

THE RED AND BLUE EFFECT: PREDICTING NEW INTERNATIONAL STUDENTS BY 2016 U.S. PRESIDENTIAL ELECTION OUTCOMES

Ibrahim Bicak
University of Chicago
Z.W. Taylor
The University of Southern Mississippi

ABSTRACT

For the first time in U.S. higher education history, new international student enrollment at four-year U.S. institutions declined for the second consecutive academic year in 2017-2018. Many studies have investigated why international students choose to pursue U.S. higher education. However, scant research has explored how U.S. politics affects the number of new international students studying in the U.S. We explore whether there was a “red effect” (Republican counties) or a “blue effect” (Democratic counties) experiencing declines in international student enrollment. Using institutional-level fixed effects approaches, new international student enrollment declined at many institutions in Republican-voting counties, while new international student enrollment remained steady or increased at institutions in Democratic-voting counties. Implications for research, practice, and international education are addressed.

Keywords: international students, enrollment, politics, 2016 US presidential election, Trump, Clinton

During the 2017-2018 academic year, United States (U.S.) institutions higher education experienced a unique, international student phenomenon for the first time. Since the mid-1970s, international student enrollment in U.S. institutions has maintained a steady and upward trajectory, as fewer than 200,000 international students were enrolled in U.S. institutions in 1975 compared to over one million international students in 2019 (Israel & Batalova, 2021). However, after years of steady gains, new international student enrollment in U.S. institutions fell 3% in 2016, 7% in 2017, and 1% in 2018 and 2019 (Institute for International Education, 2020; Israel & Batalova, 2021).

Educational researchers, policy makers, and members of the U.S. press have hypothesized that these consecutive years of enrollment decline could be owed to more stringent Visa application policies for international students pursuing higher education in the U.S. or a strong U.S. dollar which has resulted in relatively higher U.S. tuition prices for international students (Cooper, 2018; Redden, 2018; Torbati, 2018). For instance, in 2016, a typical international student studying as an undergraduate in a U.S. institution has paid \$23,500 per academic year in tuition and fees, over three times as much as the average U.S. citizen paid (National Center for Education Statistics, 2022).

However, several researchers have suggested that results from the 2016 U.S. Presidential Election—and a real or perceived anti-immigration sentiment in the United States—may be influencing where international students choose to study (Johnson, 2018; Pottie-Sherman, 2018), going as far as writing headlines that read, “Is the Trump Effect Scaring Away Prospective International Students?” (Patel, 2018, para. 1). Without specifically naming the person or people responsible for the decline in new international student enrollment, President of George Mason University Ángel Cabrera said, “While other countries work hard to attract international students, we are managing to send a message that talented foreigners are not welcome here, just when we most need them” (Anderson & Svrluga, 2018, para. 5). Inversely, Caroline Casagrande, the Deputy Assistant Secretary for Academic Programs in the U.S. Department of State's Bureau of Educational and Cultural Affairs, argued, “It’s quite frankly unwarranted

to say it's [the decline in new international student enrollment] completely the results of a political environment," (Anderson & Svrluga, 2018, para. 13).

Whether there exists a real or perceived anti-immigration sentiment in the United States is a topic for current and future political debate, especially as that sentiment relates to international higher education (Cooper, 2018; Redden, 2018). Instead, the study at hand seeks to quantify whether Cabrera or Casagrande's assertions are accurate. Since the 2000 Presidential Election in the U.S., the Republican party has been associated with the color red, and the Democratic party with the color blue. Research related to Cabrera's concerns has emerged (Johnson, 2008; Pottie-Sherman, 2018), suggesting that anti-immigration sentiment from former President Trump may have influenced international student enrollment patterns and post-graduation decisions, possibly producing a "red effect," with international students in the United States potentially avoiding institutions in "red" or Republican-voting areas. In short, this study will answer a simple question related to decline in new international student enrollment in U.S. institutions of higher education: Is there a red or blue effect as it relates to international student enrollment in U.S. institutions of higher education?

Using a fixed effects approach at the county-level, this study uses panel data to answer two primary research questions: 1.) Did new international student enrollment (measured in fall first-time undergraduate international student enrollment) decline in Republican-voting counties after the 2016 U.S. President Election? and 2.) Did new international student enrollment increase in Democratic-voting counties after the 2016 U.S. Presidential Election? Answering these questions may inform the international education and political science research communities regarding the impact of a presidential election on international higher education, specifically in a United States context.

LITERATURE REVIEW

For decades, research has investigated why international students choose to pursue higher education in another country (Chen, 2008; Cubillo et al., 2006; Darby, 2015; Gatfield & Chen, 2006; Maringe & Carter, 2007; Mazzarol & Soutar, 2002; Wilkins, Balakrishnan, & Huisman, 2012). However, relatively few studies of international student choice have addressed the political climate—real or perceived—of the institution's country as a deciding factor of international student choice.

Early work in the field suggested the strength of the economy in a student's home country may influence a student to pursue higher education outside of one's country; however, the primary factor was an excess demand for higher education in developing countries (Lee & Tan, 1984). McMahon (1992) supported these findings, arguing for a push and pull model of international student choice. Of push factors, McMahon (1992) reasoned a home country's economic strength, the level of involvement of the home country in the global economy, and the availability of higher education opportunities in one's home country were most often determinants of international student choice. Of pull factors, McMahon (1992) suggested international students were often drawn to countries with a larger economy than their home country, while international students also preferred studying in countries with economic and/or political ties to one's home country. However, McMahon's (1992) work posited a country's political ties to one's home country as a pull factor, meaning a positive relationship between countries will pull international students toward a certain country. McMahon's (1992) work did not suggest that political relationships between countries could be a push factor, deterring international students from choosing a specific country in which to pursue higher education.

Mazzarol and Soutar (2002) expanded upon McMahon's (1992) work to develop a "push and pull" model of international student choice (p. 82). Surveying prospective international students from Indonesia, Taiwan, and China, Mazzarol and Soutar (2002) discovered that "the level of knowledge a student has of the host country" (p. 84) was a strong pull factor influencing international students from all three countries. Other pull factors included "the importance of recommendations from friends and relatives" (Mazzarol & Soutar, 2002, p. 85) and "the importance of cost issues" including "social cost" (p. 86). Specific to "social cost," Mazzarol and Soutar (2002) learned prospective international students considered levels of "crime and safety or racial discrimination" as pull factors, as well as the "presence of an established population of international students in the selected host country" (p. 86). However, nowhere in their findings did Mazzarol and Soutar (2002) uncover any political factors that could influence an international student's decision, partially because their study frames push and pull factors as factors pushing students *away* from their country and factors *pulling* students toward a country. Mazzarol and Soutar (2002) did not frame any push factors which may be *pushing* students *away* from a host country.

In a meta-analysis of international student choice research, Cubillo et al. (2006) posited an international student choice model which included five main strands of international student influence: "personal reasons," "institution

image,” “programme evaluation,” “city effect,” and “country image effect” (p. 107). Regarding a host country’s “image effect,” Cubillo et al. (2006) urged that a country’s “cultural distance,” “social reputation,” and “immigration procedures” all influence international student choice (p. 108). However, Cubillo et al. (2006) reasoned that “Country image effect (country-of-origin) refers to the picture, the reputation, [and] the stereotype that consumers attach to products or services of a specific country” (p. 109), but the researchers did not elaborate on this definition to include a discussion of a country’s political climate. Furthermore, of a host country’s “city effect” (p. 107), Cubillo et al. (2006) argued “The city represents the environment in which the service will be produced and consumed,” while “...the students’ perception about the destination city will influence the decision process as well as the country image” (p. 109). Again, the researchers did not elaborate on this definition to include a discussion of a country’s political climate.

Other studies have explored international student choice of specific countries, including Canada (Chen, 2008), the United Kingdom (Maringe & Carter, 2008), and the United Arab Emirates (Wilkins et al., 2012), as well as specific U.S. institutions such as California State University at San Bernardino (Darby, 2015) have discovered findings like that of Mazzarol and Soutar (2002) and Cubillo et al. (2006). However, few studies of international education in the United States have directly addressed the U.S. political climate and whether national-level leadership specifically influences international student choice to study in the United States.

First, Lee et al.’s (2006) analysis of U.S. higher education in the aftermath of 9/11 suggested that the U.S. government’s policies and practices related to national security may have unduly targeted international students, positioning these students as threats to United States. Yet, Lee et al.’s (2006) study was not an empirical study using quantitative or qualitative international student data, instead reflecting upon how U.S. higher education has considered international students both socially and economically valuable to the United States in general. However, Johnson’s (2018) qualitative study of international students studying at the University of North Dakota unearthed substantial student concerns over Trump-era immigration policies. After interviewing 42 international students (20 undergraduates and 22 graduate students), Johnson (2018) learned that most international students felt uneasy and anxious about Trump’s attitudes toward international students, with international students expressing serious concerns about whether they could freely travel back and forth from their home country while studying in the United States. Moreover, international student activists shared that Trump’s anti-immigration rhetoric influenced their decision to withdraw from political protesting and related activities, as well as made students feel as if their professional career would be threatened if they stayed in the United States under a Trump presidency. In all, although students did many benefits from studying in the U.S., most international students felt as if their livelihood was being threatened by Trump’s words and actions.

Similarly, Pottie-Sherman (2018) interviewed 18 recently graduated international students from an institution in Ohio, finding that international graduates felt considerable anxiety surrounding Trump’s travel ban and their likelihood of facilitating immigration to the United States for family members. As a result, many international graduates were considering adjusting their plans for staying in and contributing to the United States, instead weighing options for living elsewhere.

As a result, putting a spin on Mazzarol and Soutar’s (2002) “pull and pull” model of international student choice (p. 82), this study explores whether the U.S. political climate has been a push factor, meaning the climate has pushed away new international students, hinted at by emerging research (Johnson, 2018; Pottie-Sherman, 2018). As a result, to fill the gap in the research and address an important topic in international education in the United States, this study will explore whether the results of a divisive 2016 U.S. Presidential Election affected new international student enrollment in the years after the election.

METHODS

The following sections will detail how the researchers identified data sources, selected analytic methods, and addressed the limitations of the study. Data is available upon request from the authors.

Conceptualizing the Study and Appropriate Data Sources

This study sought to explore relationships between how U.S. counties voted in the 2016 U.S. Presidential Election and subsequent international student enrollment in U.S. institutions of higher education in those counties. As a result, to analyze new international student enrollment as it relates to 2016 voting outcomes, the research team needed to engage with two different data sources.

First, the team collected 2016 U.S. Presidential Election results at the county level from the Congressional Quarterly Press Voting and Election Collection (CQ Press, 2019). Even though little education research has from other disciplines have used Congressional Quarterly data in quantitative studies focused on U.S. consumer investment tendencies (Jens, 2017) and telecommunications research (Martin & Yurukoglu, 2017). The research team used a binary coding strategy to code each county as Hillary R. Clinton (Clinton)-voting (0) or Donald J. Trump (Trump)-voting (1).

The research team collected longitudinal institution-level data (Fall 2013 to Fall 2017) from the Integrated Postsecondary Education Data System (IPEDS), specifically IPEDS' Fall Enrollment Survey. This data included the number of fall first-time undergraduate international students, abbreviated in this study as "new international students." After downloading these two datasets from two different sources, the research team merged the county-level U.S. Presidential Election results with new international student enrollment data. This procedure produced a five-year panel dataset that included each institution's fall new international student enrollment and whether these institutions are located in Clinton-voting counties or Trump-voting counties in the 2016 U.S. Presidential Election. By adopting this approach, the research team was able to articulate international student enrollment change over time, especially before, during, and after the years of the 2016 U.S. Presidential Election.

Analytical Approach

Given the need to analyze a longitudinal dataset while examining institution-level characteristics over this longitudinal period, a fixed effects model of regression analysis (Cooper & Hedges, 1993) approach was appropriate. Cooper and Hedges (1993), experts in the field of research methods and quantitative analyses, reasoned that fixed effects models are appropriate for panel (longitudinal) datasets that require a fixing of certain characteristics. For the purposes of this study, we have fixed effects in the form of institutions of higher education—these institutions themselves did not change their physical location and must be kept fixed in the model, while adding other characteristics to the model that did change over time, such as new international student enrollment numbers. For these reasons and the purpose of our study, Cooper and Hedges' (1993) notion of the fixed effects model was appropriate for data analysis.

To test whether there was change in new international student enrollment in Clinton- and Trump-voting counties before and after 2016 U.S. Presidential Election, the research team employed the following institutional-level fixed-effects model:

$$Y_{it} = \beta_1 2013_t + \beta_2 2014_t + \beta_3 2016_t + \beta_4 2017_t + \alpha_i + \varepsilon_{it} \quad (1)$$

The outcome variable of interest— Y_{it} —represents an institution i 's first-time undergraduate international enrollment. 2013_t , 2014_t , 2016_t , and 2017_t represent time dummy variables that capture change in the first-time undergraduate international enrollment over that time period. The team used 2015 as reference group to examine the change before and after 2016 U.S. Presidential Election, included in table notes. Institutional fixed effects (α_i) takes into account all time-varying and time invariant institutional characteristics within the institutions. ε_{it} is the error term. The research team employed two different models for institutions that are located in Clinton-voting counties and Trump-voting counties, allowing the researchers to explore whether voting outcomes influenced new international student enrollment after 2016.

As the research team sought to understand new international student enrollment change over the time, employing fixed effects models enabled the team to predict relationships in new international student enrollment over the time within each institution of higher education. This approach recognizes that each U.S. institution has their own unique institutional characteristics in terms of enrolling international students (e.g., community colleges versus research universities). By using institutional fixed-effects models, the research team controlled for unobserved variables (time varying and time-invariant variables) that are related to international enrollment within each institution, providing a comprehensive overview of how voting outcomes may influence new international student enrollment.

Descriptive statistics include a historical overview of new international student enrollment in Clinton- and Trump-voting counties across all time-invariant institutional characteristics in this study (Tables 1 and 2). This study's fixed effects models predict new international student enrollment by Clinton-voting counties versus Trump-voting counties (Table 3), by institutional sector (public, private non-profit, and private for-profit; Table 4), institutional type (four-year and less-than-four-year; Table 5), geographic location (town/rural, suburban, and urban; Table 6), and Carnegie classification in Clinton-voting counties versus Trump-voting counties (Tables 7 and 8). By adopting this analytic approach, the team was able to compare institutions with similar time-invariant institutional

characteristics, possibly informing the international education community of how time-invariant characteristics may influence new international student enrollment depending on voting outcomes.

Limitations

With all quantitative studies, this study is limited by the analytic approach. This study employed fixed effects models (Cooper & Hedges, 1993) to articulate the change in new international student enrollment over time considering a county’s 2016 U.S. Presidential Election result. This study does not consider time-variant institutional characteristics alongside time-invariant characteristics to explore whether a change in out-of-state tuition or institutional endowment may have influenced new international student enrollment after the 2016 U.S. Presidential Election. As a result, future research could expand upon this study and develop an analytic model which encompasses time-varying and time-invariant characteristics across a longer time period.

In addition, educational policy researchers could investigate how county- and state-level immigration and international student policies affect new international student enrollment at U.S. institutions of higher education, possibly providing a more lucid articulation of why new international student enrollment has declined in the U.S. over the 2016-2017 through 2019-2020 academic years (Institute for International Education, 2020).

RESULTS

Descriptive Statistics

A historical analysis of new international student enrollment by Clinton- and Trump-voting counties can be found in Figure 1.

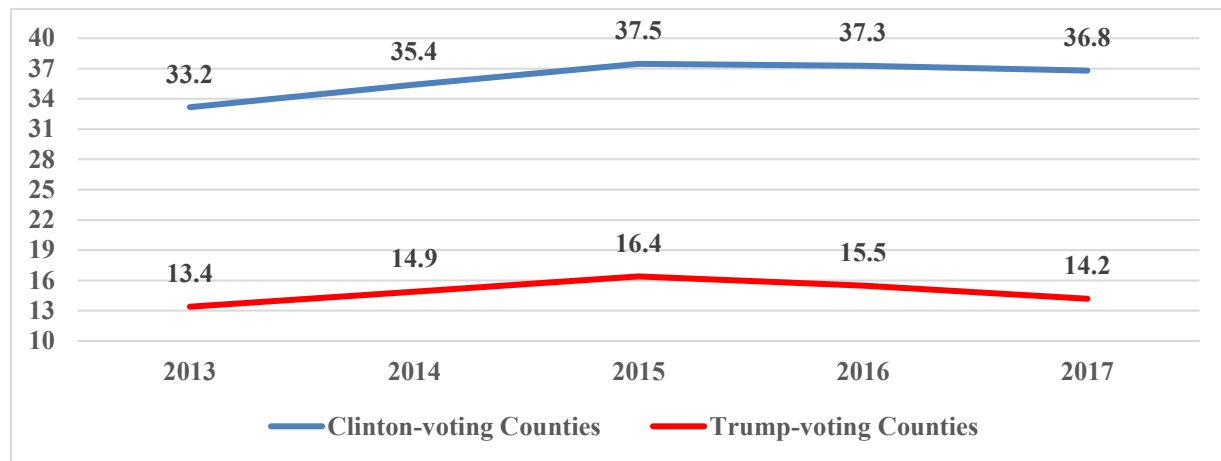


Figure 1: Average New International Student Enrollment per Institution by Clinton- and Trump-Voting Counties in 2016 U.S. Presidential Election, 2013-2017

Figure 1 illustrates that new international student enrollment has been higher at institutions in Clinton-voting counties since 2013, as 33.2 new international students enrolled per institution in Clinton-voting counties in 2013 compared to 13.4 new international students per institution in Trump-voting counties in 2013. Across both 2016 U.S. Presidential candidates, new international student enrollment per institution peaked in 2015, with institutions in Clinton-voting counties enrolling an average of 37.5 new international students and institutions in Trump-voting counties enrolling an average of 16.4 new international students. New international student enrollment also declined in consecutive years at institutions in both Clinton- and Trump-voting counties, as an average of 36.8 new international students enrolled at institutions in Clinton-voting counties in 2017, whereas an average of 14.2 new international students enrolled at institutions in Trump-voting counties in 2017. A historical analysis of new international student enrollment by Clinton-voting counties and time-invariant institutional characteristics can be found in Table 1.

Table 1: A Historical Analysis of New International Student Enrollment by Institutions Within 2016 Hillary Clinton-Voting Counties

	2013			2014			2015			2016			2017		
	Mean	% Change	N*	Mean	% Change	Mean	% Change	N*	Mean	% Change	Mean	% Change	N*		
Total	33.2	-	198 3	35.4	6.6%	1974	37.5	5.9%	1980	37.3	-0.5%	1966	36.8	-1.3%	1937
Baccalaureate	17.8	-	142 7	19.0	6.7%	1419	20.3	6.8%	1423	19.3	-5.0%	1411	19.0	-1.6%	1388
Master's	23.7	-	348	24.7	4.2%	347	24.9	0.8%	349	24.9	0.0%	347	24.5	-1.6%	341
Doctoral	40.1	-	55	44.9	11.9%	55	47.2	5.1%	55	49.3	4.5%	55	44.1	-10.5%	55
Research, High	92.7	-	57	98.0	5.7%	57	105.5	7.7%	57	97.1	-8.0%	57	98.4	1.3%	57
Research, Very High	256.1	-	96	274.2	7.1%	96	291.9	6.5%	96	304.0	4.1%	96	297.1	-2.3%	96
Urban	43.0	-	114 6	46.3	7.7%	1140	48.5	4.8%	1147	47.5	-2.0%	1146	46.5	-2.1%	1127
Suburban	21.9	-	670	22.8	4.1%	668	25.0	9.6%	669	25.9	3.6%	658	26.2	1.2%	650
Town/Rural	11.2	-	167	11.4	1.8%	166	11.3	-0.9%	164	11.2	-0.9%	162	11.3	0.9%	160
Public	67.2	-	656	71.3	6.1%	658	76.1	6.7%	658	74.4	-2.2%	660	71.1	-4.4%	660
Non-profit	28.4	-	705	30.8	8.5%	695	31.4	1.9%	708	31.9	1.6%	699	32.7	2.5%	695
For-profit	2.7	-	622	2.5	-7.4%	621	3.1	24.0%	614	3.1	0.0%	607	2.8	-9.7%	582
Four-year	41.6	-	116 0	44.7	7.5%	1160	46.9	4.9%	1169	49.0	4.5%	1179	48.4	-1.2%	1176
Less Than Four-Year	21.3	-	823	22.1	3.8%	814	23.9	8.1%	811	19.7	-17.6%	787	18.9	-4.1%	761

*Note: N is the number of institutions of higher education in Clinton-voting counties, while the mean is the average number of international students enrolled in each institution within those Clinton-voting counties.

Table 2: A Historical Analysis of New International Student Enrollment by Institutions Within 2016 Donald Trump-Voting Counties

	2013			2014			2015			2016			2017		
	Mean	% Change	N*	Mean	% Change	N	Mean	% Change	N	Mean	% Change	N	Mean	% Change	N
Total	13.4	-	1530	14.9	11.2%	1531	16.4	10.1%	1529	15.5	-5.5%	1521	14.2	-8.4%	1514
Baccalaureate	7.3	-	1179	8.4	15.1%	1179	9.6	14.3%	1178	9.2	-4.2%	1170	9	-2.2%	1165
Master's	18.6	-	280	19.9	7.0%	281	23	15.6%	280	21	-8.7%	280	17.9	-14.8%	278
Doctoral	46	-	23	43.1	-6.3%	23	38.3	-11.1%	23	35.3	-7.8%	23	29.9	-15.3%	23
Research, High	79.1	-	38	86.8	9.7%	38	85.7	-1.3%	38	83.5	-2.6%	38	70.9	-15.1%	38
Research, Very High	257.5	-	10	302.3	17.4%	10	319	5.5%	10	285.4	-10.5%	10	261.3	-8.4%	10
Urban	18.4	-	489	21	14.1%	489	23.5	11.9%	489	23.8	1.3%	487	21.4	-10.1%	481
Suburban	16.2	-	281	18.1	11.7%	282	18	-0.6%	281	14.2	-21.1%	279	13.7	-3.5%	281
Town/Rural	9.1	-	760	9.8	7.7%	760	11.3	15.3%	759	10.6	-6.2%	755	9.8	-7.5%	752
Public	16.2	-	838	18.4	13.6%	837	20.9	13.6%	838	19.5	-6.7%	836	17.3	-11.3%	837
Non-profit	13.6	-	497	14.6	7.4%	498	14.7	0.7%	501	14.2	-3.4%	496	13.6	-4.2%	500
For-profit	0.7	-	195	0.6	-14.3%	196	1.3	116.7%	190	1.1	-15.4%	189	1.3	18.2%	177
Four-year	19.5	-	870	21.4	9.7%	874	22.5	5.1%	877	21.3	-5.3%	885	19.4	-8.9%	885
Less Than Four-Year	5.4	-	660	6.2	14.8%	657	8.3	33.9%	652	7.4	-10.8%	636	7	-5.4%	629

*Note: N is the number of institutions of higher education in Trump-voting counties, while the mean is the average number of international students enrolled in each institution within those Trump-voting counties.

Over time, new international student enrollment in Clinton-voting counties has been highest in Carnegie-classified very high research institutions, urban institutions, four-year institutions, and public institutions. From 2013-2014, the largest new international student percentage increase in Clinton-voting counties occurred at doctoral institutions (11.9% increase), while for-profit enrollment decreased (-7.4%). From 2014-2015, the largest new international student percentage increase in Clinton-voting counties occurred at for-profit institutions (24.0% increase), while enrollment at institutions in town/rural settings decreased (-0.9%). From 2015-2016, new international student enrollment decreased at many institution types in Clinton-voting counties, with the largest decreases occurring at less-than-four-year institutions (-17.6%) and Carnegie-classified high research institutions (-8.0%). During the same time period, new international student enrollment had its highest increase at four-year institutions in Clinton-voting counties (4.5%). Finally, from 2016-2017, new international student enrollment decreased the most in Clinton-voting counties at Carnegie-classified doctoral institutions (-10.5%) and for-profit institutions (-9.7%). During the same time period, new international student enrollment in Clinton-voting counties increased at non-profit institutions (2.5%).

A historical analysis of new international student by Trump-voting counties and time-invariant institutional characteristics can be found in Table 2.

Over time, new international student enrollment in Trump-voting counties has been highest in Carnegie-classified very high research institutions, urban institutions, four-year institutions, and public institutions. From 2013-2014, the largest new international student percentage increase in Trump-voting counties occurred at Carnegie-classified very high research institutions (17.4%) and less-than-four-year institutions (14.8%), while enrollment at Carnegie-classified doctoral institutions decreased (-6.3%). From 2014-2015, the largest new international student percentage increase in Trump-voting counties occurred at for-profit institutions (116.7% increase) and less-than-four-year institutions (33.9%), while enrollment at Carnegie-classified doctoral institutions decreased (-11.1%). From 2015-2016, new international student enrollment decreased at many institution types in Trump-voting counties, with the largest decreases occurring at suburban institutions (-21.1%) and for-profit institutions (-15.4%). During the same time period, new international student enrollment only increased at urban institutions in Trump-voting counties (1.3%). Finally, from 2016-2017, new international student enrollment decreased the most in Trump-voting counties at Carnegie-classified master's (-14.8%), doctoral (-15.3%), high research institutions (-15.1%), and very high research institutions (-8.4%). There were also double-digit percentage decreases at public (-11.3%) and urban (-10.1%) institutions in Trump-voting counties. During the same time period, new international student enrollment in Trump-voting counties only increased at non-profit institutions (18.2%).

Fixed Effects Models

A fixed effects model predicting first-time international undergraduate enrollment by Clinton- and Trump-voting counties can be found in Table 3.

Table 3: Fixed Effects Model Predicting New International Student Enrollment by Clinton- And Trump-Voting Counties

Variables	(Model 1) Clinton	(Model 2) Trump
Year (control=2015)		
2013	-4.225*** (0.789)	-3.062*** (0.696)
2014	-2.121* (0.675)	-1.502* (0.476)
2016	-0.450 (0.581)	-1.033* (0.461)
2017	-1.465* (0.708)	-2.385*** (0.583)
Constant	37.671*** (0.363)	16.476*** (0.382)
Observations	9,840	7,625
R-squared	0.005	0.007
Number of institutions	2,016	1,544

Notes: Robust standard errors in parentheses; *** $p < 0.001$, * $p < 0.01$, * $p < 0.05$

Results in Table 3 suggest a statistically significant decrease in new international student enrollment in 2017 at institutions located in Clinton-voting counties compared to 2015, the years before, during, and after the 2016 U.S. Presidential Election. On average, institutions in Clinton-voting counties experienced a statistically significant decrease in new international students, enrolling 1.465 fewer new international students in 2017 than in 2015 ($p < 0.05$). To a greater degree, there has been a statistically significant decrease in new international student enrollment in 2017 at institutions located in Trump-voting counties compared to 2015. On average, institutions in Trump-voting counties experienced a statistically significant decrease in new international students, enrolling 2.385 fewer new international students in 2017 than in 2015 ($p < 0.00$).

Fixed effects model predicting new international student enrollment by Clinton- and Trump-voting counties in public, private non-profit and private for-profit U.S. institutions can be found in Table 4.

Table 4: Fixed Effects Model Predicting New International Student Enrollment by Clinton- And Trump-Voting Counties, by Institution Type

Variable	(1) Clinton, Public	(2) Trump, Public	(3) Clinton, Non- profit	(4) Trump, Non- profit	(5) Clinton, For- profit	(6) Trump, For- profit
Year						
2013	-9.077*** (2.183)	-4.697*** (1.137)	-3.065*** (0.760)	-1.269 (0.881)	-0.345 (0.344)	-0.548 (0.835)
2014	-4.726* (1.935)	-2.477*** (0.741)	-1.034* (0.477)	-0.159 (0.684)	-0.560* (0.261)	-0.708 (0.841)
2016	-1.460 (1.629)	-1.428 (0.769)	0.106 (0.526)	-0.685 (0.552)	-0.023 (0.224)	-0.202 (0.243)
2017	-4.719* (1.917)	-3.642*** (0.945)	0.690 (0.700)	-1.126 (0.710)	-0.440 (0.364)	-0.062 (0.945)
Constant	76.029*** (1.026)	20.916*** (0.621)	31.680*** (0.294)	14.779*** (0.479)	3.108*** (0.148)	1.311* (0.552)
Observations	3,292	4,186	3,502	2,492	3,046	947
R-squared	0.008	0.011	0.011	0.003	0.002	0.003
Number of Institutions	660	840	727	513	638	199

Notes: Robust standard errors in parentheses; *** $p < 0.001$, * $p < 0.01$, * $p < 0.05$; the year 2015 used as control.

Results in Table 4 suggest a statistically significant decrease in new international student enrollment in 2017 at public institutions located in both Clinton- and Trump-voting counties compared to 2015. On average, public institutions in Clinton-voting counties experienced a statistically significant decrease in new international students, enrolling 4.719 fewer new international students in 2017 than in 2015 ($p < 0.05$). On average, public institutions in Trump-voting counties experienced a statistically significant decrease in new international students, enrolling 3.642 fewer new international students in 2017 than in 2015 ($p < 0.001$). There has been no statistically significant change in new international student enrollment in private non-profit and for-profit institutions in both Clinton- and Trump-voting counties in 2017 compared to 2015.

Fixed effects model predicting new international student enrollment by Clinton- and Trump-voting counties in four- and less-than-four-year U.S. institutions can be found in Table 5.

Table 5: A Historical Analysis of New International Student Enrollment by Institutions Within Fixed Effects Model Predicting New International Student Enrollment by Clinton- and Trump-Voting Counties, by Institution Type

Variables	Clinton, Four-year	Trump, Four-year	Clinton, Less Than Four- Year	Trump, Less Than Four- Year
Year				
2013	-5.579*** (1.105)	-3.182*** (0.814)	-2.369* (1.115)	-2.940* (1.217)
2014	-2.420* (0.800)	-1.111 (0.640)	-1.721 (1.186)	-2.039* (0.715)
2016	1.031 (0.799)	-1.196 (0.644)	-2.453* (0.832)	-0.888 (0.647)
2017	0.107 (0.977)	-3.177*** (0.892)	-3.563*** (0.985)	-1.387* (0.642)
Constant	47.480*** (0.494)	22.541*** (0.497)	23.237*** (0.528)	8.291*** (0.600)
Observations	5,844	4,391	3,996	3,234
R-squared	0.011	0.009	0.003	0.007
Number of Institutions	1,232	902	841	670

Notes: Robust standard errors in parentheses; *** $p < 0.001$, * $p < 0.01$, * $p < 0.05$; the year 2015 was used as control.

Results in Table 5 reveal significant new international enrollment declines in four-year and less-than-four-year institutions located in Trump-voting counties. On average, four-year institutions in Trump-voting counties experienced a statistically significant decrease in new international student enrollment, enrolling 3.177 fewer new international students in 2017 than in 2015 ($p < 0.001$). Similarly, less-than-four-year institutions located in Trump-voting counties also experienced a statistically significant decrease in new international student enrollment, enrolling 1.387 fewer new international students in 2017 than in 2015 ($p < 0.05$).

Similarly, less-than-four-year institutions in Clinton-voting counties also experienced statistically significant declines in new international student enrollment in 2017 compared to 2015 ($p < 0.001$). However, four-year institutions in Clinton-voting counties experienced an increase in new international student enrollment in 2016 and 2017 compared to 2015. It is not, however, indistinguishable from zero.

Fixed effects models predicting new international student enrollment by Clinton- and Trump-voting counties in 2016 U.S. Presidential Election in urban, suburban, and town/rural locations can be found in Table 6.

Table 6: Fixed Effects Model Predicting New International Student Enrollment by Clinton- and Trump-Voting Counties, by Institution Location

Variables	Clinton, Urban	Trump, Urban	Clinton, Suburban	Trump, Suburban	Clinton, Town/ Rural	Trump, Town/ Rural
Year						
2013	-5.641*** (1.249)	-5.076* (1.809)	-2.789* (0.941)	-2.037* (0.920)	-0.481 (0.591)	-2.151* (0.707)
2014	-2.498* (1.073)	-2.474* (1.153)	-2.000* (0.778)	0.143 (0.529)	-0.209 (0.576)	-1.484* (0.573)
2016	-1.503 (0.906)	-1.658 (1.220)	1.322 (0.740)	-0.477 (0.498)	-0.101 (0.492)	-0.574 (0.397)
2017	-3.274* (1.036)	-4.365* (1.533)	1.351 (1.127)	-0.896 (0.645)	0.124 (0.801)	-1.392* (0.531)
Constant	48.932*** (0.582)	24.333*** (0.990)	24.774*** (0.396)	16.721*** (0.317)	11.429* ** (0.320)	11.225 *** (0.394)
Observations	5,706	2,435	3,315	1,404	819	3,786
R-squared	0.005	0.010	0.009	0.009	0.001	0.008
Number of Institutions	1,182	503	704	296	170	767

Notes: Robust standard errors in parentheses; *** $p < 0.001$, * $p < 0.01$, * $p < 0.05$; the year 2015 used as control.

Results in Table 6 reveal significant new international enrollment declines at institutions in urban locations in both Clinton and Trump-voting counties. On average, urban institutions in Clinton-voting counties enrolled 3.274 fewer new international students in 2017 than in 2015 ($p < 0.05$). Similarly, urban institutions in Trump-voting counties also enrolled 4.365 fewer new international students in 2017 than in 2015 ($p < 0.05$).

Similarly, town/rural institutions in Trump-voting counties also experienced statistically significant declines in new international student enrollment in 2017 compared to 2015 ($p < 0.05$). However, town/rural institutions in Clinton-voting counties experienced an increase in new international student enrollment in 2017 compared to 2015. It is not, however, indistinguishable from zero.

Fixed effects models predicting new international student enrollment by Clinton- and Trump-voting counties in 2016 U.S. Presidential Election and Carnegie Basic 2005/2010 Classification at the bachelor's and master's level can be found in Table 7.

Table 7: Fixed Effects Model Predicting New International Student Enrollment by Clinton- and Trump-Voting Counties, by Carnegie-Classified Bachelor's and Master's Institutions

Variables	Clinton, Bachelor's	Trump, Bachelor's	Clinton, Master's	Trump, Master's
Year				
2013	-2.340*** (0.682)	-2.356* (0.757)	-1.249 (0.921)	-4.329* (1.331)
2014	-1.288 (0.704)	-1.216* (0.476)	-0.253 (0.702)	-3.020* (1.194)
2016	-1.183* (0.523)	-0.465 (0.407)	-0.062 (0.969)	-1.921 (1.213)
2017	-1.787* (0.633)	-0.699 (0.440)	-0.912 (0.859)	-5.248*** (1.431)
Constant	20.395*** (0.324)	9.681*** (0.383)	25.029*** (0.469)	22.978*** (0.863)
Observations	7,068	5,871	1,732	1,399
R-squared	0.002	0.006	0.002	0.020
Number of Institutions	1,456	1,192	352	281

Notes: Robust standard errors in parentheses; *** $p < 0.001$, * $p < 0.01$, * $p < 0.05$; the year 2015 was used as control.

Results in Table 7 reveal significant new international enrollment declines in bachelor's institutions in Clinton-voting counties. On average, bachelor's institutions in Clinton-voting counties experienced a statistically significant decrease in new international student enrollment, enrolling 1.183 fewer new international students in 2016 and 1.787 fewer in 2017 than in 2015 ($p < 0.05$). Master's institutions in Clinton-voting counties did not experience a statistically significant decline in new international students in the years 2016 and 2017. However, master's institutions in Trump-voting counties experienced a statistically significant decline in new international student enrollment, enrolling 5.248 fewer new international students in 2017 compared to 2015 ($p < 0.001$).

Fixed effects models predicting new international student enrollment by Clinton- and Trump-voting counties in 2016 U.S. Presidential Election and Carnegie Basic 2005/2010 Classification at the doctoral, high research, and very high research levels can be found in Table 8.

Table 8: Fixed Effects Model Predicting New International Student Enrollment by Clinton- and Trump-Voting Counties, by Carnegie-Classified Doctoral, High Research, and Very High Research Institutions

Variables	Clinton, Doctoral	Trump, Doctoral	Clinton, High	Trump, High	Clinton, Very High	Trump, Very High
Year						
2013	-7.073*	7.696	-12.807*	-6.658	-35.802*	-61.500
	(2.955)	(6.625)	(5.934)	(6.061)	(11.152)	(32.604)
2014	-2.255	4.783	-7.526*	1.053	-17.740*	-16.700
	(2.247)	(4.596)	(2.855)	(5.691)	(8.439)	(23.149)
2016	2.109	-3.000	-8.439*	-2.237	12.042	-33.600
	(2.984)	(2.593)	(3.437)	(5.647)	(7.901)	(33.039)
2017	-3.091	-8.435*	-7.105	-14.842*	5.167	-57.700
	(3.296)	(3.447)	(4.321)	(6.095)	(10.115)	(55.800)
Constant	47.182***	38.304***	105.491***	85.737***	291.927***	319.000***
	(1.272)	(2.233)	(1.811)	(1.967)	(5.294)	(26.837)
Observations	275	115	285	190	480	50
R-squared	0.034	0.115	0.026	0.038	0.068	0.132
Number of Institutions	55	23	57	38	96	10

Notes: Robust standard errors in parentheses; *** $p < 0.001$, * $p < 0.01$, * $p < 0.05$; the year 2015 was used as control.

Results in Table 8 reveal a significant new international enrollment decline at doctoral institutions in Trump-voting counties. On average, doctoral institutions in Trump-voting counties experienced a statistically significant decrease in new international student enrollment, enrolling 8.435 fewer new international students in 2017 than in 2015 ($p < 0.05$). Similarly, high research institutions located in Trump-voting counties also experienced a statistically significant decrease in new international student enrollment, enrolling 14.842 fewer new international students in 2017 than in 2015 ($p < 0.05$).

Although doctoral and high research institutions in Clinton-voting counties experienced a decline in new international student enrollment in 2017, these results were not statistically significant. In addition, although not statistically significant, very high research institutions in Clinton-voting counties experienced an average increase of 5.167 new international students in 2017 compared to 2015, whereas very high research institutions in Trump-voting counties experienced an average decrease of 57.7 new international students in 2017 compared to 2015.

DISCUSSION AND CONCLUSION

Prior research had not addressed how U.S. politics may influence how prospective international students view the United States as a potential host country for their higher education. This study's findings suggest the results of the 2016 U.S. Presidential Election may have influenced where new international students chose to enroll for the 2017-2018 academic year.

The descriptive statistics (Tables 1 and 2) and the fixed effects models reveal that U.S. higher education has experienced significant declines in new international student enrollment after the 2016 U.S. Presidential Election. However, Table 3's fixed effects model suggests institutions in Trump-voting counties have experienced a greater and statistically significant decline that institutions in Clinton-voting counties have not experienced. In fact, only public institutions (Table 4), less-than-four-year institutions (Table 5), and bachelor's institutions (Table 7) in Trump-voting counties have fared better considering new international student enrollment than the same institutions in Clinton-voting counties (Tables 4 and 5).

Otherwise, four-year institutions (Table 5), urban institutions (Table 6), town/rural institutions (Table 6), master's institutions (Table 7), doctoral institutions (Table 8), and high research institutions (Table 8) in Trump-voting counties have experienced statistically significant declines in new international student enrollment that institutions in Clinton-voting counties have not experienced. As a result, this study's findings inform the international education community in a variety of ways.

First, international education researchers must investigate what prospective international students know—and do not know—about the political history and voting tendencies of the area in which their host institution is located. This study did not employ qualitative methods to understand what factors led international students to enroll in certain institutions as some prior studies have (Johnson, 2018; Pottie-Sherman, 2018). From the data in this study, there is no way of knowing whether new international students were aware of the 2016 U.S. Presidential Election outcomes by county and chose not to enroll at certain institutions in Trump-voting counties. However, future research should explore how changes in executive leadership and/or national and local election outcomes influences how prospective international students explore host institutions and make enrollment decisions, building upon prior work (Johnson, 2018; Pottie-Sherman, 2018).

Furthermore, results from this study suggest some institutions were able to attract new international students regardless of the 2016 U.S. Presidential Election outcome. For instance, although high research institutions did experience declines in new international student enrollment in both Clinton and Trump counties, these declines were not statistically significant. In fact, in 2017, there was an increase in new international student enrollment at very high research institutions in Clinton-voting counties (Table 8). Similarly, suburban institutions in both Clinton- and Trump-voting counties have not experienced statistically significant declines in new international student enrollment since 2015. Researchers should investigate why these institutions were better able to maintain their influx of new international students despite a real or perceived anti-immigration sentiment in the United States, spearheaded by President Trump (Patel, 2018; Redden, 2018; Torbati, 2018).

As a result, data suggest that Patel's (2018) hypothetical "Trump effect" (para. 1) on new international student enrollment may not be hypothetical but empirical in nature. As previously stated, Caroline Casagrande, the Deputy Assistant Secretary for Academic Programs in the U.S. Department of State's Bureau of Educational and Cultural Affairs, argued, "It's quite frankly unwarranted to say it's [the decline in new international student enrollment] completely the results of a political environment," (Anderson & Svrluga, 2018, para. 13). This study argues otherwise. From here, U.S. institutions seeking to continue the diversification of their student body and to continue contributing to an ever-globalized society must take action to mitigate any effects produced by anti-immigration or anti-international executive leadership in the United States.

Articulating international student choice, Mazzarol and Soutar (2002) provided a push and pull framework of what pushes international students away from their home countries and pulls them toward a host country. Mazzarol and Soutar (2002) discovered that "the level of knowledge a student has of the host country" (p. 84) was a strong pull factor influencing international students from all three countries. Unless prospective international students dramatically change their enrollment habits in future years, it seems U.S. politics may be pushing international students away from the United States, thus pushing the United States further away from the rest of the world.

REFERENCES

- Anderson, N., & Svrluga, S. (2018). What's the Trump effect on international enrollment? Report finds new foreign students are dwindling. *The Washington Post*. https://www.washingtonpost.com/local/education/report-finds-new-foreign-students-are-dwindling-renewing-questions-about-possible-trump-effect-on-enrollment/2018/11/12/7b1bac92-e68b-11e8-a939-9469f1166f9d_story.html?noredirect=on&utm_term=.2b7e9939439e
- Chen, L. (2008). Internationalization or international marketing? Two frameworks for understanding international students' choice of Canadian universities. *Journal of Marketing for Higher Education*, 18(1), 1-33. <https://doi.org/10.1080/08841240802100113>
- Cooper, P. (2018). The real reason international students are fleeing U.S. colleges (it's not Trump). *Forbes*. <https://www.forbes.com/sites/prestoncooper2/2018/11/16/the-real-reason-international-students-are-fleeing-u-s-colleges-its-not-trump/#907e28d7c1cf>
- Cooper, H., & Hedges, L.V. (1993). *The handbook of research syntheses*. Russell Sage Foundation.
- CQ Press. (2019). Voting and elections collection. *CQ Press*. <http://library.cqpress.com/elections/>
- Cubillo, J. M., Sánchez, J., & Cerviño, J. (2006). International students' decision-making process. *International Journal of Education Management*, 20(2), 101-115. <https://doi.org/10.1108/09513540610646091>

- Darby, M. G. (2015). *Understanding why international student applicants choose a public four-year institution* (Doctoral dissertation). CSUSB Scholarworks. <https://scholarworks.lib.csusb.edu/etd/132/>
- Gatfield, T., & Chen, C. (2006). Measuring student choice criteria using the theory of planned behaviour: The case of Taiwan, Australia, UK, and USA. *Journal of Marketing for Higher Education*, 16(1), 77-95. https://doi.org/10.1300/J050v16n01_04
- Institute of International Education (IIE). 2020. Open Doors: Report on International Educational Exchange. Washington, DC: IIE. <https://opendoorsdata.org/data/international-students/>
- Israel, E., & Batalova, J. (2021). International Students in the United States. *The Online Journal of the Migration Policy Institute*. <https://www.migrationpolicy.org/article/international-students-united-states-2020>
- Jens, C. E. (2017). Political uncertainty and investment: Causal evidence from U.S. gubernatorial elections. *Journal of Financial Economics*, 124(3), 563-579. <https://doi.org/10.1016/j.jfineco.2016.01.034>
- Johnson, K. (2018). Opportunities & anxieties: Study of international students in the Trump era. *Lewis & Clark Law Review*, 22(2), 413-440. https://heinonline.org/HOL/LandingPage?handle=hein_journals/lewclr22&div=18&id=&page=
- Lee, J. J., Maldonado-Maldonado, A., & Rhoades, G. (2006). The political economy of international student flows: Patterns, ideas, and propositions. *Higher Education*, 21, 545-590. https://doi.org/10.1007/1-4020-4512-3_11
- Lee, K. H., & Tan, J. P. (1984). The international flow of third level lesser developed country students to developed countries: Determinants and implications. *Higher Education*, 13(6), 687-707. <https://doi.org/10.1007/BF00137020>
- Maringe, F., & Carter, S. (2007). International students' motivations for studying in UK HE: Insights into the choice and decision making of African students. *International Journal of Educational Management*, 21(6), 459-475. <https://doi.org/10.1108/09513540710780000>
- Martin, G. J., & Yurukoglu, A. (2017). Bias in cable news: Persuasion and polarization. *American Economic Review*, 107(9), 2565-2599. <https://doi.org/10.1257/aer.20160812>
- Mazzarol, T., & Soutar, G. N. (2002). "Push-pull" factors influencing international student destination choice. *International Journal of Educational Management*, 16(2), 82-90. <https://doi.org/10.1108/09513540210418403>
- McMahon, M. E. (1992). Higher education in a world market: An historical look at the global context of international study. *Higher Education*, 24(4), 465-482. <https://doi.org/10.1007/BF00137243>
- National Center for Education Statistics. (2022). Integrated postsecondary education data system: Use the data. *Institute of Education Sciences*. <https://nces.ed.gov/ipeds/use-the-data>

- Patel, V. (2018). Is the "Trump effect" scaring away prospective international students? *The Chronicle of Higher Education*.
<https://www.chronicle.com/article/Is-the-Trump-Effect-/245067>
- Pottie-Sherman, Y. (2018). Retaining international students in northeast Ohio: Opportunities and challenges in the 'age of Trump.' *Geoforum*, 96, 32-40.
<https://doi.org/10.1016/j.geoforum.2018.07.015>
- Redden, E. (2018). New international enrollments decline again. *Inside Higher Ed*.
<https://www.insidehighered.com/news/2018/11/13/new-international-student-enrollments-continue-decline-us-universities>
- Torbati, Y. (2018). Fewer foreign students coming to United States for second year in row: Survey. *Reuters*. <https://www.reuters.com/article/us-usa-immigration-students/fewer-foreign-students-coming-to-united-states-for-second-year-in-row-survey-idUSKCN1N10EN>
- Wilkins, S., Balakrishnan, M. S., & Huisman, J. (2012). Student choice in higher education: Motivations for choosing to study at an international branch campus. *Journal of Studies in International Education*, 16(5), 413-433.
<https://doi.org/10.1177/1028315311429002>
-

IBRAHIM BICAK, PhD, is a Data Analyst in the Office of the Dean of the College at the University of Chicago. Dr. Bicak does research broadly in higher education and education policy. Email: ibicak@uchicago.edu

Z.W. TAYLOR, PhD, is an Assistant Professor in the School of Education at The University of Southern Mississippi. Dr. Taylor has worked in education for 13 years as a pre-college counselor, financial aid consultant, assistant director of admissions, and admissions analyst, specifically aiming to serve low-income students and students of color. Email: z.w.taylor@usm.edu
