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International Student Flows to the U.S. Before and After 9/11

A Thesis submitted in partial satisfaction
of the requirements for the degree of

Master of Arts

in

Sociology

by

Karin Annette Johnson

June 2016

Thesis Committee:

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The Thesis of Karin Annette Johnson is approved:

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DEDICATION

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ABSTRACT OF THE THESIS

International Student Flows to the U.S. Before and After 9/11

by

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Master of Arts, Graduate Program in Sociology
University of California, Riverside, June 2016
Dr. Augustine J. Kposowa, Chairperson

International student migration to the U.S. dropped after the 9/11 attacks when it became the focus of anti-terrorism and immigration reform because it was believed the hijackers were non-U.S. nationals who had entered the U.S. on student visas. This study examines the impact of 9/11 on international student migration to determine if there was a significant change in visa issuances in post-9/11 years. I also investigate regional variation and Muslim religion predominance to test if visa issuances may have dropped for students originating from Middle Eastern countries and/or Muslim majority countries. I analyzed nonimmigrant visa issuance data from the U.S. Department of State Bureau of Consular Affairs annual *Report of the Visa Office* from 1989 to 2014. Results from paired sample *t*-tests show that while there was no initial significant difference between the pre- and post-9/11 periods, when broken down by visa classification and by region, there were

pronounced negative changes; F and M visas dropped in five out of six regions, and the Middle East was the hardest impacted, experiencing an overall decline in the average number of issued F, J, and M student visas. Negative binomial regression results confirmed results of the paired sample *t*-tests. The findings suggest that although Muslim majority countries were issued fewer visas for overall total visa issuance, trends by student visa type by region may have been the impetus behind the shifts in student migration after the September 11th, 2001 attacks.

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Introduction

Over the past 50 years American education has been increasingly sought after as the United States emerged as the top host for international students and a leader in education worldwide (Brint 2006, 2013; Altbach and Peterson 2008; Meyer 2009). In 2000/2001, the U.S. hosted nearly 30% of all globally mobile students and almost 25% of U.S.-university bound international students (Institute of International Education [IIE] 2012, 2014a; Organization for Economic Co-operation and Development [OECD] 2013). However, the steadily growing trend suddenly dropped after the September 11th, 2001 attacks when international student migration became a focus of anti-terrorism and immigration reform. American politicians and mass media engendered perceptions that international migration threatened U.S. national security after implicating three commanders and nineteen hijackers affiliated with the Islamist militant terrorist organization, al-Qa'ida. It was believed the hijackers were non-U.S. nationals who had entered the U.S. on student visas—yet, only *one* hijacker is documented as entering using a student visa, the remaining 18 entered on tourist or business visas (Federal Bureau of Investigation 2001; *9/11 Commission* 2004).

[Figure 1 about here]

Following 9/11, the U.S. responded with immigration policy targeting the presumed sources of the attacks—Muslims and migrants. Based on the claims that the perpetrators had entered on student visas, the Bush presidential administration specifically moved to impose tighter controls on student visas to block future would-be terrorists from entering the country. In 2001/2002 the American government enacted the

Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism (US PATRIOT) laws, the *Enhanced Border Security and Visa Entry Reform Act of 2001* (EBSVERA), and the *National Security Entry-Exit Registration System* (NSEERS). These policies included immigration procedures to screen and track international students via fingerprinting, photograph identification, periodic location reporting, and annual fee payments, and provisions requiring education institutions to report international students' visa issuance, personal and family details, and attendance (Urias and Yeakey 2009; Rosenblum 2011).

Post-9/11 immigration policies created a physically and administratively restrictive and politically and socially inhospitable affect. The U.S. tightened control on paths of entry for incoming migrants and scrutinized people from the Middle East region. These responses added to the perception by the international community that the U.S. reacted unilaterally. “Anti-Americanism” peaked and the U.S. was described as arrogant, irresponsible, and reckless—a world hegemon with goals to exploit and/or seek vengeance on others at its will (Bernstein 2003; Nye 2004; Farber 2007). In addition, the world perceived America to be irrationally xenophobic—hostile toward, suspicious of, and accusatory of Islamists, Arabs, Asian Indians (such as Sikhs), and other minority migrant groups (Farber 2007). The world initially sympathized with the American people, yet over time people outside the U.S. increasingly opposed post-9/11 policies.

Restrictive immigration measures, the erosion of international solidarity, and unfavorable attitudes toward the U.S. created the groundwork for a shift in international student mobility. International students may not have agreed with aggressive military

strikes in the Middle East, may have seen the U.S. as unwelcoming and discriminatory, and may have faced obstacles such as fear of intolerance, harsh immigration vetting procedures, and visa delay or denial. Legislation and attitudes that targeted Muslims and/or international students may have led to a drop in student visa issuances, markedly for international students originating from the Middle East region, because students were no longer interested in studying in the U.S., or could not gain an entrance visa, or both. To date, the United States is the only country in the top 10 destinations to experience a drop of over 10 percentage points in international student applications and enrollments after 9/11 (United Nations Educational, Scientific, and Cultural Organization [UNESCO] 2015). Furthermore, the U.S. has not recovered its competitive advantage—meaning it has not recouped the proportion of internationally mobile students that it had hosted pre-9/11.

[Figure 2 about here]

The purpose of this study was to examine the impacts of 9/11 on international student migration to the U.S. This study advances the literature in the following ways: I analyze nonimmigrant visa issuance data from the U.S. Department of State Bureau of Consular Affairs annual *Report of the Visa Office* from 1989 to 2014 to examine the impact of 9/11 and determine if there was a significant change in international student visa issuances in post-9/11 years. Second, this study investigates regional variations in visa issuances before and after 9/11, with the underlying hypothesis that visa issuances may have dropped for students originating from Middle Eastern countries. Third, due to anti-Muslim immigration procedures and sentiments in the U.S., I evaluate if visa

issuances drop in Muslim majority countries. My findings suggest that there have been long term negative effects for the U.S., although the U.S. still hosts the majority of international students worldwide.

Before I present the trends and analysis, I discuss the following: First, I lay the analytic framework, which includes a review of previous work and the theoretical framework. In the second section I provide the methods for my research, followed by the comparative results of international student trends before and after September 11th, 2001. I conclude with a summary and discussion of how international student mobility has changed since 9/11 and its implications.

Related Literature

International education programs are seen as an integral part of globalization and the knowledge-based economy. They are used to improve student preparedness through acquiring a global perspective (e.g. awareness of diversity and respect for difference) that allows them to contribute as national and global citizens (Lunn 2008). International student migration increases as individuals demand and acquire international education to make themselves more valuable in the globalized, internationalized labor market by having international experience (Thurow 1999; Altbach and Knight 2007). Worldwide international student migration is estimated to reach 8 million by 2025, with the U.S. hosting the majority of international students, nearly 975,000 in 2014/2015 (IIE 2015). With the growing international student population, it is notable that between 2001 and 2010 the U.S. is the only top host country to experience a marked drop in student inflows, nearly 10%, and it has not recovered its competitive advantage in attracting international

students. Given the importance and magnitude of student migration in current affairs, it is essential to understand trends and shifts in student migration.

Despite the volume of work on immigration to the United States, little research focuses on international student flows (Portes and Rumbaut 2014). In addition, literature on international students examines students' experiences after arrival in the U.S. and attempts to elucidate factors that attract international students to education abroad (Robertson, Line, Jones, and Thomas 2000; Lee and Rice 2007). There is little work that studies obstacles within the U.S. and global context that may lead to changes in international student mobility (for example, Naidoo 2007; Kahanec and Králiková 2011).

The most common research on international student migration focuses on factors of attraction, ranging from perceptions of formal mechanisms (like immigration policy) to the reception context, which are then attributed to benefits that students would realize in-country through their international education. Some factors that attract students include: the reputation of the country's education system, the host language, the language of instruction, affordability, colonial or historical ties, cultural and environmental draw, and traditional migration routes or diasporas (Macready and Tucker 2011). International student migration therefore is a product of influential and purposive selectivity at the social and individual levels (Lörz and Krawietz 2011; Kratz 2012; Lörz, Netz, and Quast 2015). For example, an international student's decision to undertake international education would be based on individual goals for future educational or employment positioning and made within the institutional and national environmental and academic context. In other words, an individual student would have particular education or

employment goals, but also consider larger influences of the country they are in and are going to and the university there. The idea behind attractive migration determinants, often termed “pull factors,” is that the benefits received by completing a study abroad program, a tertiary level degree, or a research program abroad would outweigh the costs and obstacles. However, when the cost/benefit calculation alters due to changing dynamics in the competition for and attraction (or deterrence) of international students, shifts in migration patterns emerge.

Many studies acknowledge the fact that the U.S. has experienced a dip in international student enrollments since 2001, but few studies move past speculation of the impacts of obstacles posed to international students (Altbach 2004). In other words, relatively a small number of papers seek why student flows dipped and none to my knowledge have parsed out student visa issuance. Some research focuses on absolute numbers of international students coming to the U.S., highlighting that the numbers of international students in America are at an all time high (IIE 2014a), and other studies emphasize the importance of the percentage of the rapidly growing population of mobile students, not absolute numbers, because international student migration continues to grow to an extent that even countries who lose market share end each year with higher numbers (Urias and Yeakey 2009; Macready and Tucker 2011). Other research has explained the drop of student enrollment in the U.S. is due to better education and employment access at home or in developing countries, and because of more aggressive marketing and recruiting by up-and-coming educational host countries, such as Australia and New Zealand (Verbik and Lasanowski 2007).

To the extent that studies have examined obstacles for international students coming to the U.S., the major explanatory factor is often cited as restrictive immigration policy, without an assessment of other mediating migration mechanisms that also influence a student's choice of destination. The Council of Graduate Schools (CGS) (2004) reported that the decline in international student applications and enrollment is attributed to less interest in studying in the U.S. due to perceived visa delays and denials. Lee (2007) and Lee and Rice (2007) found that current international students in the U.S. were resentful toward the immigration process because of intrusive and un-transparent regulations and procedures, which then deterred future international students from coming because of the costly, complicated, debilitating procedures and the unwillingness to be subjected to encroachment on privacy during the immigration process and via subsequent monitoring. Ewers and Lewis (2008) observed that in the post-9/11 climate international students in the U.S. were treated not as a source of revenue or of cultural exchange, but as an object of security risk based on ethnicity, national origin, religion, race, and to a lesser extent, gender. Sirat (2008) and Urias and Yeakey (2009) acknowledge that despite improvements to the U.S. visa system, other barriers continue to fuel misconceptions of the U.S. as not welcoming so that students are reluctant to go to the U.S. or avoid going there all together, and may instead seek quality educational opportunities in more welcoming and secure countries with less humiliating immigration procedures.

Within the political dialog, other studies have examined the international community's opposition to the U.S. political agenda as a disincentive to international

students. In *What They Think of Us: International Perceptions of the United States Since 9/11* (2007), authors from Iraq, Indonesia, Mexico, and China (to name a few) note that people around the world empathized with the Americans after 9/11, but their empathy turned to antipathy with the War on Terror and other subsequent military interventions. Lee (2007) and Lee and Rice (2007) attributed the decline in the number of international students to college-aged students in other countries being opposed to the U.S.'s foreign policy and fear of being discriminated by Americans. Nolan (2005) observed that in Germany anti-Americanism could be attributed to differing sets of political and social ideologies, and that progressively Germans do not see the U.S. as a global role model for secular, egalitarian policies. In the years since 9/11 these sentiments have not reversed. The U.S. is seen as irrationally xenophobic and people outside the U.S. feel alienated by aggressive American tactics (Farber 2007). Consequently, sentiments like these have a real impact on changes in international student migration flows.

In contrast, in his case study on the Australian higher education system, Marginson (2006) posits that in spite of changing political dynamics, students' primary consideration in their choice of where to study is the country—because the country, not specific institutions, is associated with prestige and power (reputation, quality, and high rankings). McMahon (1992) and Davis (1995) also suggest that the key factor of international student migration is the national level of global economic development, where the in- and out-flow of international students is positively impacted by national wealth and investment in social and economic human development, implying that countries with higher investment in and emphasis on education are likely to be leading

sending/receiving countries. For instance, in his analysis of internationally mobile Tunisian students, Benhafaiedh (2006) suggests that economic and social reasons supersede political reasons, so that students make their choice of destination based on personal capabilities and goals and then future educational or employment opportunities either in the home or host country.

Although the country and its political agenda have been presented as main deterrents, they only make up part of a student's decision to go abroad, and the aforementioned studies did not include comprehensive components that international students take into consideration. Kahanec and Králiková (2011) used European data to measure the effects of higher education policies on the share of international student enrollment and established that students were attracted by reputation and rank, as well as language of instruction, especially English; notably they reported that cost was the major deterrent to students interested in international education. Using survey and follow-up interview methods at a public university in the southwest region of the U.S., Lee (2007) found similar results, where students cited reputation and ranking as their main draw to the university and to studying in the U.S., followed by offers of work, assistantship, or financial aid, then by special programs. The data also suggest that low tuition is a stronger draw over both financial assistance and programming. Yet, these two studies concentrate on means of attraction, and they note deterrents secondarily.

Naidoo (2007) drew on former literature to attempt to explain the decline of students in higher education institutions in the U.S. Using a sample of Asian students coming to America from 1985 to 2004, he found that high tuition and fees deterred

students who instead preferred to go to Australia or New Zealand for more affordable education closer to home. The data also showed that increased access to education in the home country and/or twinning programs were not strongly influential. However, his sample years did not fully capture changing student flows, first because the years were restricted up to the Bush presidential administration, and second because the decline of incoming international students to the U.S. did not recover to pre-9/11 levels until 2007. The U.S. Department of State reported 293,357 visas were issued in 2001 and 298,393 were issued in 2007 (U.S. Department of State 2015).

In her study on Korean students going to the U.S., the U.K., Australia, and China, Park (2009) analyzed two surveys on academic and environmental reasons for why students would choose a certain location in order to develop a model of international mobility of driving force factors (*why*) and directional factors (*to where*). Park found that in the process of determining where to go, students based their decisions on a preferred set of perceptions and expectations (benefits) of a certain country compared to the costs and obstacles. She reported that while students may have first considered the U.S., due to monetary restrictions they would choose another location. Likewise, if students were unfamiliar with British or Australian universities, they would favor another location. As the only study to my knowledge that has specifically modeled international student choices as mediators of migration, this work represents an important contribution to the literature. However, it is cross sectional and is limited to Korean students, capturing only a snapshot of international student migration for a handful of countries.

The foregoing review indicates that there is a need for research examining changes in international student flows to the U.S., specifically in the period immediately preceding and following the 9/11 attacks. In addition, much of the prior research has focused on international students at the tertiary level and has not explored if international students who come to the U.S. as exchange visitors or as non-academic students were impacted the same way in the post-9/11 period. If there is a difference, which type(s) of student visas were affected by 9/11? Did international student have similar experiences and were there regional differences?

These studies suggest that an approach considering the outcome of intervening migration determinants on international student flows is needed. Although previous work has tested measures of attraction and deterrence mechanisms, these have examined international student flows to other countries and the U.S. during the early years of the 21st century, thus presenting a limited view of student migration. This article advances existing research by examining the shift in international student migration to the U.S. before and after 9/11 within the context of changing dynamics of international study.

Theoretical Framework

Migration literature has incorporated shared paradigms and built intersections across many disciplines (Massey, Arango, Hugo, Kouaouci, Pellegrino, and Taylor 1993, 1998; Brettell and Hollifield 2014). It acknowledges that voluntary migrants of all kinds are semi-rational actors who consciously or unconsciously self select and make calculated choices about how and where to migrate, taking into consideration push and pull factors in the origin and destination country and obstacles that would be met in the

process of migration. Migration theories may be classified as micro level, macro level, or international systems analyses, setting out to describe migration processes and impacts at the societal level.

At the micro level, neoclassical economics micro theories, human capital theories, the ‘new economics’ theory, and network theories posit that migrants have individual and group motivations to go where they can be the most productive the quickest possible and have the highest positive return on investment in human capital with the lowest risk (Sjaastad 1962; Todaro 1969; Stark and Bloom 1985; and Borjas 1990). At the macro level, neoclassical economics macro theories and dual labor or segmented market theories assert that wage differences and permanent labor market demands precipitate migration from one country or area to another (Lewis 1954; Harris and Todaro 1970; Piore 1979). Finally, international systems approaches include global class formation, transnationalism, institutional theories, cumulative causation models, globalization theories, and world systems theories. These approaches link migration to world social, economic, and political relations between and among private institutions, supranational and non-governmental organizations, larger societies, and nation states (Myrdal 1957; Wallerstein 1974; Portes and Walton 1981; Sassen 1988, 1996; Zlotnik 1992; Hollifield 1998; Brown and Lauder 2009; Portes and Rumbaut 2014).

While these theories may seem antithetical in some aspects, they have a common theme—concentration on permanent or stage migration of economic immigration and family reunification, and to a lesser extent, on irregular (migration without recognized documentation) and forced migration (such as, asylees, refugees, or child migrants).

These traditional theories largely ignore a growing sector of cross-border mobility—nonimmigrants. In the U.S., nonimmigrants generally include non-permanent residents who are guest or temporary workers, professionals, cultural exchange ambassadors, visitors, and international students. General migration theory may neglect nonimmigrant migration due to: 1) non-permanent, circular (based on obligations to return to the origin country), and favorable nature; 2) migrants may not assimilate the same way as immigrants; and 3) nonimmigrants may not have the same effects on a destination society as legal permanent residents, irregular, or involuntary migrants.

Due to the inherent nature of nonimmigrant, non-permanent status, international students are especially a vulnerable group under U.S. immigration law. Unlike any other classification of immigrants, nonimmigrants are subject to intrusive vetting policies and are scrutinized under the 1952 Immigration and Naturalization Act (INA), Section 214(b) the “presumption of immigrant intent.” Under the “law of presumption,” nonimmigrant applicants are presumed to be intending [permanent] immigrants unless they credibly demonstrate, to the consular officer’s satisfaction, that their economic, family, and social ties outside the United States are strong enough that they will depart at the end of their authorized stay and that their intended activities in the United States will be consistent with the visa status (U.S. Embassy London 2015). Although international students are often overlooked, it is important to include them in migration theory models, especially in the post-9/11 migration era.

While past migration theory rubrics have sought to explain the mobility and assimilation of economic (labor) and family migrants, within temporary and student

emigration theory, international student migration frameworks consistently explain cross-border mobility through incentives and attraction to opportunities, often termed *differentials of advantage* (Portes 1976; Portes and Rumbaut 2014). As seen in the above review of past work on international students, literature has focused on reasons for why international students choose a specific country, but little work has examined negative changes to international student diasporas and flows resulting from intervening obstacles in the migration process.

Considering the gaps in traditional approaches, the theoretical framework I adopt in this paper is based on the hypothesis that shifts in migration flows come about when intervening obstacles (difficulties and negative perceptions, such as immigration laws and policy) become insurmountable and overtake the draw of opportunities (advantages and advancements) at a certain destination. This approach is consistent with a modified version of general push and pull theory proposed by Ravenstein (1885, 1889) and further developed by Stouffer (1940, 1960) and Lee (1966). Despite critiques of push and pull models, citing their inutility as a critical theoretical framework, contemporary migration literature increasingly recognizes that the most powerful force in migration is that of ‘intervening forces,’ such that the forces of expulsion, restriction/regulation, and deterrence have gained the upper hand in state-level influence on international migration (Massey et al. 1998). Ever-increasing restrictive immigration policy—including intrusive interrogation interviews at consulates and ports of entry and exit, biological tracking (fingerprinting and photographing), detailed vetting procedures, and tracking measures—around the world is not novel and is becoming the norm (Nafziger 1983; Freeman 1995;

Sassen 1996; Hollifield 1998; Joppke 1998). More than ever, intervening obstacles shape immigrant and nonimmigrant mobility flows.

In general push and pull frameworks theories posit that the decision to migrate is the intermediate between perceived factors at the origin and destination that encourage and deter people to relocate (which is different from forced removal or involuntary migration). Meaning, the motivations and reasons to voluntarily migrate must be compelling enough to overcome the inertia to stay put and the effect of a given set of impedimenta (Lee 1966). Determining factors are never precise because of a temporally and physically unique set of intervening obstacles and opportunities for each migrant. Economic, political, social, and psychological circumstances are some factors that enter the personal contemplation of any prospective migrant, though personal amelioration of quality of life is one of the key drivers of voluntary migration (Ravenstein 1885, 1889; Stouffer 1960; Lee 1966).

At the core of push and pull theory is the balance of intervening opportunities (Stouffer 1940, 1960) and intervening obstacles (Lee 1966) felt in the origin and destination country and during the process of migration. Intervening opportunities are the factors that attract migrants to a specific locale, leading to a greater volume of migrants (Stouffer 1940). Inversely, intervening obstacles are factors that avert migrants, ranging from minimal hindrances to insurmountable obstacles, leading to decreased flows or non-flow. As stated above, the essential aspect of this balance is that migration eventuates when opportunities are more attractive than obstacles that encumber. This approach within push and pull theory explains reasons and cases for attraction to certain locales,

increases in flow volume, and why and how certain routes of migration are defined (diasporas, for instance), however it is not as suitable to explain shifts away from well-defined traditional reception areas, except if the impedimenta change remarkably as in the case of the U.S. after the September 11th, 2001 attacks.

By separating intervening opportunities and obstacles, the concept of migration obstacles is more applicable to explain deviations and/or aberrations in migration flows. Intervening obstacles, i.e. factors that deter migration, include macro and/or micro level stimuli and may range from banalities to extreme barriers. Some migration obstacles at the macro/state level are: distance; dissimilar language, culture, and/or history and insufficient language competency; unattractive climate/weather; uncongenial and/or xenophobic (social, political, and economic) surroundings; oppressive laws, restrictive policy, and closed borders/barriers. At the micro/individual level some obstacles are: lack of motivation or support to depart; advanced age of an individual; dissatisfaction with host/home country educational system; personal danger (i.e. public health issues such as mass shootings or heavy pollution); financial insecurity (low class and capital of migrants and their personal network and the inability to take on the cost of migration and livelihood maintenance abroad); lack of destination country reception network at the personal and institutional level; and limited knowledge and expectations of place of reception (Ravenstein 1889; Lee 1966; Jennissen 2007; Lee 2007; Park 2009).

The obstacles listed above are not exhaustive, but can be used to interpret factors that may push persons from their current place of residence or deter them from a prospective locale. Using the above characteristics, we may imagine the general scenario

as follows for international students: with the presumption that persons will migrate (all conditions held the same), in the process of deciding when and where to migrate, if obstacles placed on potential movers become more severe, restrictive, and cumbersome, this may lead students to delay or cancel their education abroad in a specific country because difficulties caused by obstacles outweigh any potential benefits. This point is especially salient when international students coming to a highly desired destination country, such as the U.S., face overwhelming barriers. Shifts in migration flows manifest when there are markedly different changes to incoming streams of international students.

Methods

Data

Data were obtained from the United States Department of State Bureau of Consular Affairs *Report of the Visa Office*. The *Report of the Visa Office* is an annual publication providing statistical information on immigrant and nonimmigrant visa issuances by consular offices worldwide (U.S. Dept. of State 2016b). Nonimmigrant visas are issued to non-U.S. nationals seeking entrance into the U.S. for a specific purpose, such as a student, visitor, crewmember, or foreign government representative.

The data included range from fiscal year 1989 to 2014, for 197 countries and a “no nationality” category, for F, J, and M class visas. Data were collected for nonimmigrant students by visa class and nationality from Table XVII “Nonimmigrant Visas Issued by Classification and Nationality (Including Border Crossing Cards)” from each annual report. The data were cross-checked with Table XVI(A) “Classes of

Nonimmigrants Issued Visas (Including Crewlist Visas and Border Crossing Cards” and Table XVI(B) “Nonimmigrant Visas Issued by Classification.”

Fiscal years 1989, 1992, 1993, 1994, and 1996 reports were accessed on microfiche from the government information federal depository at the University of California, Riverside. The remaining years, 1997 through 2014, were accessed online via the U.S. Department of State’s Visa Statistics website’s publicly available Excel file. Fiscal years 1990 and 1991 were not distributed to the federal depository libraries in California (thus not available at UC Riverside library) and the year 1995 microfiche has missing pages; thus these three years were eliminated from regional analysis since data on visa issuance by nationality and class were missing.

In this analysis, I focus on nonimmigrant students who enter the U.S. on F, J, or M class visas. I do not consider nonimmigrants who subsequently become a student after their arrival to the U.S. For example, a nonimmigrant who enters on a K-class visa (a non-U.S. national fiancé or spouse of a U.S. citizen, or a child of a fiancé or spouse) may later choose to become a student in the U.S. after their arrival. I do not include these cases since their primary reason for coming to the U.S. is family reunification and not study. I also exclude B visa students who come to the U.S. for short period recreational study because they do not receive academic credit.

F-1 class visas are issued to nonimmigrants who enter the U.S. as an academic or language training program student. F-2 visas are issued to the dependents (spouse or child) of an F-1 student. J-1 class visas are issued to nonimmigrants who enter the U.S. as an exchange visitor; J-2 visas are issued to the dependents of J-1 exchange visitors. M-1

class visas are issued to vocational or other nonacademic students; M-2 visas are issued to the dependents of M-1 visa students. I eliminated F-3 and M-3 class visas from my analysis (there is no J-3 class visa) because class 3 visas are issued to border commuter students. In previous years class 3 visas were issued as “Border Crossing Cards.”

For each annual *Report of the Visa Office* under Table XVII, visa classifications vary by year. For instance, in the 1989 *Report of the Visa Office*, the number of visas issued by country is given for 18 classifications of visas, not distinguishing between class 1 (visa issued to student) or class 2 (students’ dependents) visas. In the digital files for the years 1997 to 2014, there are 86 classifications of visas reported, and each classification has a distinction between class 1, class 2, and class 3 (Border Crossing Cards) visas, where applicable. Ideally, analysis would have included only F1, J1, and M1 visas, but in earlier copies of the *Report of the Visa Office* visa issuances are grouped by class (e.g. “F” or “J”) and not disaggregated into class 1, 2, and 3 at the national level. To maintain consistency across all years in the analysis, F, J, and M visas are the summed total of the visas issued to the student (F1, J1, and M1) and their dependents (F2, J2, and M2), respectively, as reported at the national level by class. Across the 198 nationality units over 23 years, there are a total of 4,526 observations by class (some countries have no data reported for select years).

Variables and Measures

The dependent variable for this study is the number of visas issued. I employ two variations of this variable: the *total* number of visas issued to a country for a year and the total number of *F* visas, *J* visas, or *M* visas for a country in a year. The total number of

student visas is the summed total of all J, F, and M visas for a particular year for a particular country. Likewise, the total number of F, J, and M visas are the annual sum of class 1 and class 2 visas for each country for a year. For each country I have approximately 23 years of the total number of student visas as reported annually.

The main independent variable is *region* and was coded based on the regions in the *Report of the Visa Office*. I created this variable based on post-9/11 immigration reform rhetoric, which largely encompassed targeting migrants from the generalized region of “the Middle East.” The objective was to determine if regions experienced negative *or* positive changes in the years following 9/11. By examining visa issuance by region, I aimed to capture changes in student visa issuance in all regions to determine if shifts may have occurred whether or not a country’s region was directly affected by U.S. immigration policy changes.

The reports include 198 country-level units, and five were excluded from the data. There are no data reported for Timor-Leste and Macau so they were eliminated from the data. There is also limited information due to the date when some countries were created or no longer existed as a result of political regime change; thus Kosovo was eliminated, and Serbia and Montenegro, when reported separately, were combined into one as “Serbia and Montenegro.” The category “no nationality” was excluded from regional analysis, as one cannot determine from where these students originated.

Based on data availability, 193 countries are recoded into six regions for analysis: Americas, West Europe, Sub Saharan Africa, Post Soviet, Middle East, and East and South Asia. There are 34 countries in the Americas region, 35 in the West Europe region,

18 in the Post Soviet region, 46 in the Sub Saharan Africa region, 23 in the Middle East region, and 37 in the East and South Asia region. The reference group in the regression models is East and South Asia.

Countries were grouped into regions by geographic area for consistency because the annual reports may list a country in a different region in a different year, particularly for post soviet countries that emerged in the 1990s and the Middle East. In the annual reports there are six geographic regions: Africa, Asia, Europe, Oceania, North America, and South America. I reclassified countries into regions as follows: I created the region Middle East, which combined the north African countries of Algeria, Egypt, Libya, Mauritania, Morocco, Sudan, and Tunisia and the west Asian countries of Afghanistan, Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Pakistan, Palestine, Qatar, Saudi Arabia, Syria, United Arab Emirates, and Yemen. I included all Oceania countries into the East and South Asia region (Australia, Fiji, Kiribati, Marshall Islands, Micronesia, Nauru, New Zealand, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu). I composed the Post Soviet region from eastern European countries (Albania, Armenia, Azerbaijan, Belarus, Bosnia Herzegovina, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia, Moldova, Russia, Serbia and Montenegro, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan). The Americas region is made up of North and South American countries. (See Appendix A for the list of countries by geographic region.)

The second covariate is *Muslim*. This variable was used to further explore if religious majority effected changes in visa issuance, in comparison to the variable *region*,

which was implemented to understand visa issuance changes by nationality. It is coded 1 if the majority (more than 50%) of the country's population identifies as Muslim, either Sunni or Shia, or both. Countries are defined as 0 if the population is not Muslim majority, having a majority of other religions (such as Christian, Buddhist, or Hindu). I used the U.S. Central Intelligence Agency (CIA) Factbook for country's religions (Central Intelligence Agency 2013) to identify and code countries by religious majority. There are a total of 49 countries in the dataset defined as Muslim. (See Appendix B for a list of Muslim countries.) The reference group comprises non-Muslim majority countries. The measurement of countries by region, by religious majority, and religious majority by region is shown in Table 1.

[Table 1 about here]

Estimation Strategies

First, to determine if differences exist in visa issuances before and after 9/11 a series of paired sample *t*-tests were run on select years of the U.S. Department of State *Report of the Visa Office* data. Initially the aim was to employ the full range of visa data from 1989 to 2014, but data ranging over a long period may be assumed to stabilize after a length of time and cross sectional data may be subject to atypical fluctuations. To maintain the stability of the estimates, a standard follow-up period of 1- to 5-years was used in this study to capture changes. Therefore, to obtain more focused results, paired sample *t*-tests were conducted up to five years before and after 9/11, excluding the year 2001 since the attacks happened in that year.

Next, negative binomial regression techniques were applied to the data to estimate the effect of a country being predominantly Muslim on visa issuances after 9/11. Visa issuances across 193 countries are highly skewed, lack negative integers, and there are some countries that did not have any of the applicable student visas in a year. Multiple linear regression was not implemented because the highly skewed nature of the outcome variable did not meet the normality assumptions of OLS. To avoid producing inefficient coefficient estimates and biased standard errors, a negative binomial model was specified. The negative binomial distribution is a generalized version of Poisson; this allows the variance to exceed the mean and for unobserved heterogeneity. The model may be defined as follows:

$$\log(\lambda) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k + \sigma_\epsilon$$

Where β_0 is the intercept, β s are regression coefficients, and X s are independent variables; ϵ is the disturbance term, which is introduced into the model to account for overdispersion, and σ is the scale parameter (Agresti 1990). It is assumed that λ has only nonnegative integers, which vary across units (countries).

Results

Findings are organized into three sections: (1) descriptive statistics, (2) paired-sample *t*-tests, (3) and negative binomial regression results.

Descriptive Statistics

Descriptive statistics of nonimmigrant student visa issuance for select years before and after 9/11 are shown in Table 2. The mean student visas total issued for the year 2000 was 3049.44 (SD=7183.827). For the years following 9/11, the mean total

student visas issued were 2832.02 (SD=6664.73) in 2002, 2711.05 (SD=6430.52) in 2003, 2718.98 (SD=6566.33) in 2004, 2929.79 (SD=7127.00) in 2005, and 3325.28 (SD=8147.18) in 2006. Descriptive statistics by regions for select years are provided in Table 3. The regions of West Europe and East and South Asia send the highest number of students to the U.S., followed by the Americas, Post Soviet, and Middle East regions. International students from the Sub Saharan Africa region are the least numerous.

[Table 2 about here]

[Table 3 about here]

Paired-sample t-tests Results

Paired-sample *t*-tests were conducted to compare the means of visas issued before and after 9/11 and determine if there were significant changes in student visa issuances. T-test results should be interpreted with the understanding student visa issuance counts are part of nonimmigrant census-like data and *p*-values, or statistical significance, does not measure the size of an effect, rather it indicates if the change between the two observed times is different from zero (American Statistical Association 2016). The first series of the before-and-after comparison of visa issuance is shown in Table 4. The paired sample *t*-tests compared the average number of visas in the three years immediately prior to 2001 (1998, 1999, and 2000) to the average number of visas issued in three years immediately following 9/11 (2002, 2003, and 2004) for the 193 countries, excluding the year 2001. This test showed that although there was an average decrease of 190.15, there was no significant difference between the number of visas issued in the periods immediately before and after 9/11. At 192 degrees of freedom (for a two-tailed test and

$\alpha=0.05$) the reference t -ratio is 1.97, but the calculated t -ratio of 0.428 is much less. This evidence suggests there is no significant difference in the observed change in student visa issuances during this period.

However, when the years before and after are individually tested by visa classification there is a significant difference in the average visas issued before and after 9/11. As illustrated in Table 4, the average issuance for F visas declined by 713.45, increased for J visas by 557.10, and decreased by 33.80 for M visas. The calculated t -values of 2.862 and 3.107 respectively, were greater than the t -critical (1.97) at $\alpha=0.05$, and the calculated t -value of -1.700 is greater than the t -critical of 1.65 at $\alpha=0.10$.

[Table 4 about here]

Conflicting results seen in Table 4 prompted a more parceled approach. A second set of paired-sample t -tests were conducted to individually compare the years pre-9/11 (1998, 1999, and 2000) to the years post-9/11 (2002, 2003, 2004, 2005, and 2006) and showed that while the years 1998 and 1999 yielded non-significant results (likely because of time passing between the pre- and post-period years), that when the five years in the post period were compared to the year 2000, almost all results reached significance. Results are reported in Table 5.

Results show that average total visa issuance decreased in years 2002, 2003, and 2004, with a mean difference of -217.43 ($t=1.813$), -338.39 ($t=2.375$), and -330.46 ($t=2.237$) respectively. When broken down by class, F visas experienced a significant average decline in 2002 (-271.09, $t=4.149$), 2003 (-379.53, $t=4.503$), 2004 (-368.11, $t=4.550$), and 2005 (-271.25, $t=3.193$). M visas also experienced negative changes in visa

issuance after 9/11, dropping by 11.35 in 2002 ($t=4.014$), 11.22 in 2003 ($t=3.233$), and 8.06 in 2004 ($t=2.001$). J visas experienced a significant increase in average issuances by 344.89 in 2006 ($t=-2.378$). The average decrease in F and M visas were highly significant at the alpha level of 0.05, thus providing evidence to suggest that there were negative changes in academic and non-vocational visas issued after 9/11, while the average change in J visas was positive, thus implying that exchange visitor visas issuance was not impacted in the same ways.

[Table 5 about here]

Based on the hypothesis that international students from Muslim or Middle Eastern countries would be negatively effected by 9/11, a third set of paired sample *t*-tests by region were conducted to determine if certain regions experienced significant negative changes in the number of visas issued after 9/11. As seen in Table 6, the Americas, West Europe, Post Soviet, and East and South Asia regions experienced some change in the total number of visas issued, but the mean difference did not reach statistical significance for these regions. Sub Saharan Africa experienced a drop in the average total visas issued in 2006 (-70.80, $t=1.683$).

However, in the Middle East, the average of total visas declined in the period following 9/11 and difference for the years 2002, 2003, 2004, and 2005 were significantly different from the number of visas issued in 2000. The mean of total visas issued in the Middle East in 2000 was 1476.70, and 867.83 in 2002, 777.04 in 2003, 792.48 in 2004, and 919.43 in 2005. In each of these years there was a negative change of

-608.87, -699.65, -684.22, -557.26 respectively, which is significant ($\alpha=0.5$, t -critical=2.07).

As reflected in Table 4 above, all regions except the Middle East did not experience a significant change in the total number of visas issued before and after 9/11. By further examining each region's visa issuance by class, findings indicate that academic student visas (F class) were the most greatly impacted in all regions, except Sub Saharan Africa in which non-academic vocational student visas were the most greatly affected, experiencing a significant downturn in M visas from 2002 through 2006. The Americas experienced a significant decrease in F and M class visas from 2002 through 2005, and experienced a significant increase in the average of J visas issued in 2005 and 2006. West Europe also experienced a negative change in F visas from 2002 through 2005 and a significant drop in the average M visas issued in 2002. Likewise, the Post Soviet and East and South Asia regions experienced a significant decline in F visas from 2002 through 2004. The Post Soviet region also saw a significant decline in the average M visas issued in years 2003 and 2004, and the East and South Asia region saw a decline in M visas in 2002.

The Middle East is the only region to experience an average decrease in all visas—F, J, and M classes—in all five years in the post-9/11 follow-up period. The average F visa issuance decreased significantly from 2002 through 2005. The average number of J visas also dropped significantly in 2002 and 2003. M visa issuance average also dropped in all five follow-up years, though there was no significant difference from the average number of M visas issued in 2000. These results show that although there

was no significant change in the number of total student visas issued before and after 9/11, when years were examined individually F and M visas greatly declined after 9/11 in all regions; the Middle East was the hardest impacted, experiencing an overall decline in the average number of student visas issued in F, J, and M classes.

[Table 6 about here]

Regional visa issuance trends for years 1997 to 2006 are shown in Figure 3. Country populations and the number of student visas vary by region, so the regional charts are divided by average number of student visas issued: visas range between 150,000 and 300,000 in East and South Asia and West Europe, between 25,000 and 100,000 in the Americas and Post Soviet countries, and between 15,000 and 50,000 in the Middle East and Sub Saharan Africa regions. It is notable that there is a drop in issued visas post-9/11 in the East and South Asia, West Europe, Americas, and Sub Saharan Africa regions; this drop is striking in the Middle East.

[Figure 3 about here]

Negative Binomial Analysis

Based on *t*-test results seen in Table 5 and 6, findings suggest there were negative average differences in visa issuances in the years following 9/11. It appears the decline was the greatest in the year 2003 for total and F visa issuance, but that the negative effect began in 2002. For the binomial regression models I implemented the outcome variable for the *total*, *F*, *J*, and *M* class visa issuances for the year 2002, resulting in four estimated models. In separate analysis (results not shown) I estimated models using the visa issuance difference between 2000 and 2002 as the dependent variable. Table 7

presents negative binomial regression results for the covariates, regions and Muslim majority countries. Incidence density ratios (IDR), 95% confidence intervals were calculated, and acceptable fits were obtained for all four models as determined by the size of the likelihood ratio statistics ($LRS_1=30.352$, $LRS_2=30.910$, $LRS_3=38.201$, and $LRS_4=32.883$, $df=186$, $p<0.01$). The low deviance/ df for all models also indicates that overdispersion was absent in each estimated model.

[Table 7 about here]

As illustrated in the table, Muslim dominant countries were significantly associated with the total number of student visas issued for the year 2002, and the regression coefficient was in the negative direction ($\beta=-0.820$, $IDR=0.440$, 95% $CI=0.234-0.830$), suggesting that countries with a majority Muslim population had a lower expected number of counts of total student visas issued. The findings suggest that for every percentage increase in the percentage of visas issued in non-Muslim dominant countries, the rate of visa issuance decreased by 56% in Muslim majority countries. All regions except for West Europe experienced a negative effect on the expected total number of student visas issued in 2002. Similar conclusions were found for J visas, where the number of visas issued to students in Muslim majority countries was associated with significantly lower rates of visa issuance ($\beta=-1.534$, $IDR=0.216$, 95% $CI=0.111-0.420$).

When visas were broken down into sub classifications, visa issuance by type and Muslim majority vary. It is important to interpret the results with the understanding that the reference group is the East and South Asia region, which is the region with the highest number of student visas issued, so negative coefficients are anticipated for most

of the regions. It is also important to reiterate that visas are issued in whole numbers. While the findings for the total number of visas issued indicate Muslim majority countries have a lower rate of expected visas issuance, the findings for F, J, and M visa show varying results for Muslim majority countries. For instance, Muslim majority countries were significantly associated with F visa issuance in all five regions in comparison to East and South Asia. These findings suggest that while Muslim religious predominance did not affect F visa issuance, the expected number of F visas declined in all regions in 2002.

In contrast, J and M visa issuance is more varied across regions compared to East and South Asia. As mentioned above, J visas were negatively associated with Muslim religious predominance, yet regionally, the West Europe region had an expected increase in J visa issuances ($\beta=0.907$, $IDR=2.476$, 95% $CI=1.148-5.338$), and the Americas ($\beta=-0.746$, $IDR=0.474$, 95% $CI=0.218-1.032$) and Sub Saharan Africa ($\beta=-1.865$, $IDR=0.155$, 95% $CI=0.074-0.325$) experienced an expected decrease as compared to East and South Asia. M visa issuance follows suit. There is a negative association between M visa issuance in 2002 and the Post Soviet, Sub Saharan, and Middle East regions. These findings indicate that while Muslim religion majority was negatively associated with total student visa issuance for 2002, certain regions and visas, especially the F visa, experienced declines in visa issuance despite being predominantly Muslim not.

Discussion

The main purpose of this study was twofold: to determine if there were changes to total international student visa issuance before and after 9/11, and to investigate if the

Middle East region experienced significantly lower averages of issued visas in the post-9/11 period. A secondary objective was to explore the effect of a country being majority Muslim on the number of visas issued, and to examine if that coincided with regional estimations. Findings from the analyses examining visa issuance before and after 9/11 were compelling in that an initial test comparing average student visas issued in the three years before and after 9/11 showed there was no significant difference between the two periods. When the sample was broken down by visa classification, the negative effect on visa issuance was especially pronounced for F and M visas, while J visas issuances did not appear greatly changed. At the regional level, the result held for F and M visas in all six regions, but countries in the Middle East experienced the most considerable decline in all visa classes across the years. Negative binomial regression results support the paired sample *t*-tests. More specifically, while it may be evident predominantly Muslim countries were issued fewer visas for overall total visa issuance, it appears changes by student visa type by region may have been the impetus behind the shifts in student migration trends after the September 11th, 2001 attacks.

General results of this study reflect past research that acknowledged the first absolute decline in international student applications and enrollments in the years after 9/11 (Altbach 2004; CSG 2004; Naidoo 2007; Urias and Yeakey 2009). However, past literature responded by calling for institutions to shoulder recruiting more international students (Macready and Tucker 2011), or examined factors that could have explained the shift, such as home country education opportunities, declining interest, real and perceived visa barriers, and increasing global competition for and recruitment of international

students (Lee 2007; Lee and Rice 2007; Naidoo 2007; Verbik and Lasanowski 2007; Ewers and Lewis 2008). The findings in this study at the visa class and regional level represent an advance over studies, which have not previously investigated post-9/11 international student visa trends.

The non-significant finding with regards to international student visa issuance in the three-year period before and after 9/11 is anticipated and may explain why the sudden decline in student visa issuance had not been further examined. In addition, the drop may be overlooked for a number of reasons: the U.S. has maintained its place as the country that hosts the majority of internationally mobile students; the number of international students in the U.S. is at an all-time high; and the projected number of international students in the U.S. by 2025 is almost 1 million (IIE 2014a; IIE 2014b; IIE 2015). If we were to focus on the non-significant finding between pre- and post-9/11 visa issuances and the absolute increasing number of incoming international students, this would neglect the fact that F and M visas were negatively impacted in five of the six regions and that the Middle East experienced a severe decline in visa issuances for all visa categories as compared to the other regions. This study's findings also provide data that can be used to explore and explain long term shifts in international migration trends in the post-9/11 era.

From here we must consider possible explanations for observed variations in visa issuances by class and by region. First, as stated above it was not unexpected that there was no initial difference in the years before and after 9/11 due to what I suspect is a normalizing effect. However, what might have driven the differences in F, J, and M visas? It may well be that J visas were not affected the same as F and M visa because of

the nature of visa purpose. F class visas are issued to academic students and M class visas are issued to nonacademic vocational (technical) students, while J class visas are issued to exchange visitors. The J category of visa is the most diverse and most subcategories have an educational component, but not all. In 2009 the majority of J-1 visas were issued to people coming to the U.S. for summer work or travel, followed by secondary study (high school) and non-degree study purposes, scholars, camp counselors, short-term scholars, and au pairs (the intern category was changed in 2006 from ‘trainee’) (Macready and Tucker 2011). These visas were likely not affected the same way as F and M visas because these are “exchange” visitors who often stay in the U.S. less than one year. Institutions may also be bound to exchange agreements because they are facilitated through governmental or non-governmental organizations (e.g. the Fulbright program). J visa applicants may have been able to continue with their exchange visitor plans, or at worst may have delayed or cancelled their sojourn. M visas issuance may have dropped after 9/11 because these students may have also been able to postpone their migration purpose, or even find an alternative location for training, etc.

It is likely that F class visas (academic and language students) were the hardest hit because academic programs are long-term (lasting more than 1 year) and require more permanent commitment to complete a program of study. It is also possible to consider this category of international students would be highly educated and apt to making informed decisions about studying in the U.S., thus this group may have been turned away by harsh U.S. foreign policy, ranging from restrictive immigration protocol to military involvement in the War on Terror (for example, Farber 2007 and Sirat 2008).

With the pronounced negative change in F visas and not J visas, we may ask if a substitution effect may have happened, where students applied and were issued J visas instead of F visas because of the stigma and immigration protocol associated with traditional student visas after 9/11. I don't believe this is a feasible explanation because there is not sufficient evidence to support this claim nor are visas interchangeable. If we were to see a substitution effect, we would have likely seen a relatively equal mirrored increase in J visas as F visas fell, yet J visas remained stable from 2001 to 2006 while F visas fell (see Figure 2 and Table 2). F and J visa requirements are similar: both require a DS-160 nonimmigrant visa application, photo, application fee of \$140-160, and an institution issued "Certificate of Eligibility," either the DS-2019 for a J visa or the I-20 for a F visa (Dept. of State 2016a). However applications for F visas are not commutable to J visas and vice versa because program specific requirements restrict institutional issuance of a valid eligibility certificate from the Department of Homeland Security. A more likely explanation is that unobserved heterogeneity issues are present in the data.

There are plausible explanations for the observed variations between and within regions on total visa issuance and F, J, and M visas. Data show East and South Asia visa issuance is led by F class visas, West Europe and Post Soviet countries issuance is led by J visas (exchange visitors), and the Americas, Sub Saharan Africa, and the Middle East have approximately even distribution between F and J visas. As mentioned above in the results section, F visas were negatively impacted in five out of the six regions (the Americas, West Europe, Post Soviet countries, the Middle East, and East and South Asia, but not Sub Saharan Africa). The data show the Asia region was issued the most F visas.

This may be due to large populations (e.g. China or India), or, as Marginson (2006) and Kratz (2012) suggest, one may also consider that an American education is highly prestigious and sought after for students and their family who self select for international student migration. However, it is possible that students coming from this region would be subject to negative political or state-level stimuli. For example, by referring back to Figure 3, we observe a dip in student visa issuance in 1998 in the East and South Asia region, which may be attributed to the period during the 1997/1998 Asian financial crisis.

West Europe and the Americas also experienced a decline in F, J, and M visas, and to a lesser extent, the Post Soviet countries. Like East and South Asia, it is notable that while F visas in these three regions suffered negative effects, J visas were unchanged (or even experienced a positive change in the Americas in 2005 and 2006). M visas declined in the Americas most notably. However, the Sub Saharan Africa region was the only region to not experience a decline in either F or J visa, but a significant difference in the number of M visas issued after 9/11. This could be because Sub Saharan Africans, while being the most internationally mobile population in the world (6% of all Sub Saharan African students study outside their country, which is three times higher than the global average), stay within the continent for education (IIE 2011). Although Africans may not be mobile *outside* of the continent for education, Africans comprise a large number of the most highly educated immigrants coming into the U.S. (Portes and Rumbaut 2014), meaning that those who came to the U.S. on a student visa may have come for training or other technical purposes.

Regions' political and social relations to the U.S. may also be influential mediators of international student migration. Regional migration mediators may positively effect migration within regions as found in the Americas or Europe, as suggested by the cross-regional findings by Abel and Sander (2014). MacMahon (1992) and Davis (1995) suggest cultural and economic similarities may drive cross-national student migration between affluent countries (e.g. the OECD). Asia and Europe may also have more political, economic, and social alliances with the U.S., as compared to many sub Saharan African nations, which are more isolated, which (along side the sheer population numbers) could account for larger numbers of academic students and exchange visitors.

There are possible explanations for the negative change in international student visa issuance in the period following 9/11. The intervening obstacles that may have come into play would be a individual set of individual- and state-level impedimenta—meaning, a potential incoming or renewing international student may have come to a decision to *not* come to the U.S. after 9/11 based on: 1) they were no longer interested in studying in the U.S. at that particular time, and 2) they would not be able to gain entrance to the U.S. Potential reasons student may not have been interested in coming to the U.S. after 9/11 are that they worried about personal safety, feared discrimination by Americans, disagreed with U.S. foreign policy, such as the military intervention strategies of the War of Terror in Iraq and Afghanistan, and/or no longer saw the U.S. as a global role model for education or political and social ideologies. In addition, it is conceivable that students feared persecution by U.S. immigration officials during the application process, and were

wary of increased visa delay or denial, heightened security protocol in consular offices and at the port of entry under the directives under the newly created Department of Homeland Security, and acute scrutiny, un-transparent processes, intrusive documentation and follow-up procedures. In consideration of these intervening obstacles, my findings are consistent with the conclusions of the Council of Graduate Schools (CGS) (2004, 2014a, 2014b), Nolan (2005), Lee (2007), Lee and Rice (2007), and Ewers and Lewis (2008), with regards to the impact by both micro and macro level obstacles that may account for negative effects of international student migration mediators. As Park (2009) found, it appears that student migration flows are determined by a set of perceptions and expectations, although my findings indicate that negative stimuli may be as influential as perceived benefits.

Although Marginson (2006) argues the country of study is a student's primary consideration, the findings in this study support the conclusion that deviations in migration flows may occur during a period in which students do not want or cannot gain entrance. This point means that despite Benhafaiedh's (2006) claim that students make their destination choice depending on economic and social reasons, it appears that increasingly political considerations (due to intervening obstacles created at the state level) are relevant. I do concede that the period after 9/11 was unique and is not wholly comparable to other political periods, but I do maintain that as international student migration expands, students (either consciously or unconsciously) weigh positive and negative economic, political, social, and psychological circumstances factors, with the

goal of personal amelioration of quality of life as the primary force behind of voluntary migration (Ravenstein 1889; Stouffer 1960; Lee 1966).

Alternate explanations may also more fully explain the change in visa issuance and the overall shift in the total percentage of international students the U.S. hosts in the post-9/11 period. For example, increasing costs of U.S. education may deter students in conjunction with greater availability of quality education programs and courses taught in English in countries outside of the U.S. (Naidoo 2007; Kahanec and Králiková 2011). Educational hubs have begun to emerge in Hong Kong, Singapore, Malaysia, the United Arab Emirates, Qatar, Saudi Arabia, and Botswana (Knight 2013). Student may also have alternative educational access using technology such as Information and Communication in Education (ICTW) tools (Benhafaiedh 2006). In addition, changing business cycles abroad, such as the abovementioned financial crisis in Asia, or in the U.S., like the Great Recession in 2008, may temporarily hinder student flows because of economic restraints. Political administration may also influence migration flows depending on how politicians and the values they represent are perceived. The Bush administration could have been equated with harsh 9/11 policies, and the responding migration flow dipped during the remaining years of the presidential cycle. The presidential administration change from Bush to Obama in January 2009 may have been an impetus for international student visa application and issuance recovery. We may weigh the larger social context to interpret a temporal drop in student visa issuance, lasting from 2002 through about 2007/2008.

Whether potential or renewing international students were effected by decisions to not be able to gain entrance to the U.S. and/or a decreased desire to come to the U.S. for

study due to a number of reasons, the newly renovated post-9/11 immigration policy and U.S. domestic and foreign policy negatively impacted international student flows into the U.S. after 9/11. While we may be tempted to imagine the U.S. government's responses to the 9/11 attacks as exceptional, the U.S. has a history of reacting to foreign threat or attack via changes to immigration policy, such as: adopting the 1882 Chinese Exclusion Act (barring the Chinese); conducting the Palmer Raids (including arrests and deportation of political radicals) during the Red Scare of 1919/1920; evacuating and suspending the civil rights of persons of Japanese ancestry per the 1942 Executive Order 9066 by the President Franklin Delano Roosevelt; excluding immigrants through quotas based on country of origin and economic and social factors in the 1952 and 1965 Immigration and Naturalization Acts; and more recently practiced modern-day gate keeping through the Antiterrorism and Effective Death Penalty Act of 1996 and the 2001 US PATRIOT Act (Cole and Dempsey 2006; Hing 2004; Espiritu 2008). Anti-immigration hysteria has been common following threats or attacks on the U.S. and, in turn, negatively impacts flows of immigrants and nonimmigrants alike. During these heightened periods immigration is monitored and could be criminalized, especially for those people coming from regions that are "guilty by association." For instance, much of the 1996 Antiterrorism Act and the 2001 US PATRIOT Act focus not on acts of violence, but on the political and religious ideology of the perpetrators, which consequently stigmatizes the innocent (Cole and Dempsey 2006) and may alter the path of migration for international students.

It is important to bear in mind broad implications—both within the U.S. and global context. Within the current global political polemic on migration, there is

disagreement about whether immigration is beneficial or harmful and if the country should increase inflows or further tighten controls on entry and deportation. Today, fifteen years after 9/11 national immigration policies continue to change due to anti-Islamic sentiments, both abroad and in the U.S.—specifically in light of the December 2015 San Bernardino shooting, and the November 2015 Paris and March 2016 Brussels attacks in the West, ongoing Boko Haram attacks in the global south, and intensifying security issues in the Middle East with ongoing wars and refugee and humanitarian crises. The U.S. also has numerous immigration issues to manage: incoming refugees from Central and South America; immigration reform for people living in the U.S. with irregular immigration status; and growing numbers of international students and skilled graduates. Yet, U.S. and international community politicians, policymakers, educators, and employers agree on one aspect of immigration reform—international student migration should increase (Ruiz 2013). Results found in this study extend beyond international student migration and have implications in permanent migration to the U.S., too. For one, within the U.S. legal permanent immigration visa issuance may have also experienced similar trends in the post-9/11 era.

In addition, there are unresolved questions regarding the absolute number versus percentage of students coming to the U.S. Why did visa issuance recover in the years following 2006/2007? Was there a cohort recovery effect or a deferred entrance effect? Are students staying home and/or using alternate forms of mobility, such as Information and Communication Technology in Education (ICTE), or have flows continued to grow and students instead choose alternate locales over the United States? If so, where are

students going and have other countries benefited? Has there been a slow shift in countries' educational position within global economic, political, and social system? Has this consequently redirected migration flows away from a traditional locale to a place where opportunities are greater than obstacles?

We know from reports on migration and international student mobility that unlike international migration that has remained at about 3% of the world's population over the past 50 years, international student mobility and migration has and continues to grow rapidly (UN 2002, 2013; OECD 2014; IIE 2015). Past literature forecast that international students would reorient themselves toward countries that were once considered second tier (Benhafaiedh 2006) and that countries and institutions would develop branch and/or twinning programs or fund local educational hubs (Knight 2013). Altbach (2004) proposes that for the U.S. to remain competitive and a top destination for international students, institutions and governments could consider policies that reduce tuition or draw on students from the region since inter-regional student migration is expanding (Abel and Sander 2014; OECD 2014). American education is still seen as a premium good, but rising hot spots, such as evolving destinations like Canada, South Africa, and New Zealand, and emerging countries, like Malaysia and Singapore, pose real threats to the U.S.'s educational competitive edge and leadership (Naidoo 2007; Verbik and Lasanowski 2007; Sirat 2008). However, the United States as a land of opportunity remains magnetic (Bernstein 2003).

Limitations

As with any research, this study faced some limitations that should be considered. In terms of access to the data I faced two issues: the first was data availability for older *Report of the Visa Office* files and second was readability of older reports. As stated above reports from years 1990 and 1991 were not issued to the on-site federal information depository and year 1995 was missing pages that reported visa issuances by class and nationality. Reports from 1987 through 1996 were available on microfiche, which made it difficult to read exact numbers for countries. When entering visa issuance counts for some older year reports, the total visa count was off by a few tens or hundreds. However, for this study I used years 1997 through 2014 to maintain data integrity and implemented student visa counts for the total, F, J, and M class visas by using the public use Excel file available on the Department of the State Bureau of Consular Affairs visa statistics. Likewise, for national-level visa issuance by class, data were also available in readily accessible in Excel format by nationality and class. The benefit of using public use government data is that they are rigorously cross checked and have a high level of quality.

Within the available data there is also a limitation to data reported on visa classes. In this study F, J, and M class visas are the summed total of the students and their dependents. It would have been more appropriate to use student visa issuance data without dependents, but to maintain consistency across all years of data (including years in which 1 and 2 class visas were not disaggregated) each visa class is comprised of students and their dependents.

The second limitation is that the grouping of countries by region is not exact. I followed the *Report of the Visa Office* regions as closely as possible and assigned regions based on geographic location and similar cultural makeup. It is possible that some countries in Sub Saharan Africa could be considered part of the Middle East or as part of the African continent. Eastern European countries also could be considered as part of Europe, Asia, or the Middle East. In Asia, this is a large geographic area with a diverse group of countries, including two of the most populous countries on Earth. Given these considerations, in preliminary analysis I tested if grouping nations by continent or by religion and region resulted in significantly different results, but they did not. Thus, I retained the six regions by geographic location.

Finally, the data collected included only visa issuance. There are three years (2013, 2014, 2015) of “Nonimmigrant Worldwide Issuance and Refusal Data by Visa Category” files available on the Department of State Bureau of Consular Affairs website that report the number of visas issued, refused, waived/overcome, and the total workload by individual visa class (e.g. A1 or F2). Prior years of reports do not exist to my knowledge. It would have been valuable to examine not only visa *issuance* but also visa *denial* in the pre- and post-9/11 period.

Despite the above limitations, this study advances the literature by showing international student migration was negatively affected in the post-9/11 period—primarily for academic and non-academic vocational students and their dependents. Results also demonstrate that while there was a negative change on student visa issuance, when examined by region, the Middle East suffered the brunt of the impact. Finally, we

see there were changes in expected visa counts by Muslim majority for overall total visas in the year 2002. This study has presented evidence to suggest intervening obstacles at the personal and state-level may have played a part in shaping visa issuance and international student migration in the post-9/11 era.

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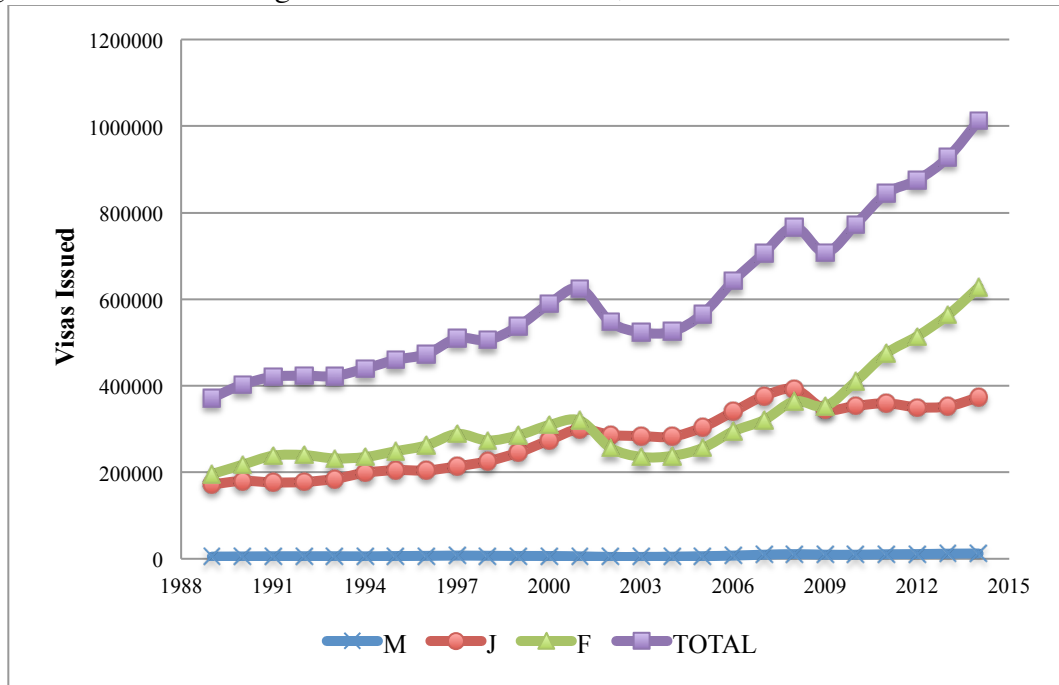
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Figure 1: U.S. Nonimmigrant Student Visas Issued, 1989 to 2014



Source: United States Department of State Reports of the Visa Office, 1987 to 2014