a community college to a 4-year institution. To adequately support TIS completion at PCC, completion predictors for TIS must be understood. This study determined whether common college completion predictors - gender, race/ethnicity, age, and/or number of transfer credits accepted - predicted credential completion for TIS at PCC. The number of transfer credits accepted is often studied as a bachelor's degree predictor variable for students who transferred from a community college to 4-year institution.

The Purpose

The purpose of this quantitative study was to determine if the variables gender, race/ethnicity, age, and/or number of transfer credits accepted, predict credential completion for TIS at PCC. The student input (demographic) completion predictor variables for this study were selected based on Astin's (1993) input-environment-

outcome (IEO) framework and are common predictors in other studies of undergraduate completion (Armbrust, 2019; Barbera et al., 2020; Causey et al., 2020; Ocean & Hicks, 2021; Yu, 2017). PCC cannot control student demographics, but can address the college environment to improve outcomes. The variable in this study representing PCC's environment for TIS was the number of transfer credits accepted, commonly studied for traditional community college to 4-year transfer (Hodara et al., 2017; Monaghan & Attewell, 2015). To adequately support TIS completion at PCC, completion predictors for TIS must be understood.

Methodology

Research Questions

The following research questions were used to guide this study:

RQ1: Do the completion predictor variables gender, race/ethnicity, or age predict credential completion within 6 years for TIS at PCC?

RQ2: Does the number of transfer credits accepted predict credential completion within 6 years for TIS at PCC?

Study Design

A correlational design was employed in this quantitative study to determine whether input (gender, race/ethnicity, age) and environment (number of transfer credits accepted) variables predicted completion of a credential within 6-years for TIS at PCC. A correlational design was selected to answer the RQs because it describes the strength and direction of the relationship between two variables that cannot be manipulated by a researcher (Cuttler, 2017). Current research about completion predictor variables for TIS

does not exist, so completion predictor variables for FTFT college students were selected for this project study (Armbrust, 2019; Barbera et al., 2020; Causey et al., 2020; Ocean & Hicks, 2021; Yu, 2017). This project study did not include commonly studied predictor variables for high school GPA, SAT, or ACT because TIS are not required to submit these assessment results if college English and math were completed at another institution (PCC, n.d.-a). The dependent variable, or outcome pillar, is completion of an associate degree or certificate after 6 years. Six years was selected to mirror previous completion studies (Bahr, 2009; Causey et al., 2020; Juszkiewicz, 2017; Yu, 2017). Both RQ1 and RQ2 were analyzed using binary logistic regression to predict the outcome of the dependent variable based on the independent variables.

Evidence-Informed Literature

Theoretical Framework

Astin's (1993) IEO framework is based on the concept that a student's success is a function of the student's background, characteristics, and perceptions held by the student before enrolling and experiences the student has while attending college. The input pillar used variables to describe the person before enrolling in the institution. The environment pillar represented the experiences and interactions a student had with the institution's programs, people, and policies. The outcome pillar used variables to describe the characteristics of the student at milestones and upon leaving the institution. In essence, Astin used the equation *input + environment = outcome* to describe the impact of college on a student.

The format of this literature review is reflective of Astin's (1993) IEO framework and is organized by Astin's three pillars: input, environment, and outcome. First, the input predictor variables related to student demographics are presented. Next, the number of transfer credits accepted is discussed as the environment variable. Finally, the outcome of credential completion is presented.

Input: Community College Student Demographics

Following Astin's (1993) IEO framework, student demographics (input) were examined as predictor variables of completion for TIS at PCC. The predictor variables in this project study were not exhaustive, but are common in community college completion studies (Armbrust, 2019; Barbera et al., 2020; Yu, 2017). Community college leadership are particularly concerned with issues of equity and inclusion (Mead, 2021) hence, completion is often analyzed by gender, race/ethnicity, and age to identify subsets of students in need of extra support to be successful (Yu, 2017).

Gender

Gender was selected as an input variable because it is a common predictor variable in completion studies about college students (Armbrust, 2019; Barbera et al., 2020; Ocean & Hicks, 2021; Yu, 2017). In fall 2019, 57.6% of all community college students were female (NCES, 2020a). According to NCES, 60.7% of 2018-2019 associate degree graduates were female (NCES, 2020c), and 32% of certificate graduates were female (NCES, 2020b). In a study of community college students (Cardona et al. (2019) found gender to have a very low importance on 3-year associate degree completion. Using 10-year enrollment data, NSC found little difference in the time it

takes for male (3.3 years) and female (3.4 years) students to earn an associate or bachelor's degree (Shapiro et al., 2018). In fall 2020, 62.4% of PCC students were female (PCC, 2021a).

Race/Ethnicity

Because of the large population of racial minorities, community colleges assume much of the responsibility to tackle equity issues in higher education (Mead, 2021). Community colleges serve more racial minorities than any other sector of higher education (Baldwin, 2017a). More than half (54%) of all students enrolled in a 2-year college in fall 2019 were not White (NCES, 2021b). In fall 2019, the largest racial minority group enrolled in 2-year colleges were Hispanic students at 27% of the total student population, followed by Black students at 14% (NCES, 2016). With the population growth of racial minorities across the United States (Espinosa et al., 2019), education professionals must understand needs and how to support student success for all populations (Flores et al., 2017).

Race/ethnicity was selected as a predictor variable for this study because it is commonly analyzed in completion studies for all sectors of higher education (Armbrust, 2019; Bahr, 2009; Barbera et al., 2020; Ocean & Hicks, 2021; Yu, 2017). Yu analyzed whether several variables, including race/ethnicity, predicted community college completion after 6 years. Yu found first-time community college racial minorities were less likely to complete a community college credential in 6 years than White students. Causey et al. (2020) found the 6-year completion rate declined in 2019 for Black and Hispanic students who started at a community college (Causey et al., 2020). Since racial

minorities are overrepresented at community colleges (Levin & Kater, 2018), the findings about completion predictors for TIS in this study are necessary to understand where inequities exist (Durosko, 2018). In fall 2020, 45% of PCC students were racial minorities (PCC, 2021a).

Age

Age is also a common completion predictor variable for all sectors of higher education (Armbrust, 2019; Barbera et al., 2020; Ocean & Hicks, 2021; Yu, 2017). Community colleges serve students of broad age ranges (Levin & Kater, 2018). According to NCES (2021b), 32.3% of 2-year college students (public and private) were age 25 or older. Cardona et al. (2019) found age to highly influential for 3-year associate degree completion. Armbrust (2019) found students age 22-27 were 2.477 times more likely to complete a certificate from a community college than students age 16-21; students age 28-33 were 7.279 times more likely; students age 34-39 were 4.96 times more likely; and students over 39 were 2.79 times more likely. The mean age of PCC students in fall 2020 was 25 (PCC, 2021a).

Environment: Number of Transfer Credits Accepted

The environment variable is the only variable an institution can address to improve outcomes (Astin, 1993). Continuing with Astin's (1993) IEO framework, the environment predictor variable in this study is the number of transfer credits accepted by PCC. The environment variable in this project study is specific to TIS as not all PCC students have transfer credits. The literature about TIS is dominated by vertical 2-to-4-year transfer (Taylor & Jain, 2017). The number of transfer credits accepted is often

studied as a bachelor's degree predictor variable for students who transferred from a 2-year to 4-year institution (Hodara et al., 2017; Monaghan & Attewell, 2015) and will be examined in this study since current literature about transfer-in to community colleges does not exist. Monaghan and Attewell (2015) found the number of credits transferred was a positive predictor of bachelor's degree completion. Hodara et al. (2017) found students who had all or most of their credits transferred had 2.5 times greater likelihood of bachelor's degree completion than those who had less than half of their earned credits transfer.

When credits a student took at another institution do not transfer, or transfer as elective credit instead of credit for courses in the major, it increases the time it takes for a student to earn a degree (Hodara et al., 2017). In addition, when an institution does not accept course credits a student paid for at a previous institution, it increases the cost of the degree due to a repetition of coursework (Hodara et al., 2016). PCC cannot control how many transfer credits a student earns before enrolling in PCC, but the number of transfer credits accepted by PCC is a variable PCC can control within regulations. Transferring all acceptable credits allows students to conduct "what-if" scenarios with various majors to determine the fastest path to graduation.

Outcome: Credential Completion

The outcome of credential completion (associate degree or certificate) is the final pillar in the present study grounded in Astin's (1993) IEO framework. This study examined the input and environment predictor variables presented earlier on the dependent variable, credential completion for TIS at PCC. Credential completion was

determined after 6 years, by spring 2019. Six years was selected to mirror previous completion studies (Bahr, 2009; Causey et al., 2020; Juszkiewicz, 2017; Yu, 2017). Six years also allowed TIS ample time to graduate as a part-time student or if no credits were transferred to PCC.

Community colleges play a critical role in higher education, especially for students who may not otherwise be able to access a college education (Levin & Kater, 2018). Because of open-admission and lower cost of attendance, community colleges appeal to students with diverse academic and socioeconomic backgrounds, attracting students whose life situations require convenience and flexibility (Cohen et al., 2014; Laanan & Jain, 2016; Levin & Kater, 2018). According to the American Association of Community Colleges (AACC, 2021), community colleges served 11.8 million students in fall 2019, 6.8 million of which enrolled in degree and certificate programs and courses. The shorter timeline to complete a community college credential than a bachelor's degree appeals to students who need to enter or reenter the workforce (Kamer & Ishitani, 2020). Students with an associate degree earn more than someone with only a high school diploma (NCES, 2019). One of the fundamental challenges for community colleges is getting students to the finish line (Bailey, 2016). As such, community colleges receive criticism for lower completion rates than 4-year institutions (Levin & Kater, 2018; Torres et al., 2018). However, critics fail to acknowledge that community college students more often have life situations that prevent completion than their 4-year college peers (Torres et al., 2018).

National completion initiatives were created to address the low percent of students who complete a community college credential. In the American Graduation Initiative, President Obama emphasized the role of community colleges in increasing the number of graduates (The White House, 2009). Several other completion initiatives emerged to support an increase in degree and certificate completion. Achieving the Dream, Complete College America, and Completion by Design are specific to helping community college students earn a certificate or associate degree, particularly low-income, racial minorities, and students age 25 to 34 (Baldwin, 2017a; Morris, 2016). PCC's state higher education commission established a program designed to assist students who transferred from a community college to a state university without an associate degree to transfer university credits back to complete the associate degree (State Higher Education Commission, 2016).

Analysis of Findings

Secondary data from TIS who met study inclusion criteria were examined in this project study. Of the eligible TIS enrolled in fall 2013 (n = 565), 137 (24.2%) completed a credential within 6 years. The population for the study included 38.4% males, 61.6% females. The race/ethnicity demographics of the study population was 52.4% White, 30.6% Black, 8.7% Hispanic, and 8.3% other race/ethnicities. The population was 59.8% students under age 25, 28.7% age 25 to 35, and 11.5% age 36 and over. Table 2 provides detail about the study's input variables as they relate to credential completion.

Table 2

Credential Completion by Gender, Race/Ethnicity, Age, and Credential Type

Variable	N	Graduated	Not graduated	Completion rate	Type of credential awarded	
					Associate degree	Certificate
Gender						
Male	217	56	161	25.8%	48	8
Female	348	81	267	23.2%	71	10
Race/ethnicity						
White	296	87	209	29.3%	79	8
Black	173	28	145	16.8%	20	8
Hispanic	49	10	39	20.4%	9	1
Other races	47	12	35	25.5%	11	1
Age						
Under 25	338	84	254	24.8%	77	7
25 to 35	162	37	125	22.8%	31	6
36 and over	65	16	49	24.6%	11	5

Of the three predictor variables, Black race/ethnicity was a statistically significant predictor of completion for TIS at PCC (see Table 3). Black TIS were 2.19 times more likely not to complete a credential (Exp (B) = 0.456) than White TIS. Only 16.8% of Black TIS completed a credential within 6 years, compared to 29.3% of White TIS (see Table 2). The remaining racial minority categories of TIS (Hispanic and Other races) were not statistically significant predictors of completion compared to White TIS. The findings are unlike FTFT completion predictors for race/ethnicity in which all racial minorities (Black, Hispanic, Other Races) are statistically significantly less likely to complete a credential than White students (Causey et al., 2020; Yu, 2017).

Table 3

Logistic Regression Predicting Likelihood of Credential Completion Based on Gender, Race/Ethnicity, and Age

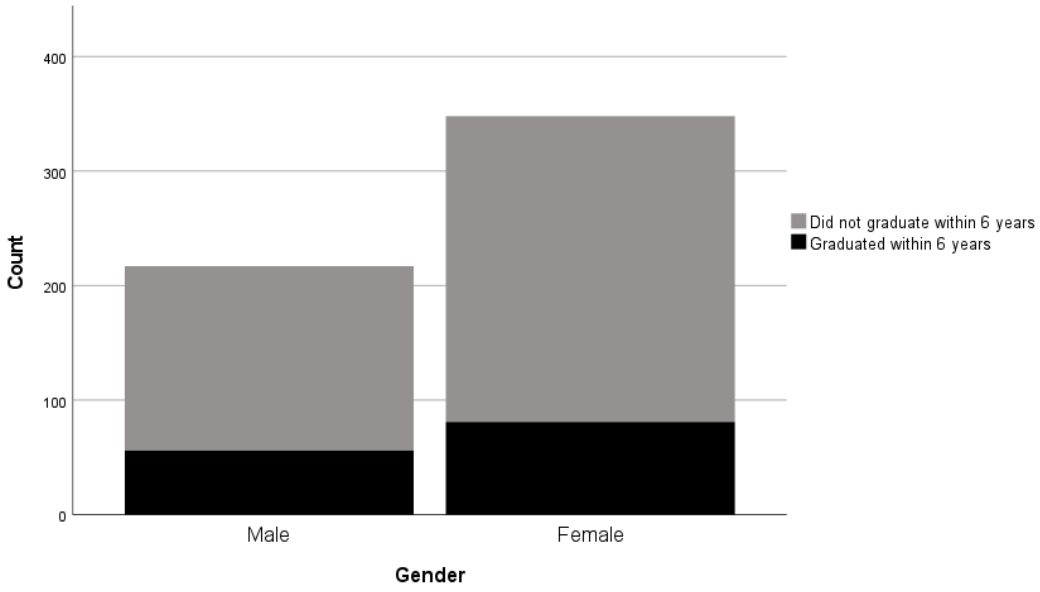
Independent variable	*B*	*SE*	Wald	*df*	*p*	Exp(B)	95% CI for Exp(B)	
							Lower	Upper
Male	0.055	0.207	0.070	1	0.791	1.056	0.704	1.584
Black	-0.784	0.248	10.037	1	0.002	0.456	0.281	0.741
Hispanic	-0.494	0.379	1.698	1	0.192	0.610	0.290	1.283
Other races	-0.189	0.358	0.279	1	0.597	0.828	0.410	1.670
Age	0.008	0.012	0.413	1	0.521	1.008	0.984	1.031

Since racial minorities are overrepresented at community colleges (Levin & Kater, 2018), the findings about completion predictors for TIS in this study are necessary to understand where inequities exist (Durosko, 2018). In fall 2020, 45% of PCC students were racial minorities (PCC, 2021a). This finding suggests PCC's policies are not supportive of Black TIS. Improvements can be made to eliminate the substantial gap in completion rates between Black and White TIS at PCC.

Although documented as completion predictors for FTFT (Armbrust, 2019; Cardona et al., 2019; Yu, 2017), age and gender were not found to be significant predictors of completion for TIS. Even though not statistically significant, male TIS had a higher completion rate (25.8%) than female TIS (23.2%) at PCC (see Figure 1), which is not typical of findings for FTFT (NCES, 2020c).

Figure 1

Credential Completion vs. Noncompletion by Gender



The TIS age group 25 to 35 had the lowest completion rate (see Table 2), whereas Armbrust (2019) found students age 28 to 33 were 7.279 times more likely to complete than traditional-age college students age 16 to 21. This difference may be related to the population of students in each study. Most TIS credential completers earned an associate degree, while Armbrust's study was of students in a technical certificate program. Certificates were earned by only 18 of the 137 TIS students in the study. Certificate programs are focused on skills necessary to become employed after completion and typically do not include the general education core that associate degrees require. Students in certificate programs may have different motivations and characteristics than those in associate degree programs. Within the 25 to 35 age group with lowest completion rates, female TIS had a credential completion rate of 18.5% compared to

31.5% of male TIS the same age (see Table 4). These findings may suggest that female TIS of child-bearing age have obligations that take precedence over college enrollment.

Table 4

Credential Completion by Age and Gender

Age	Completed credential	No credential	Completion rate (%)
Under age 25			
Male	36	113	24.1
Female	48	141	25.4
Age 25 to 35			
Male	17	37	31.5
Female	20	88	18.5
Over age 36			
Male	3	11	21.4
Female	13	38	25.5

Most TIS entered PCC with zero transferred credits. The likelihood of credential completion within 6 years increases by 1.03 for each transfer credit accepted (95% *CI* between 1.016 and 1.044). This may appear minor, but most college courses are 3 semester credits (Coursera, 2022), so transferring in one course gives the student a greater chance of completion. When credits a student earned at another institution do not transfer, or transfer as electives instead of courses in the major, it increases the cost and time it takes for a student to earn a degree (Hodara et al., 2017). PCC cannot change the input characteristics of TIS, but can change policy to improve TIS success.

Recommendations

Students make decisions daily about whether to stay in college, change schools, or change majors (Anderson, 2019). According to Tinto's (1993) theory of student

departure, the interaction between the student and college can determine whether a student continues to enroll at the institution. Tinto's model is similar to Astin's (1993) IEO framework in that a student's background and connection with the college determines the outcome of college persistence (Tinto, 1993) or completion (Astin, 1993). Students cannot make it to graduation without persistence from term to term; therefore, the policy recommendations stemming from this project study are rooted in Tinto's framework.

TIS success is related to institutional practices (Jenkins & Fink, 2016) and Knepfle and McCaskill (2022) suggest innovative programs are necessary to close the gap between completion rates for TIS and FTFT. At many institutions TIS do not receive the type of support they need as resources are often focused on FTFT student needs and then applied to all students (Walker & Okpala, 2017). As college student populations become more diverse, institutions recognize that all students cannot be supported using the same methods and services (Mead, 2021). The policy recommendations are based on research and best practices to provide initiatives to address specific completion needs of TIS at PCC. The overall goal for this policy recommendation is to increase the completion rate of TIS at PCC. The recommendations include changes to PCC's admissions practices and regular evaluation of TIS success.

Recommendation 1: Provide a Success Coach for Black Transfer-in Students

As revealed in Section 2 of this project study, Black TIS at PCC were significantly less likely not to complete a credential than White TIS. This finding suggests PCC's current policies and practices are not supportive and disadvantageous to

Black TIS. PCC faculty and staff view all strategic initiatives through a lens of equity and inclusion, thoughtfully considering how to eliminate achievement gaps by race/ethnicity. Ignoring race/ethnicity in planning and policymaking cannot close the completion gap (Crisp et al., 2020) that exists for Black TIS at PCC.

Racial minorities are less likely to seek support because they believe they "don't really belong in college in the first place" (Daniels et al., 2019, p. 1). As less than half of racial minorities use support services such as advising, tutoring, and financial resources, a study by Daniels et al. (2019) focused on successful programs that decreased stigma of seeking academic, were scalable, and provided students with wrap-around support. One successful model occurred at South Texas College where tutors attended new student orientation and were invited to classrooms to introduce themselves and the service (Daniels et al., 2019). The meetings established an early connection with a person who was specifically there to help with classwork. In a similar model, intrusive advising including mandatory appointments, check-ins, and degree planning was found to be effective for racial minorities (Harrell, 2016). Community colleges in Virginia had success increasing completion rates for racial minorities using a success coach model (Daniels et al., 2019). One Virginia community college's success coach program resulted in 70% of students maintaining at least a 2.0 GPA and tripled the number of credentials completed in 3 years (Daniels et al., 2019). This model was implemented at nine other Virginia community colleges and resulted in a 3-year return on investment of $3 million due to student retention (Daniels et al., 2019). TIS expressed the desire to connect with support staff for successful integration into a new institution (Nuñez & Yoshimi, 2017).

A dedicated success coach with knowledge of transfer policies and procedures should be assigned to Black TIS. The success coach would assist Black TIS with academic planning, interventions, financial aid and scholarship applications, and connect students to resources such as tutoring, computer labs, and basic needs (Daniels et al., 2019).

Recommendation 2: Review How Transfer Credits are Accepted

Transfer of credit from one institution to another is important to a transfer-in student's completion timeline and budget (Hodara et al., 2016, 2017). The AACRAO Transfer Student Bill of Rights declares that students should "enjoy the maximization of available credit in transfer in support of reduced cost to students and the most efficient time to degree completion" (AACRAO, n.d., p. 1). A study of the experiences TIS at a historically Black college and university (HBCU) yielded the following comment during an interview with a student: "I'm going to see what [another university within the same city] will accept. I said if they will accept more of my courses, I said [this university] can kiss me goodbye for the fall because it don't make no sense to me to have to take it over. I have gotten student loans that I got to pay back" (Walker & Okpala, 2017, p. 40). In another study, a student had 18 credit hours that did not transfer, and to maintain the desired graduation timeline the student had to take more credits than planned each semester and enroll in summer classes (Daddona et al., 2019).

Most TIS entered PCC with zero transferred credits. Limitations of this study did not make it possible to understand whether this was due to varying factors: the student never submitted a transcript, the student did not earn credits at their previous institution(s), or the credits previously earned were not applicable to the student's major

at PCC. Once transcripts are received, PCC should evaluate all credits instead of those required for the transfer-in student's major at the time the transcripts were received. A student may have earned 30 credits, but only 12 credits transfer into the new major. Findings indicated that the likelihood of credential completion within 6 years increases by 1.03 for each transfer credit accepted. This may appear minor, but most college courses are 3 semester credits (Coursera, 2022), so transferring in one course gives the student a greater chance of completion. When credits a student earned at another institution do not transfer, or transfer as electives instead of courses in the major, it increases the cost and time it takes for a student to earn a degree (Hodara et al., 2017).

Transfer credits are not automatically re-evaluated after a student changes their major. By accepting all previous credits allowed within state regulations, the student or advisor can make decisions about the fastest path to completion using "what-if" scenarios. In addition, this policy recommendation ensures students do not repeat coursework already completed at another institution, keeping the cost of a credential down. This policy is also beneficial for transcript evaluators because they would not have to re-evaluate a transcript at a later time because the student changed their major.

Recommendation 3: Improve Communication With Transfer-in Students

Communication with TIS is imperative so accurate decisions can be made about course scheduling and degree planning. The American Association of Collegiate Registrars and Admissions Officers (AACRAO) published the Transfer Student Bill of Rights (AACRAO, n.d.). Included in the recommendations is the "right to clear, complete, and accessible information about how prior learning credit will be accepted

and applied to degree requirements in their select program of study" (AACRAO, n.d., p. 1). Schudde et al. (2020) found that many students have incomplete or inadequate information regarding transfer. This finding was also highlighted in a U.S. 2017 Government Accountability Office (GAO) report about transferring college credits. The GAO found disparity in the access to and value of public information about transfer and transfer advising. Students notice when the transfer process is difficult to navigate and want information that is readily available, clear, and accurate (Nuñez & Yoshimi, 2017; Schudde et al., 2020; Sibonga, 2020). Although TIS already have college experience, nomenclature and navigation of the campus and policies have to be relearned at a new institution (Walker & Okpala, 2017). This policy paper recommends three activities to improve outreach via communication with TIS at PCC.

Reminder to Submit Official Transcripts

PCC's admissions or registrar's offices do not proactively encourage students to claim credit from other colleges. A TIS is expected to know to send transcripts or be told during an optional academic advising session. PCC should develop a communication plan to remind TIS to send official transcripts to get credit for what they have already accomplished. PCC's policy is to send correspondence through college email, but texting is available and should be utilized in addition to email and alerts in the student portal.

Access to Accurate Information

Webpage. The transfer-in webpage should be reviewed to ensure accurate and useful information is provided in a way that is understood by students. Schudde et al. (2020) used a rubric to conduct a review of transfer information on institution websites.

Two-thirds of the colleges reviewed fell below the desired standard of information that is intentional and useful for students. Students in an earlier study experienced problems simply understanding the information provided on websites (Margolin et al., 2013). A policy recommendation from this study is that PCC examine information found on the transfer-in webpage and materials. The review should ensure all relevant information is present, links work, contact information is correct, and should include a usability test performed by TIS (Schudde et al., 2020).

Transfer Equivalency Database. PCC is fortunate to already have a public database of how courses transfer-in to PCC that can be used by TIS, but it is not complete. An essential task to ensure the accuracy of information on the transfer-in webpage is to review and update the database so students can determine how credits transfer while awaiting an official evaluation. In fact, the American Council on Education's National Task Force on the Transfer and Award of Credit (2021) recommends information about how credits transfer be made available before a student even chooses to enroll in an institution or reasons why credit will not transfer.

Tips from Successful Transfer-in Students

TIS were less likely to attend events or join students clubs so inventive ideas are necessary to reach this student population (Daddona et al., 2019). TIS appreciated orientation presenters who could provide first-hand knowledge of how to navigate the transfer-in process to become successful students (Jain et al., 2016). These findings suggest the need for a campus culture of welcoming TIS in ways that will be impactful for their success, namely learning from other successful TIS. This policy

recommendation proposes TIS share their experiences and tips for the transition via a short video or set of videos to orient new TIS to PCC. Grites (2021b) suggests a video by a student who previously attended the same institution, which may be a long-term goal toward welcoming TIS to PCC, but not necessarily a priority for implementation due to limited resources.

Recommendation 4: Engage in Consistent Evaluation of Transfer-in Student Success

Consistent evaluation of TIS success facilitates the continuous improvement of services and supports PCC's strategic objective to meet the expectation of students and stakeholders through data-driven strategies. This policy recommendation suggests two activities to regularly evaluate TIS success at PCC: engage in evidence-informed assessment of success measures for TIS and conduct a qualitative study to determine specific experiences and needs of PCC TIS.

Evidence-Informed Assessment

PCC's IR office should consistently evaluate and share completion and retention data for TIS. This serves the purpose of evaluating the effectiveness of the policy recommendations outlined in this project study as well as keeping PCC leadership informed about the success of almost a quarter of new students who seek to earn a credential at PCC. Moreover, PCC will demonstrate that TIS are as important as FTFT by monitoring retention and completion outcomes, normally evaluated and required only for FTFT. Creating a culture of TIS awareness and support relies upon sharing of information about this student population.

Qualitative Study of Transfer-in Students Experiences

TIS have different needs than FTFT to acclimate to a new college campus (Daddona et al., 2019; Jenkins & Lahr, 2022). The Noel-Levitz (2013) study of attitudes and motivations of college transfer students indicated that the first step to supporting TIS is to understand their attitudes and motivation, then develop initiatives to support their unique needs. Yet, TIS still experience "institutional neglect" when arriving at a new institution (Nuñez & Yoshimi, 2017, p. 181). Walker and Okpala (2017) interviewed TIS at a small 4-year college. One student summarized the feeling of invisibility on campus: "Overall, there is work to be done in making sure that transfer students feel a part of the student body. I feel as if I am dangling out here on my own" (Walker & Opkala, 2017, p. 41).

A qualitative study should be conducted to examine the experiences of TIS at PCC. Student experiences and outcomes of 2-to-2-year (lateral) and 4-to-2-year (reverse) transfer have not been studied, particularly across race/ethnicities (Crisp et al., 2020). This is of specific importance for PCC considering study findings showed Black TIS are less likely to graduate than White TIS.

Conclusion

PCC students can benefit from the evidence-based research and recommendations in this policy paper. This policy paper's recommendations focus on a culture of awareness about TIS. Communication with TIS is a critical aspect of the recommended policy. Communication comes in the form of accurate information on the college website before a TIS even applies to PCC, reminders of the need to send transcripts to get credit

for what has already been learned, and a welcome to the college by students who have been through the transfer-in process. The results of this study identified the number of transfer credits accepted as a significant predictor of completion for PCC TIS. Transferring all transferrable credits instead of only those required for the student's major at the time of evaluation can improve completion rates and allow students to conduct what-if scenarios to find the fastest path to completion. This study revealed better support for Black TIS is necessary. This group of students was most likely not to complete a credential at PCC. With the individual support a success coach can provide, completion rates for Black students can be improved.

The policy recommendations can improve completion for PCC TIS. Completing a college credential could mean a better job and salary for TIS who did not finish a credential the first time they went to college. This is important for the student and also for the local and state economy. A campus culture of welcoming and awareness of TIS needs can set the course for making an impact in many lives.

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