

Differences in the 1-Year Persistence Rates of International Students by Their Institutional Status at Texas Community Colleges: A Statewide, Multiyear Investigation

^aDr. Rami Alsakran ^bJohn R Slate ^cDr. George W. Moore ^dDr. Frederick C. Lunenburg ^eDr. Wally Barnes

^{a, b}Doctoral Graduate in Educational Leadership from Sam Houston State University

^{c, d}Professor, Department of Educational Leadership Sam Houston State University

^e Director, Academic Success Center Sam Houston State University

^a ria003@shsu.edu ^b profslate@aol.com ^c gwm002@shsu.edu ^d edu_fcl@shsu.edu ^e wbb001@shsu.edu

Abstract

In this multiyear, statewide study, the degree to which 1-year persistence rates differed by the institutional status (i.e., stayed or transferred) of International students who were enrolled in Texas community colleges was determined. Inferential statistical procedures revealed the presence of statistically significant differences in 1-year persistence rates between International students who stayed at the same Texas community college and International students who transferred to a different Texas community college. In all cases, the 1-year persistence rates of International students who stayed were higher, 14 to 52 times higher, than the 1-year persistence rate of International students who transferred. In all 15 academic years (i.e., 1999-2000 through 2013-2014), very large effect sizes were present.

Keywords: International students, Texas community colleges, transferred, stayed, 1-year persistence rates

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According to the *Open Doors* report, of the total number of students (i.e., 20,185,000) who attended a postsecondary institution in the United States in the 2016-2017 academic year, 5.3% were International students (Institute of International Education, 2017a). International students come from all around the world to the United States to begin their postsecondary education (Jennings, 2017). The total number of International students has increased by 3.4% from the 2015-2016 academic year to the 2016-2017 academic year, resulting in a total of 1,078,822 International students in the United States. Of these International students in the 2016-2017 academic year, 439,019 International students were undergraduate students, 391,124 students were graduate students, 175,695 students were Optional Practical Training students, and 72,984 students were non-degree students (Institute of International Education, 2017a).

The number of International students has been steadily increasing since the 2006-2007 academic year (Shih, 2016). In the 2006-2007 academic year, the number of International students was 583,984 for all academic levels. The number of International students in the 2016-2017 academic year was almost double the number of International students in the 2006-2007 academic year. Of this total number of International students (i.e., 1,078,822) who attended a postsecondary institution in the United States, 8.9% or 96,472 students attended community colleges (Institute of International Education, 2017b). Many International students choose to go to community colleges in the United States because community colleges are more affordable and have less admission requirements than do 4-year universities (Mamiseishvili, 2012a; Zhang, 2016). Some International students attend community colleges to improve their English skills such as reading, writing, and speaking (Zhang, 2015). After attending community colleges and earning their associate degrees, many International students plan to transfer to 4-year universities (Anayah & Kuk, 2015; Kisch, 2012).

Several researchers (e.g., Moss, 2017; Moss & Slate, 2016; Stagg, 2017) have examined the persistence rates of community college students in the United States. In a recent investigation in the state of interest for this article,

Moss and Slate (2016) examined the 1-year persistence rates of Black and White Texas community college students by their institutional status (i.e., stayed or transferred) in two academic years (i.e., 1999-2000 and 2012-2013 academic years). In both academic years, Moss and Slate (2016) documented that Black and White students who stayed at the same Texas community colleges had statistically significantly higher 1-year persistence rates than Black and White students who transferred to a different Texas community college. Congruent with the well-documented achievement gap, Black students who stayed at the same Texas community college had statistically significantly lower 1-year persistence rates than White students who stayed at the same Texas community college. In the 1999-2000 academic year, the 1-year persistence rates of Black students who stayed at the same Texas community college was 4.4% lower than the 1-year persistence rates of White students who stayed at the same Texas community college. In the 2012-2013 academic year, the 1-year persistence rates of Black students who stayed at the same Texas community college were 9.3% lower than the 1-year persistence rates of White students who stayed at the same Texas community college (Moss & Slate, 2016).

In a more in-depth analysis, Moss (2017) examined the 1-year persistence rates of Black Texas community college students by their institutional status (i.e., stayed or transferred) over eight academic years (i.e., 2007-2008 through 2014-2015). Moss (2017) established that Black students who stayed at the same Texas community college were statistically significantly more likely to persist than Black students who transferred to a different Texas community college. The 1-year persistence rates of Black students who stayed at the same Texas community college ranged from 38% to 64%. In contrast, the 1-year persistence rates of Black students who transferred to a different Texas community college ranged from 27% to 37%. Moss (2017) established that the differences were statistically significant for four academic years (i.e., 2008-2009, 2009-2010, 2010-2011, 2013-2014, and 2014-2015). However, even when the differences were not statistically significant for the other academic years (i.e., 2007-2008, 2011-2012, and 2012-2013), Black students who stayed at the same Texas community college had higher 1-year persistence rates than Black students who transferred to a different Texas community college (Moss, 2017).

In an extension of Moss (2017) and Moss and Slate (2016), Stagg (2017) analyzed the 1-year persistence rates of Hispanic Texas community college students by their institutional status (i.e., stayed or transferred) over seven academic years (i.e., 2007-2008 through 2013-2014). Stagg (2017) documented that Hispanic students who stayed at the same Texas community college were statistically significantly more likely to persist than Hispanic students who transferred to a different Texas community college. The 1-year persistence rates of Hispanic students who stayed at the same Texas community college ranged from 54% to 60%. In contrast, the 1-year persistence rates of Hispanic students who transferred to a different Texas community college ranged from 42% to 51%. Stagg (2017) determined the differences were statistically significant for six academic years (i.e., 2007-2008, 2008-2009, 2009-2010, 2011-2012, 2012-2013, and 2013-2014). The 1-year persistence rates of Hispanic students, regardless of their institutional status, were similar in the 2010-2011 academic year. Congruent with Moss (2017), Stagg (2017) determined that even when the differences were not statistically significant, Hispanic students who stayed at the same Texas community college had higher 1-year persistence rates than Hispanic students who transferred to a different Texas community college (Stagg, 2017).

Similar to U.S. students, International students face challenges while attending a postsecondary institution that might prevent them to persist in college (Lin & Scherz, 2014). For example, some International students do not receive accurate information from the academic advisors while they are in college (Zhang, 2016). In some cases, they might register for classes and then the academic advisors contact them days before the first class of the semester telling them that the classes they registered for were not the correct classes they should be taking (Zhang, 2016). This kind of confusion increases the stress level for the International students and increases the possibility of additional challenges that might preclude them from persisting through college and graduating (Hansen, Shneyderman, McNamara, & Grace, 2018; Zhang, 2016). Moreover, International students pay special attention to their legal status because all International students are required to have student visas such as F-1 visa (U.S. Department of State, 2018). The records of these students are maintained and managed by the Student and Exchange Visitor Information System, which is used by the U.S. Department of Homeland Security to ensure that International students stay within a legal status (U.S. Immigration and Customs Enforcement, 2017).

Therefore, if classes were dropped days before the beginning of the semester, International students might jeopardize their legal status which might cause them to be deported outside of the United States (Yan & Pei, 2018).

Even though many International students are attracted to attend community colleges, some community colleges might not be suitable for all of them. For example, Texas community colleges perform differently in terms of 1-year persistence rates. According to Alsakran and Slate (2017), some Texas community colleges have high 1-year persistence rates, and other Texas community colleges have low 1-year persistence rates for their International students. For example, Lone Star College was consistent with its high 1-year persistence rates in three academic years (i.e., 2010-2011, 2011-2012, and 2012-2013). However, Central Texas College was a Texas community college that had low 1-year persistence rates in the same three academic years. Alsakran and Slate (2017) recommended that the leaders for the Texas community colleges with low 1-year persistence rates should investigate why their colleges have low 1-year persistence rates for their International students.

Statement of the Problem

A lack of knowledge exists about the 1-year persistence rates of International students who attend Texas community colleges. Whether differences might be present in the 1-year persistence rates by the institutional status of International students who enroll in Texas community colleges are not addressed in the extant literature. The most relevant study to the 1-year persistence rates of International students was conducted by Alsakran and Slate (2017). However, Alsakran and Slate (2017) only conducted a descriptive study in which they simply determined the five Texas community colleges that had the highest 1-year persistence rates of International students for three academic years (i.e., 2010-2011, 2011-2012, and 2012-2013 academic years), and the five Texas community colleges that had the lowest 1-year persistence rates of International students for the same three academic years.

International students face challenges that might affect their 1-year persistence rates. In fact, International students might face the same challenges that other students (i.e., Black and Hispanic students) experience which could prevent them from having high 1-year persistence rates. Several researchers (e.g., Moss, 2017; Stagg, 2017) determined that Texas community colleges need to audit the 1-year persistence rates of Black and Hispanic students, and to examine their existing programs to determine the changes that could be made to improve the 1-year persistence rates of these students. However, whether the results of these studies that were conducted by Moss (2017) and Stagg (2017) are generalizable to International students is not known. Accordingly, the 1-year persistence rates of International students at Texas community colleges warrants investigation.

Purpose of the Study

The first purpose of this study was to determine the degree to which 1-year persistence rates differed by the institutional status (i.e., stayed or transferred) of International students who were enrolled in Texas community colleges in the 1999-2000 academic year through the 2013-2014 academic year. The second purpose was to identify trends, if any, that were present in the 1-year persistence rates by the institutional status of International students across 15 academic years (i.e., 1999-2000 through 2013-2014). By analyzing 15 academic years of statewide data, the degree to which changes had occurred in the 1-year persistence rates by the institutional status of International students in Texas community colleges was determined.

Significance of the Study

Investigating the difference in the 1-year persistence rates by the institutional status (i.e., stayed or transferred) of International students is important because it might help International students understand whether staying at the same Texas community college or transferring to a different Texas community college is more appropriate for them. In addition, Texas community colleges could benefit from this study and determine what needs to be changed in their existing programs to improve the 1-year persistence rates of International students. More

important, this study is an addition to the existing literature about the 1-year persistence rates of International students who attend Texas community colleges, and it is an extension to the previous studies that were conducted by other researchers (e.g., Moss, 2017; Stagg, 2017).

Research Questions

The following research questions were addressed in this investigation: (a) What is the difference in the 1-year persistence rates by the institutional status (i.e., stayed or transferred) of International students who were enrolled in Texas community colleges?; (b) What is the difference in the 1-year persistence rates of International students who stayed at the same Texas community college between the 1999-2000 and the 2006-2007 academic years, between the 2006-2007 and the 2013-2014 academic years, and between the 1999-2000 and the 2013-2014 academic years?; (c) What is the difference in the 1-year persistence rates of International students who transferred to a different Texas community college between the 1999-2000 and the 2006-2007 academic years, between the 2006-2007 and the 2013-2014 academic years, and between the 1999-2000 and the 2013-2014 academic years?; (d) To what extent are trends present in the 1-year persistence rates by the institutional status (i.e., stayed or transferred) of International students from the 1999-2000 through the 2013-2014 academic years? The first research question was repeated for 15 academic years, from the 1999-2000 academic year through the 2013-2014 academic year. The last research question involved results from all 15 academic years.

Method

Research Design

A non-experimental causal-comparative research design was used for this study (Creswell, 2013; Schenker & Rumrill, 2004). Archival data were obtained from the Texas Higher Education Coordinating Board Interactive Accountability System and were analyzed in this study. Because the archival data were collected for events that had occurred in the past, the dependent variable and the independent variable cannot be changed nor manipulated (Johnson & Christensen, 2012). The institutional status (i.e., stayed or transferred) of International students in all Texas community colleges was the independent variable, and the 1-year persistence rates of International students in Texas community colleges constituted the dependent variable for this study. The archival data that were obtained for this study were assumed to be accurate and free of errors. Because the Texas Higher Education Coordinating Board audits the data that are provided by each Texas community college, this assumption was believed to be appropriate (Texas Higher Education Coordinating Board, 2018a).

Participants and Instrumentation

Participants for this study were all of the 73 Texas community colleges that provided data on the 1-year persistence rates of International students in the 1999-2000 through the 2013-2014 academic years. The data were obtained from the Texas Higher Education Coordinating Board Interactive Accountability System, which is responsible of tracking performance and providing data for higher education institutions in Texas (Texas Higher Education Coordinating Board, 2017). To date, these data were all of the available data at the Texas Higher Education Coordinating Board Interactive Accountability System website. The database is publicly available and accessible to users who want to locate data for Texas higher education institutions (Texas Higher Education Coordinating Board, 2018b).

The three key terms that need to be defined in this article are International students, staying, and transferring. International students are students who are not U.S. citizens nor permanent residents of the United States. They are temporarily residing in the United States for education (Texas Higher Education Coordinating Board, 2017). Staying refers to students who enrolled at a Texas community college in one year and who then reenrolled in the same Texas community college in the next academic year (Moss, 2017). Transferring refers to students who enrolled at a Texas community college in one year and who then reenrolled in a different Texas community college in the next academic year (Moss, 2017).

Results

Because the Texas Higher Education Coordinating Board links the 1-year persistence rates of International students with the academic year and with the institutional status of students (e.g., 2008-2009 International students staying 1-year persistence rates), dependent samples *t*-tests were used in this study. Dependent samples *t*-tests are a suitable inferential statistical procedure to calculate when the variables (i.e., 1-year persistence rates by institutional status) are associated (Slate & Rojas-LeBouef, 2011). Checks were performed on the standardized skewness coefficients (i.e., the skewness value divided by its standard error) and the standardized kurtosis coefficients (i.e., the kurtosis value divided by its standard error) to determine if all coefficients were within the limits of normality, +/- 3 (Onwuegbuzie & Daniel, 2002). In this study, one half of all coefficients were within the limits of normality. Accordingly, parametric dependent samples *t*-tests were conducted to answer the research questions.

Results for Research Question One

Regarding the first research question, What is the difference in the 1-year persistence rates by the institutional status (i.e., stayed or transferred) of International students who were enrolled in Texas community colleges?, a parametric dependent samples *t*-test revealed the presence of a statistically significant difference in the 1-year persistence rates as a result of student institutional status in the 1999-2000 academic year, $t(68) = 9.40, p < .001$. This difference represented a large effect size (Cohen’s *d*) of 1.57 (Cohen, 1988). International students who stayed at the same Texas community college had statistically significantly higher 1-year persistence rates than International students who transferred to a different Texas community college. In fact, the 1-year persistence rates of International students who stayed at the same Texas community college were more than 10 times higher than the 1-year persistence rates of International students who transferred to a different Texas community college. Table 1 contains the descriptive statistics for this analysis.

Table 1: *Descriptive Statistics for the 1-Year Persistence Rates of International Students by Their Institutional Status in Texas Community Colleges for the 1999-2000 Academic Year Through the 2003-2004 Academic Year*

| Academic Year and Institutional Status | <i>n</i> of colleges | <i>M</i> % | <i>SD</i> % |
|--|----------------------|------------|-------------|
| 1999-2000 | | | |
| Stayed | 69 | 37.54 | 29.69 |
| Transferred | 69 | 3.71 | 7.06 |
| 2000-2001 | | | |
| Stayed | 69 | 39.43 | 29.25 |
| Transferred | 69 | 3.35 | 7.77 |
| 2001-2002 | | | |
| Stayed | 69 | 52.31 | 29.39 |
| Transferred | 69 | 3.30 | 6.61 |
| 2002-2003 | | | |
| Stayed | 69 | 46.71 | 31.53 |
| Transferred | 69 | 3.43 | 7.60 |
| 2003-2004 | | | |
| Stayed | 69 | 41.78 | 30.18 |
| Transferred | 69 | 1.69 | 3.55 |

For the 2000-2001 academic year, a statistically significantly difference was present in the 1-year persistence rates, $t(68) = 10.20, p < .001$, as a result of student institutional status. This difference represented a large effect size (Cohen’s *d*) of 1.69. International students who stayed at the same Texas community college had statistically significantly higher 1-year persistence rates, 12 times higher, than the 1-year persistence rates of International students who transferred to a different Texas community college. Delineated in Table 1 are the descriptive statistics for this analysis.

With respect to the 2001-2002 academic year, a statistically significant difference was yielded in the 1-year persistence rates as a result of student institutional status, $t(68) = 13.43, p < .001$. This difference represented a large effect size (Cohen's d) of 2.30 (Cohen, 1988). As revealed in Table 1, International students who stayed at the same Texas community college had statistically significantly higher 1-year persistence rates than International students who transferred to a different Texas community college. The 1-year persistence rates of International students who stayed at the same Texas community college were more than 16 times higher than the 1-year persistence rates of International students who transferred to a different Texas community college. Concerning the 2002-2003 academic year, a statistically significant difference was present in the 1-year persistence rates, $t(68) = 11.35, p < .001$, as a result of student institutional status. Similar to the previous three academic years, this difference was reflective of a large effect size (Cohen's d) of 1.89. International students who stayed at the same Texas community college had statistically significantly higher 1-year persistence rates than International students who transferred to a different Texas community college. As presented in Table 1, the 1-year persistence rates of International students who stayed at the same Texas community college were 14 times higher than the 1-year persistence rates of International students who transferred to a different Texas community college.

With respect to the 2003-2004 academic year, a statistically significant difference was revealed in the 1-year persistence rates as a result of student institutional status, $t(68) = 11.31, p < .001$. This difference again represented a large effect size (Cohen's d) of 1.87 (Cohen, 1988). International students who stayed at the same Texas community college had statistically significantly higher 1-year persistence rates, more than 25 times higher, than the 1-year persistence rates of International students who transferred to a different Texas community college. Table 1 contains the descriptive statistics for this analysis. For the 2004-2005 academic year, a statistically significant difference was present in the 1-year persistence rates, $t(68) = 13.36, p < .001$, as a result of student institutional status. This difference was indicative of a large effect size (Cohen's d) of 2.29. International students who stayed at the same Texas community college had statistically significantly higher 1-year persistence rates, 27 times higher, than the 1-year persistence rates of International students who transferred to a different Texas community college. Table 2 contains the descriptive statistics for this analysis.

Table 2: Descriptive Statistics for the 1-Year Persistence Rates of International Students by Their Institutional Status in Texas Community Colleges for the 2004-2005 Academic Year Through the 2008-2009 Academic Year

| Academic Year and Institutional Status | n of colleges | community $M\%$ | $SD\%$ |
|--|-----------------|-----------------|--------|
| 2004-2005 | | | |
| Stayed | 69 | 52.87 | 31.04 |
| Transferred | 69 | 1.99 | 5.25 |
| 2005-2006 | | | |
| Stayed | 69 | 51.13 | 30.04 |
| Transferred | 69 | 2.82 | 6.92 |
| 2006-2007 | | | |
| Stayed | 70 | 48.86 | 29.80 |
| Transferred | 70 | 1.47 | 4.29 |
| 2007-2008 | | | |
| Stayed | 70 | 46.27 | 34.24 |
| Transferred | 70 | 1.63 | 5.68 |
| 2008-2009 | | | |
| Stayed | 71 | 46.83 | 34.54 |
| Transferred | 71 | 0.72 | 2.62 |

Concerning the 2005-2006 academic year, a statistically significant difference was present in the 1-year persistence rates, $t(68) = 12.77, p < .001$, as a result of student institutional status. This difference represented a

large effect size (Cohen’s *d*) of 2.22 (Cohen, 1988). International students who stayed at the same Texas community college had statistically significantly higher 1-year persistence rates, more than 18 times higher, than International students who transferred to a different Texas community college. Revealed in Table 2 are the descriptive statistics for this analysis.

Regarding the 2006-2007 academic year, a statistically significantly difference was present in the 1-year persistence rates, $t(69) = 13.23, p < .001$, as a result of student institutional status. This difference represented a large effect size (Cohen’s *d*) of 2.23. International students who stayed at the same Texas community college had statistically significantly higher 1-year persistence rates, 33 times higher, than the 1-year persistence rates of International students who transferred to a different Texas community college. Delineated in Table 2 are the descriptive statistics for this analysis. With respect to the 2007-2008 academic year, a statistically significant difference was yielded in the 1-year persistence rates as a result of student institutional status, $t(69) = 10.50, p < .001$. This difference represented a large effect size (Cohen’s *d*) of 1.82 (Cohen, 1988). As revealed in Table 2, International students who stayed at the same Texas community college had statistically significantly higher 1-year persistence rates, more than 28 times higher, than the 1-year persistence rates of International students who transferred to a different Texas community college. Concerning the 2008-2009 academic year, a statistically significantly difference was present in the 1-year persistence rates, $t(70) = 11.34, p < .001$, as a result of student institutional status. Similar to the previous nine academic years, this difference was reflective of a large effect size (Cohen’s *d*) of 1.88. International students who stayed at the same Texas community college had statistically significantly higher 1-year persistence rates than International students who transferred to a different Texas community college. As presented in Table 2, the 1-year persistence rates of International students who stayed at the same Texas community college were 65 times higher than the 1-year persistence rates of International students who transferred to a different Texas community college. Regarding the 2009-2010 academic year, a statistically significant difference was revealed in the 1-year persistence rates as a result of student institutional status, $t(70) = 12.30, p < .001$. This difference again represented a large effect size (Cohen’s *d*) of 2.04 (Cohen, 1988). International students who stayed at the same Texas community college had statistically significantly higher 1-year persistence rates, more than 45 times higher, than the 1-year persistence rates of International students who transferred to a different Texas community college. Table 3 contains the descriptive statistics for this analysis.

Table 3: *Descriptive Statistics for the 1-Year Persistence Rates of International Students by Their Institutional Status in Texas Community Colleges for the 2009-2010 Academic Year Through the 2013-2014 Academic Year*

| Academic Year and Institutional Status | <i>n</i> of community colleges | <i>M</i> % | <i>SD</i> % |
|--|--------------------------------|------------|-------------|
| 2009-2010 | | | |
| Stayed | 71 | 48.82 | 32.89 |
| Transferred | 71 | 1.08 | 3.25 |
| 2010-2011 | | | |
| Stayed | 71 | 40.12 | 32.18 |
| Transferred | 71 | 2.05 | 6.20 |
| 2011-2012 | | | |
| Stayed | 72 | 42.14 | 30.72 |
| Transferred | 72 | 3.27 | 12.32 |
| 2012-2013 | | | |
| Stayed | 72 | 51.64 | 30.98 |
| Transferred | 72 | 3.25 | 12.64 |
| 2013-2014 | | | |
| Stayed | 72 | 46.33 | 33.57 |
| Transferred | 72 | 1.53 | 6.22 |

With respect to the 2010-2011 academic year, a statistically significantly difference was present in the 1-year persistence rates, $t(70) = 9.85, p < .001$, as a result of student institutional status. This difference was indicative

of a large effect size (Cohen’s *d*) of 1.64. International students who stayed at the same Texas community college had statistically significantly higher 1-year persistence rates, 20 times higher, than the 1-year persistence rates of International students who transferred to a different Texas community college. Delineated in Table 3 are the descriptive statistics for this analysis. Concerning the 2011-2012 academic year, a statistically significant difference was present in the 1-year persistence rates, $t(71) = 9.54, p < .001$, as a result of student institutional status. Similar to the previous 12 academic years, this difference was reflective of a large effect size (Cohen’s *d*) of 1.66. As revealed in Table 3, International students who stayed at the same Texas community college had statistically significantly higher 1-year persistence rates, 13 times higher, than the 1-year persistence rates of International students who transferred to a different Texas community college. Regarding the 2012-2013 academic year, a statistically significant difference was revealed in the 1-year persistence rates as a result of student institutional status, $t(71) = 11.68, p < .001$. This difference again represented a large effect size (Cohen’s *d*) of 2.05 (Cohen, 1988). International students who stayed at the same Texas community college had statistically significantly higher 1-year persistence rates, 16 times higher, than the 1-year persistence rates of International students who transferred to a different Texas community college. Table 3 contains the descriptive statistics for this analysis. For the 2013-2014 academic year, a statistically significant difference was present in the 1-year persistence rates, $t(71) = 10.90, p < .001$, as a result of student institutional status. This difference was indicative of a large effect size (Cohen’s *d*) of 1.86. International students who stayed at the same Texas community college had statistically significantly higher 1-year persistence rates, 30 times higher, than the 1-year persistence rates of International students who transferred to a different Texas community college. Descriptive statistics for this analysis are presented in Table 3.

Results for Research Question Two

Regarding the second research question, What is the difference in the 1-year persistence rates of International students who stayed at the same Texas community college between the 1999-2000 and the 2006-2007 academic years, between the 2006-2007 and the 2013-2014 academic years, and between the 1999-2000 and the 2013-2014 academic years?, three parametric dependent samples *t*-tests were calculated. These three comparisons provide an analysis of the degree to which changes had occurred from (a) the beginning point (i.e., 1999-2000 academic year) to the midpoint (i.e., 2006-2007 academic year); (b) the midpoint to the endpoint (i.e., 2013-2014 academic year); and (c) the beginning point to the endpoint. For the beginning to midpoint comparison (i.e., 1999-2000 and 2006-2007 comparison), a statistically significant difference was present in the 1-year persistence rates for International students who stayed at the same Texas community college, $t(68) = 2.62, p = .011$. This difference represented a small effect size (Cohen’s *d*) of 0.41 (Cohen, 1988). The 1-year persistence rates of International students in the 2006-2007 academic year were more than 12 percentage points higher than the 1-year persistence rates of International students in the 1999-2000 academic year. Table 4 contains the descriptive statistics for this analysis.

Table 4: Descriptive Statistics for Comparisons of 1-Year Persistence Rates Over Time of International Students Who Stayed in Texas Community Colleges

| Academic Year Comparisons | <i>n</i> of community colleges | <i>M</i> % | <i>SD</i> % |
|---------------------------|--------------------------------|------------|-------------|
| Beginning to Midpoint | | | |
| 1999-2000 | 69 | 37.54 | 29.69 |
| 2006-2007 | 69 | 49.57 | 29.41 |
| Beginning to Endpoint | | | |
| 1999-2000 | 69 | 37.54 | 29.69 |
| 2013-2014 | 69 | 47.14 | 33.79 |
| Midpoint to Endpoint | | | |
| 2006-2007 | 70 | 48.86 | 29.80 |
| 2013-2014 | 70 | 46.47 | 34.01 |

With respect to the midpoint to endpoint comparison (i.e., 2006-2007 and 2013-2014 comparison), a statistically significant difference was not present in the 1-year persistence rates for International students who stayed at the same Texas community college, $t(69) = 0.44, p = .66$. The 1-year persistence rates of International students in the 2006-2007 academic year and in the 2013-2014 academic year were unchanged. Revealed in Table 4 are the descriptive statistics for this analysis.

Concerning the beginning point to endpoint comparison (i.e., 1999-2000 and 2013-2014 comparison), a statistically significant difference was revealed in the 1-year persistence rates for International students who stayed at the same Texas community college, $t(68) = 2.07, p = .043$. This difference represented a small effect size (Cohen's d) of 0.32 (Cohen, 1988). The 1-year persistence rates of International students in the 2013-2014 academic year were more than nine percentage points higher than the 1-year persistence rates of International students in the 1999-2000 academic year. Delineated in Table 4 are the descriptive statistics for this analysis. Shown in Figure 1 are the changes in the 1-year persistence rates of International students who stayed in Texas community colleges in the beginning point (i.e., 1999-2000 academic year), the midpoint (i.e., 2006-2007 academic year), and the endpoint (i.e., 2013-2014 academic year).

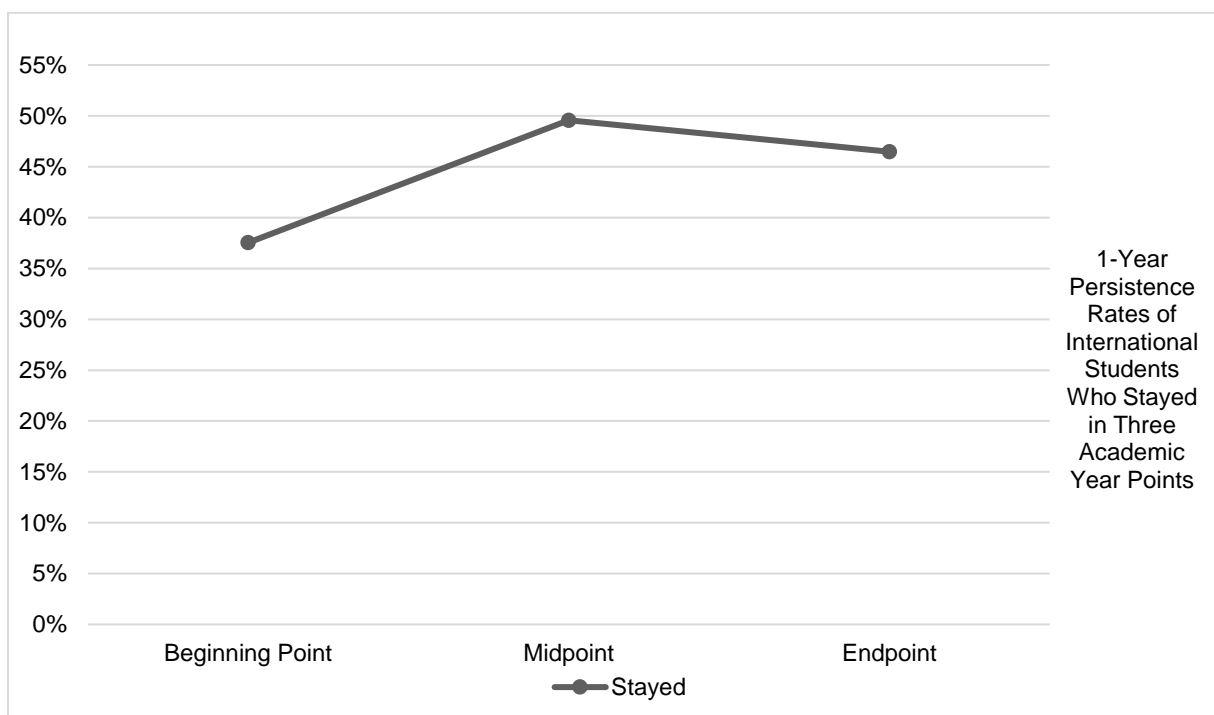


Figure 1. Changes in the 1-year persistence rates of International students who stayed in Texas community colleges in the beginning point (i.e., 1999-2000 academic year), the midpoint (i.e., 2006-2007 academic year), and the endpoint (i.e., 2013-2014 academic year).

Results for Research Question Three

For the third research question, What is the difference in the 1-year persistence rates of International students who transferred to a different Texas community college between the 1999-2000 and the 2006-2007 academic years, between the 2006-2007 and the 2013-2014 academic years, and between the 1999-2000 and the 2013-2014 academic years?, three parametric dependent samples t -tests were conducted. These three comparisons provide an analysis of the extent to which changes had occurred from (a) the beginning point (i.e., 1999-2000 academic year) to the midpoint (i.e., 2006-2007 academic year); (b) the midpoint to the endpoint (i.e., 2013-2014 academic year); and (c) the beginning point to the endpoint. With respect to the beginning to midpoint comparison (i.e., 1999-2000 and 2006-2007 comparison), a statistically significant difference was yielded in the 1-year persistence rates for International students who transferred to a different Texas community college, $t(68)$

= 2.54, $p = .013$. This difference represented a small effect size (Cohen’s d) of 0.38 (Cohen, 1988). The 1-year persistence rates of International students in the 2006-2007 academic year were more than 2 percentage points lower than the 1-year persistence rates of International students in the 1999-2000 academic year. Table 5 contains the descriptive statistics for this analysis.

Table 5: Descriptive Statistics for Comparisons of 1-Year Persistence Rates Over Time of International Students Who Transferred to Different Texas Community Colleges

| Academic Year Comparisons | n of community colleges | $M\%$ | $SD\%$ |
|---------------------------|---------------------------|-------|--------|
| Beginning to Midpoint | | | |
| 1999-2000 | 69 | 3.71 | 7.06 |
| 2006-2007 | 69 | 1.49 | 4.32 |
| Beginning to Endpoint | | | |
| 1999-2000 | 69 | 3.71 | 7.06 |
| 2013-2014 | 69 | 1.59 | 6.35 |
| Midpoint to Endpoint | | | |
| 2006-2007 | 70 | 1.47 | 4.29 |
| 2013-2014 | 70 | 1.57 | 6.31 |

Concerning the midpoint to endpoint comparison (i.e., 2006-2007 and 2013-2014 comparison), a statistically significant difference was not present in the 1-year persistence rates for International students who transferred to a different Texas community college, $t(69) = -0.11, p = .91$. The 1-year persistence rates of International students in the 2006-2007 academic year and in the 2013-2014 academic year were unchanged. Delineated in Table 5 are the descriptive statistics for this analysis.

Regarding the beginning point to endpoint comparison (i.e., 1999-2000 and 2013-2014 comparison), a statistically significant difference was not revealed in the 1-year persistence rates for International students who transferred to a different Texas community college, $t(68) = 1.80, p = .076$. The 1-year persistence rates of International students in the 1999-2000 academic year and in the 2013-2014 academic year were unchanged. Revealed in Table 5 are the descriptive statistics for this analysis. Depicted in Figure 2 are the changes in the 1-year persistence rates of International students who transferred to a different Texas community college in the beginning point (i.e., 1999-2000 academic year), the midpoint (i.e., 2006-2007 academic year), and the endpoint (i.e., 2013-2014 academic year).

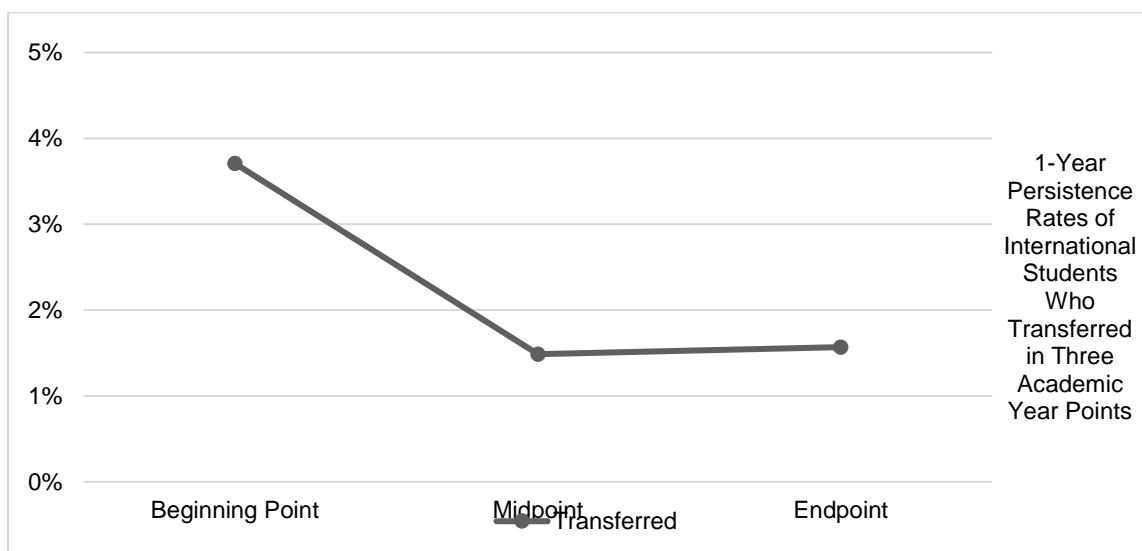


Figure 2. Changes in the 1-year persistence rates of International students who transferred to a different Texas community college in the beginning point (i.e., 1999-2000 academic year), the midpoint (i.e., 2006-2007 academic year), and the endpoint (i.e., 2013-2014 academic year).

Results for Research Question Four

With respect to the fourth research question, To what extent are trends present in the 1-year persistence rates by the institutional status (i.e., stayed or transferred) of International students from the 1999-2000 through the 2013-2014 academic years?, a line graph was used to show the trends across the 15 academic years. Although the 1-year persistence rates of International students who stayed at the same Texas community colleges fluctuated over these academic years, the 1-year persistence rates increased slightly. On the other hand, during the same academic years, the 1-year persistence rates of International students who transferred to different Texas community colleges trended down trivially. Depicted in Figure 3 are the trends in the 1-year persistence rates of International students who stayed or transferred to a different Texas community college in the 1999-2000 through the 2013-2014 academic years.

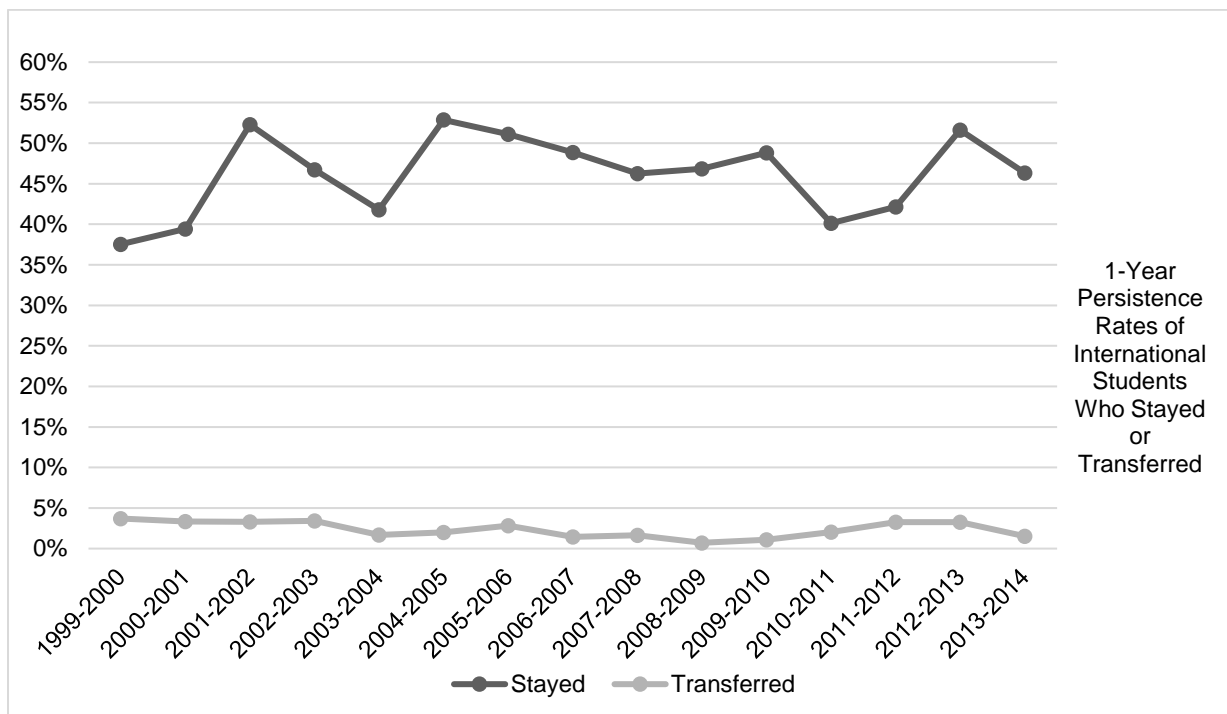


Figure 3. Trends in the 1-year persistence rates of International students who stayed or transferred to a different Texas community college in the 1999-2000 through the 2013-2014 academic years.

Discussion

In this multiyear, statewide study, the degree to which 1-year persistence rates differed by the institutional status (i.e., stayed or transferred) of International students who were enrolled in Texas community colleges in 15 academic years (i.e., 1999-2000 through 2013-2014) was investigated. In all 15 academic years, International students who stayed at the same Texas community college had statistically significantly higher 1-year persistence rates than International students who transferred to a different Texas community college. In other words, International students who stayed at the same Texas community college were more likely to persist than International students who transferred to a different Texas community college. In these 15 academic years, the differences in the 1-year persistence rates by the institutional status of International students all represented very large effect sizes. Table 6 contains the results for the effect sizes and Cohen’s *ds* for the 15 academic years.

Table 6: Results for the Effect Sizes and Cohen's ds for the Differences in 1-Year Persistence Rates Between International Students Who Stayed or Transferred to a Different Texas Community College in 15 Academic Years

| Academic Year | Effect Size | Cohen's <i>d</i> |
|---------------|-------------|------------------|
| 1999-2000 | Large | 1.57 |
| 2000-2001 | Large | 1.69 |
| 2001-2002 | Large | 2.30 |
| 2002-2003 | Large | 1.89 |
| 2003-2004 | Large | 1.87 |
| 2004-2005 | Large | 2.29 |
| 2005-2006 | Large | 2.22 |
| 2006-2007 | Large | 2.23 |
| 2007-2008 | Large | 1.82 |
| 2008-2009 | Large | 1.88 |
| 2009-2010 | Large | 2.04 |
| 2010-2011 | Large | 1.64 |
| 2011-2012 | Large | 1.66 |
| 2012-2013 | Large | 2.05 |
| 2013-2014 | Large | 1.86 |

Over the 15 academic years, the 1-year persistence rates of International students who stayed at the same Texas community college ranged from 37.54% to 52.87%, and the average percentage for the 1-year persistence rates for these academic years was 46.19%. Even though the 1-year persistence rates of International students who stayed the same Texas community college fluctuated over these 15 academic years, these 1-year persistence rates increased slightly over the years. In contrast, the 1-year persistence rates of International students who transferred to a different Texas community college during the same 15 academic years ranged from 0.72% to 3.71%, and the average percentage for the 1-year persistence rates for these academic years was 2.35%. The 1-year persistence rates of International students who transferred to a different Texas community college declined slightly over the 15 academic years (i.e., 1999-2000 through 2013-2014).

The 1-year persistence rates of International students who stayed at the same Texas community were much higher than the 1-year persistence rates of International students who transferred to a different Texas community college in the 15 academic years. In fact, the highest 1-year persistence rates (i.e., 52.87%) of International students who stayed at the same Texas community college were 14 times higher than the highest 1-year persistence rates (i.e., 3.71%) of International students who transferred to a different Texas community college in the 15 academic years. Similarly, the lowest 1-year persistence rates (i.e., 37.54%) of International students who transferred to a different Texas community college were 52 times higher than the lowest 1-year persistence rates (i.e., 0.72%) of International students who transferred to a different Texas community college during the same academic years (i.e., 1999-2000 through 2013-2014). These large differences are clearly indicative that transferring to a different Texas community college is detrimental to International students persisting in their educational pursuits.

Three comparisons were conducted in this study to determine the degree to which changes had occurred in the difference in the 1-year persistence rates of International students who stayed at the same Texas community from (a) the beginning point (i.e., 1999-2000 academic year) to the midpoint (i.e., 2006-2007 academic year); (b) the midpoint to the endpoint (i.e., 2013-2014 academic year); and (c) the beginning point to the endpoint. Based upon these results, the 1-year persistence rates of International students who stayed at the same Texas community college increased from the beginning point to the midpoint by 12.03 percentage points (i.e., from 37.54% to 49.57%). Similarly, the 1-year persistence rates increased from the beginning point to the endpoint by 9.60 percentage points (i.e., from 37.54% to 47.14%). However, the 1-year persistence rates of International students who stayed at the same Texas community college decreased from the midpoint to the endpoint by 2.40 percentage points (i.e., from 48.86% to 46.47%). Therefore, the 1-year persistence rates of International students who stayed at the same Texas community had the highest increase in the first eight academic years

(i.e., 1999-2000 through 2006-2007). This increase could be a result of an effort from Texas community colleges that provided support and help to their International students to have higher 1-year persistence rates.

The same three comparisons were performed on the 1-year persistence rates of International students who transferred to a different Texas community college. These 1-year persistence rates of International students who transferred to a different Texas community college decreased from the beginning point to the midpoint by 2.22 percentage points (i.e., from 3.71% to 1.49%). Similarly, the 1-year persistence rates of International students who transferred to a different Texas community college declined from the beginning point to the endpoint by 2.12 percentage points (i.e., from 3.71% to 1.59%). However, the 1-year persistence rates of International students who transferred to a different Texas community college remained relatively the same from the midpoint to the endpoint. The 1-year persistence rates of International students who transferred to a different Texas community college did not improve over the 15 academic years.

In contrast to Black students and Hispanic students, International students move from other countries to the United States to begin their higher education. Therefore, they deal with speaking a language (i.e., English) that is not their first language. The challenges involved in not speaking English and in not being fluent with this language might cause many International students to struggle during their postsecondary experience, which might prevent them from having high 1-year persistence rates (Park, Lee, Choi, & Zepernick, 2017). In a recent comparison of persistence rates between International and traditional students, Alsakran and Slate (2018) established that the 1-year persistence rates and 2-year persistence rates of International students were statistically significantly lower than the 1-year persistence rates and the 2-year persistence rates of traditional students.

Connections with Existing Literature

Results from this multiyear, statewide study are commensurate with the results of other researchers (i.e., Moss, 2017; Moss & Slate, 2016; Stagg, 2017). These researchers established that Texas community college students who stayed at the same Texas community college had higher 1-year persistence rates than Texas community college students who transferred to a different Texas community college. Similarly, the 1-year persistence rates of International students who stayed at same Texas community college were higher than the 1-year persistence rates of International students who transferred to a different Texas community college in the 15 academic years (i.e., 1999-2000 through 2013-2014). However, when the results of this study were compared to the results of other researchers (i.e., Moss, 2017; Stagg, 2017), International students who stayed at the same Texas community college had a higher range of 1-year persistence rates (i.e., from 37% to 52%) than the range of 1-year persistence rates of Black students (i.e., from 38% to 46%), and had a lower range of 1-year persistence rates than Hispanic students (i.e., from 54% to 60%). As such, the 1-year persistence rates of International students were better than the 1-year persistence rates of Black students but lower than the 1-year persistence rates of Hispanic students.

Implication for Policy and Practice

Based on the results of this multiyear, statewide study, several implications for policy and for practice can be made. First, Texas community college leaders need to audit the 1-year persistence rates of their International students to ensure that these low 1-year persistence rates are not preventing their International students from persisting through their first-year in college. By continuously analyzing these 1-year persistence rates, leaders in Texas community colleges could react to the low 1-year persistence rates by providing supportive initiatives that could help their International students improve their 1-year persistence rates. Second, Texas community college leaders need to investigate the reasons that their International students have low 1-year persistence rates, especially when they transfer to a different Texas community college. Third, Texas community college leaders need to provide programs and services that help their International students persist from year to year. Fourth, educational leaders in Texas postsecondary setting are encouraged to provide information about the education system, culture, environment, and U.S. laws to their prospective International students upon their

arrival to Texas community colleges. By doing so, International students would have the essential information that could help them adapt to the new environment easily.

Administrators and practitioners in Texas community colleges could also benefit from the results of this study. These administrators and practitioners need to understand that their International students are not the same as their traditional students because they face different challenges and have different experiences during their time in college than traditional students. Therefore, these administrators and practitioners should attend orientations and intensive sessions where information about International students are discussed and explained. More important, administrators and practitioners at Texas community colleges should give their International students special attention within the classroom because these students might be struggling with the language, experiencing stress and depression, or having difficulties adapting to the new environment and culture. By understanding International students and their culture, background, prior education, and personalities, Texas community colleges administrators and practitioners could support these International students and could help them have higher 1-year persistence rates.

Recommendations for Future Research

Based upon the results of this empirical investigation, several recommendations can be made for future research. First, conducting a similar study on the 1-year persistence rates of International students in Texas 4-year universities would add to the current research literature about International students and about their 1-year persistence rates. A lack of knowledge currently exists about the persistence rates of International students at 4-year universities. To date, only a few researchers (e.g., Andrade, 2008; Kwai, 2009; Mamiseishvili, 2012b) have investigated factors related to the persistence rates of International students at 4-year universities. The results of this study are solely based on International students who were enrolled in Texas community colleges. However, whether the results of this study are generalizable to International students in states other than Texas is not known. Therefore, a second recommendation for researchers is to replicate this study in community colleges in other states.

Third, this study could be further expanded by investigating the degree to which male and female International students might differ in their 1-year persistence rates. By determining if such differences exist between male and female International students, educational leaders could provide different programs and services to help these International students. A final recommendation for future research is conducting a qualitative study about International students in Texas community colleges to understand the challenges faced by International students. Conducting this type of qualitative study could help Texas community college leaders determine the reasons why International students have low 1-year persistence rates especially when they transfer to a different Texas community college. These recommendations would be additional information to the existing literature about International students and about their 1-year persistence rates.

Conclusion

The purpose of this study was to determine the degree to which 1-year persistence rates of International students differed by their institutional status (i.e., stayed or transferred) in Texas community colleges. A second purpose of this study was to identify any trends that were present in the 1-year persistence rates by the institutional status of International students in the 1999-2000 academic year through the 2013-2014 academic year. Inferential statistical analyses revealed that International students who stayed at the same Texas community college had statistically significantly higher 1-year persistence rates than did International students who transferred to a different Texas community college. In all 15 academic years, very large effect sizes were present.

The 1-year persistence rates of International students who stayed at the same Texas community college ranged from 37.54% to 52.87%. In contrast, the 1-year persistence rates of International students who transferred to a different Texas community college during the same 15 academic years ranged from 0.72% to 3.71%. Over the 15 academic years, the 1-year persistence rates of International students who stayed at the same Texas community college increased slightly, whereas the 1-year persistence rates of International students who

transferred to a different Texas community college decreased trivially. The results of this study were indicative that International students who stayed at the same Texas community college were more likely to persist than International students who transferred to a difference Texas community college.

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