

PREDICTING PARTICIPATION IN STUDY ABROAD: AN EXAMINATION OF
THE FACTORS ASSOCIATED WITH APPLICATION WITHDRAWAL
AND HOW THEY CONTRIBUTE TO RACIAL/ETHNIC
DISPROPORTIONALITY

by

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DISSERTATION ABSTRACT

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Enrollment of U.S. students in study abroad programs grew consistently in the past three decades motivated by student interest, campus internationalization efforts, and government incentives. Nevertheless, enrollment disproportionality between White and non-White students has persisted. Researchers have attempted to identify factors that can explain the racial and ethnic disproportionality and help colleges and universities increase participation of non-White students in study abroad. The available literature on the topic has focused on comparisons between students who participate in study abroad and those who do not based on historic data. This study investigated factors that could predict study abroad participation based on information collected from current-cycle study abroad applicants to predict those at risk of not confirming participation. The findings of this study support using social, personal, and institutional factors as predictors of participation. This study also identified variations on how those factors operate based on race and ethnicity. Such findings may help universities design interventions for more equitable participation in study abroad among students of all races and ethnicities.

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Predicting Participation in Study Abroad:
An Examination of the Factors Associated with Application Withdrawal and How They
Contribute to Racial/Ethnic Disproportionality

The enrollment of U.S. undergraduate college students in study abroad programs has grown significantly since the end of World War II (Open Doors Report, 2019). Such growth was fueled, in part, by post-war government actions supporting study abroad as a peace-building activity (Hoffa & DePaul, 2010) and a growing body of academic research confirming the academic benefits of studying abroad (Kasravi, 2009).

Unfortunately, the relative number of non-White students participating in study abroad programs has been consistently lower than that of White students (Brux and Fry, 2010). Some researchers have attempted to provide solutions for closing the enrollment gap between White and non-White students (e.g., Kasravi, 2009; Salisbury, Umbach, Paulsen, and Pascarella, 2009; Stroud, 2010). Students who do not study abroad while in college may not develop certain skills that are commonly attributed to that educational mode (e.g., intercultural competence, adaptability, flexibility), and due to disproportionality in study abroad participation, non-White students may lack the opportunity to develop these skills at higher rates. This reality compounds with other disadvantages many non-White students encounter in their educational journey.

Much of the literature on disproportionality in study abroad participation has primarily relied on comparisons between students who go abroad with those who do not based on data from college admission surveys and final study abroad enrollment as in Salisbury et al (2009) and Stroud (2010). This line of research may omit an important facet of the problem: although participation in study abroad varies by race and ethnicity,

interest for studying abroad may not vary the same way. Existing approaches have grouped students who withdraw from the study abroad application process with those who never applied to study abroad, thus failing to capture an important aspect behind the racial and ethnic enrollment gap in study abroad.

This proposed research is an attempt at addressing the study abroad enrollment gap by analyzing data from a questionnaire (see Attachment A) that students at the University of Oregon (UO) answer at the initial stage of the study abroad application process. Utilizing study abroad application data from the UO in 2017, I conducted preliminary analyses in which I identified that interest in study abroad is almost identical among undergraduate students, independent of race and ethnicity. In other words, the percentage of students who initiated study abroad applications almost exactly matched the percentage of UO students, by race and ethnicity. And yet disproportionality does exist in the final numbers of students that study abroad at the UO. Specifically, a higher proportion of White students complete the study abroad application process when compared to non-White students. That suggests that disproportionality in study abroad participation happens between the moment students start an application and the deadline for confirming participation.

Global Education Oregon (GEO) is the study abroad office for the UO. In fall of 2019, GEO started using a new Study Abroad Background (SAB) questionnaire, which asks an in-depth set of questions related to motivation and barriers to participation in study abroad. The SAB questionnaire was developed with the expectation that the answers collected through that questionnaire would allow for the identification of students at risk of not studying abroad. The present study is based on answers students

provided to the SAB questionnaire. More specifically, this study tried to identify which factors led students to not confirm participation in study abroad and how the factors varied for White and non-White students. The focus on non-participation in study abroad is an important aspect of this study. By focusing on factors associated with participation, this research may help universities design specific interventions to address disproportionality in study abroad by race and ethnicity.

Benefits of Study Abroad

Over the years, the promotion of study abroad has switched from a rationale based on building world peace to one based on individual and institutional benefits (Twombly, Salisbury, Tumanut, & Klute, 2012). Growing interest in study abroad has also been supported by research confirming the benefits of studying in another country for institutions and for students. Barclay-Hamir (2011) found that students who studied abroad had a 60% chance of graduating on time compared to 45% for those who did not study abroad. Analysis of data from The University of Georgia's Georgia Learning Outcomes of Students Studying Abroad Initiative (GLOSSARI) indicated that full-time students who studied abroad graduated within five years at a rate of 94.7% compared to 82.3% for those who did not study abroad (Engel, 2017). Cubillos and Ilvento (2013) concluded that participation in study abroad programs of any length or destination improved student's self-efficacy perceptions. Additionally, participation in study abroad influenced students' understanding of moral and ethical issues and improved their communication skills (Pascarella & Terenzini, 1991; Posey, 2003; Salisbury, 2011).

Increasing intercultural competence (IC), i.e. "the ability to communicate effectively and appropriately in intercultural situations based on one's intercultural

knowledge, skills and attitudes” (Deardorff, 2006, p. 247), is frequently listed as one of the main benefits of studying abroad. Heinzmann, Künzle, Schallhart, and Müller (2015) conducted a longitudinal study of 405 high school and college students who attended a language exchange program and 135 students who did not. For that study, both groups answered pre- and post-surveys to measure their IC level. The authors concluded that studying abroad increased IC, including willingness to engage with people from different cultures, and skills of discovery and interaction, in both the short- and long-term. Acknowledgement of the benefits of studying abroad has led universities, governments, and professional organizations to increase efforts to promote international education (Dessof, 2006).

Popularization of Study Abroad

The Institute of International Education (IIE) published its first census of US students abroad, known as the Open Doors Report, in 1954. That document has been published annually since then and has become the most important portrait of international education in the United States. The Open Doors Report contains data on the number of U.S. students going abroad, the types and locations of study abroad programs, and the racial and ethnic composition of students who go abroad.

Figure 1 illustrates the rapid growth in the number of US students going abroad since the 1990's. In 1994, 76,302 US students went abroad compared to 341,751 in 2017/18 (IIE, 2019).

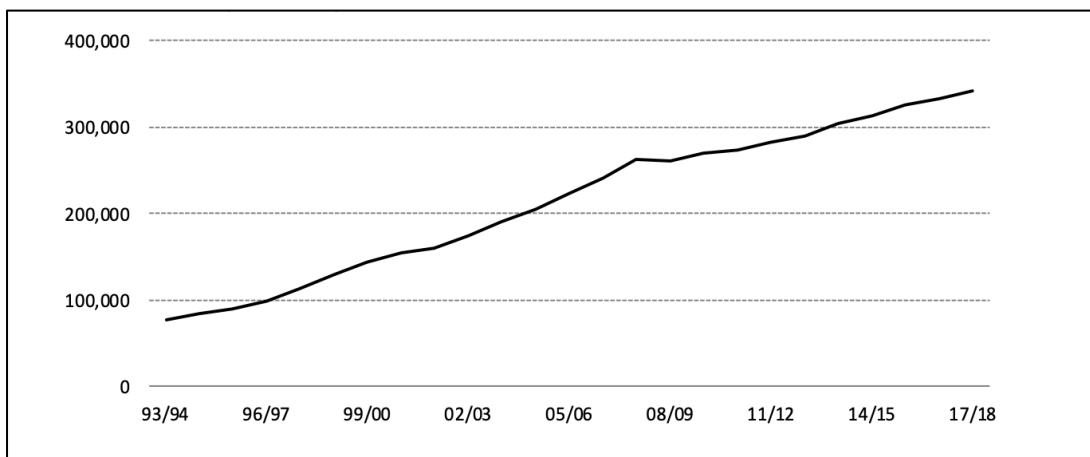


Figure 1. Enrollment in credit bearing study abroad programs from 1993-2017. Adapted from IIE Open Doors Fact Sheet 2019.

Growth in study abroad enrollment has been supported by the establishment of study abroad offices in most U.S. universities and colleges and the creation of study abroad organizations including The National Association of International Educators (NAFSA¹) and the Forum on Education Abroad, which were created in 1948 and 2000 respectively. Private organizations including the Council on International Education (CIEE) and the School for International Training (SIT) have contributed to the expansion of study abroad. CIEE operates in 43 countries and enrolls over 15,000 students per year (CIEE, 2019). SIT operates in 41 countries offering 90 undergraduate and master's degree programs (SIT, 2019). The UO, the setting of this study, operates study abroad programs in 21 countries via GEO and partners with providers such as CIEE and SIT to give its

¹ Acronym from previous name.

students access to over 250 programs distributed in about 90 countries (University of Oregon, 2020b).

The US federal government has been an important promoter of growth in study abroad. The Fulbright Commission, which is sponsored by the U.S. Department of State, has been granting scholarships for study abroad since 1946 and supported the foundation of the Council on Student Travel in 1947, which became CIEE in 1967. The U.S. Higher Education Act, since its reauthorization in 1992, allows the use of financial aid for study abroad programs including funds from Pell Grants, Perkins Loans, and Family Loans (Stroud, 2010).

Recent U.S. administrations have taken different approaches to the promotion of international education. In a 2000 memorandum on international education policy, President Bill Clinton (1993-2001) linked study abroad to U.S. economic competitiveness. Clinton said that “to continue to compete successfully in the global economy and maintain our role as a world leader, the United States needs to ensure that its citizens develop a broad understanding of the world, proficiency in other languages, and knowledge of other cultures” (Clinton, 2000 p.1). During the George W. Bush presidency (2001-2009), study abroad was incentivized by initiatives connected to national security. President Bush launched the National Security Language Initiative (NSLI) focusing on developing knowledge of critical foreign languages (NSLI, 2018). President Barack Obama (2009-2017) focused on region-specific programs by launching the 100,000 Strong in the Americas Innovation Fund and the 100K US-China Strong targeting Latin America and China respectively. These initiatives have fostered new

programs and increased the amount of scholarships for study abroad, which has led to higher overall enrollment.

Despite this steady growth in study abroad and bipartisan support for international education, two recent contextual factors have cast some doubt about future trends in study abroad. First, unlike prior presidents, the Donald Trump administration (2017-present) has not promoted study abroad. Some suspect that the current administration's rhetoric and actions on immigration was related to an annual decrease of 6.6% in the number of international students coming to the U.S. recorded in the fall of 2017 (Patel, 2018). NAFSA (2019) states that the internationalization of US college campuses is linked to higher participation rates in study abroad. Nevertheless, the number of US students going abroad grew slightly to 341,751 in the 2017-2018 academic year from 332,727 in the previous academic year (IIE,2020).

Second, the global COVID-19 pandemic is having a direct impact on study abroad as universities and organizations across the US have cancelled study abroad programs for the summer of 2020 and potentially into the future. As will be discussed later, COVID-19 also impacted the data and findings in this dissertation.

Finally, it is important to note that the format of study abroad programs and enrollment trends has changed over the years. University exchange programs (initially known as junior year abroad) have been replaced by short-term programs (six weeks or less) as the favorite type of study abroad program for U.S students (Twombly et al.,2012). The diversification of program types has contributed to increases in enrollment over the years (NAFSA, 2019).

Non-White Students in Study Abroad

While participation in study abroad nearly tripled between 1995 and 2008 (Figure 1, above), it remained highly inequitable. Figure 2 illustrates the relationship between the number of college students and participation in study abroad by race and ethnicity. White students (non-Hispanics) accounted for 73% of total enrollment in study abroad but represented only about 58% of the total college enrollment. Blacks/African Americans make up 15% of the US college population but only 6% of the college students enrolled in study abroad. Latino/Hispanics make up 17% of the US college population but only 9% of the college students enrolled in study abroad. Asian/Native Hawaiian, and Pacific Islanders are slightly overrepresented in study abroad. Multiracial and Native American students' participation in study abroad is about the same as their participation in the total U.S. college student population.

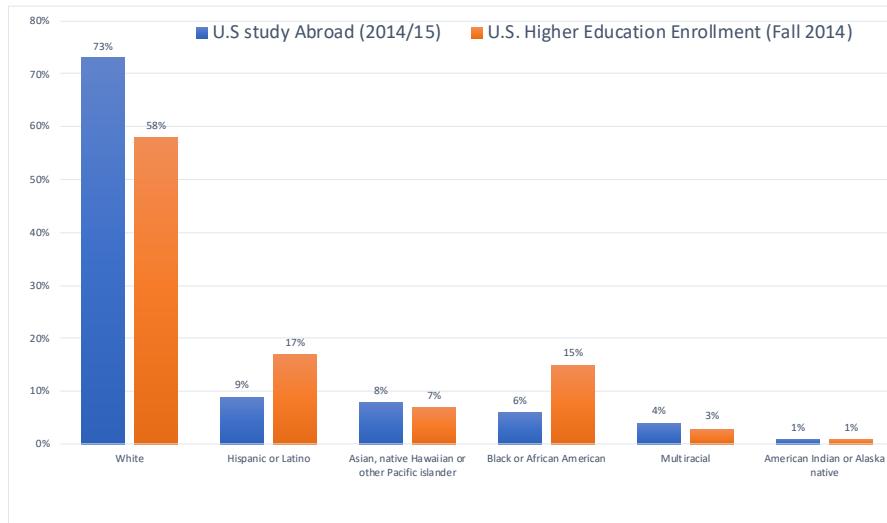


Figure 2. Race/ethnicity representation of U.S. students in study abroad and total college enrollment. Prepared with data from IIE Open Doors Report, 2018.

Because the increase in enrollment of non-White students in study abroad grew more slowly than those groups' increase in enrollment in college, the racial/ethnic enrollment gap in study abroad has persisted. Reducing the enrollment gap became a priority for many institutions of higher education, which led to the creation of the Diversity Abroad Network in 2006. The Diversity Abroad Network includes 230 universities and study abroad providers collaborating to reduce underrepresentation of certain groups in study abroad (Diversity Abroad Network, 2019). One of the current priorities for study abroad professionals is the approval of the Senator Paul Simon Study Abroad Program Act, which is pending approval by the US Senate (Reintroduced to the US Senate on 04/11/2019). The Simon Act focuses attention on expanding and diversifying study abroad by requiring grant recipients to demonstrate that increases in access are achieved and maintained after the grant period. The proposed legislation could increase enrollment for students from lower income levels and students attending community colleges.

Factors Influencing Enrollment in Study Abroad

Researchers have investigated which factors are related to a decision to study abroad either by analyzing college admissions survey data (e.g. Salisbury et al., 2009 and Stroud, 2010) or by gathering data from students already in college (e.g. Kasravi, 2009). Both lines of research have concluded that students consider multiple factors in their decision-making process about enrollment in academic activities. Qualitative research on participation of underrepresented students in study abroad has focused on identifying perceptions and barriers to participation in study abroad among White and non-White

students (Brux & Fry, 2010; Lu, Reddick, Dean, & Pecero, 2015; McClure, Szelenyi, Niehaus, Anderson, & Reed 2010; Sweeney, 2013).

Salisbury, Paulsen, and Pascarella (2011) analyzed data from a national survey of entering freshman [N= 6,828] at 53 2-year and 4-year institutions and found that various measures of human, financial, social, and cultural capital are significantly related to intent to study abroad and that those vary by gender and race. For example, increases in ACT scores and planning for graduate studies had a negative effect for White students and a positive effect for African Americans. Another finding from Salisbury et al (2011) indicated a strong positive effect of receiving federal grants for Hispanic students while indicating a negative effect for White students and no statistically significant effect for African American and Asian students.

Stroud (2010) used a large survey sample (N = 3,318 entering freshmen) to examine factors related to participation in study abroad such as family income and education, gender, race, intended major, attitudes about other cultures, and distance of college from home. The study concluded that being female, attending school outside of one's home city/town, and expressing an interest for other cultures and countries are strongly related to students' intent to study abroad. In the same study, Stroud (2010) found that planning for graduate studies, living with family while attending school, and majoring in professional degrees such as engineering, architecture, and medicine are all associated with less interest in studying abroad. It is possible that students pursuing professional degrees may see studying abroad as a barrier for completing the academic requirements of their programs or for admission to graduate studies. Students in certain majors may see a local internship in their field as more important for future job

applications than studying abroad. Furthermore, Stroud (2010) found weak-to-moderate correlations between students' race and parents' education and income.

Goldstein and Kim (2006) found that students who studied abroad differed significantly from those who did not in terms of concern about completing their major, study abroad expectations, ethnocentrism, prejudice, and foreign language interest. Li, Olson and Frieze (2013) found that students who had more desire to study abroad also scored higher on neophilia (novelty-seeking personality), migrant personality (predisposal to migrate, travel), and desire to help.

Kasravi (2009) conducted a mixed-method explanatory study that included a survey for students who did study abroad and another survey for those who did not. Kasravi identified several social, personal, and institutional factors that are related to participation in study abroad and that some factors vary by race and ethnicity. For example, all Hispanic or Latino students (11 Hispanic or Latino students participated in the study) disagreed with the statement "participating in study abroad is the norm for people from my culture" while only 62% of Asian students (43 Asian students participated in the study) disagreed with that statement. While 83% of Asian students agreed with the statement "friends were very influential in my decision to study abroad," only 36.4% of Hispanic or Latino students agreed. Finally, while all other non-White students in Kasravi's study felt encouraged by their university to study abroad, only 36.4% of Hispanic or Latino students felt that way. Kasravi (2009) organized explanatory variables under personal, social, and institutional factor, a model that is also applied in this research and is explained in more details below.

In their qualitative phenomenological study investigating the interests and constraints of multicultural students who studied abroad, Brux and Fry (2010) concluded that institutions can contribute to reducing the enrollment gap of minorities by promoting and supporting internationalization on campus, aligning academic schedules and curriculum between study abroad and on campus programs, improving access to funding opportunities, and by addressing personal factors such as family pressures.

Salisbury et al. (2009) found that students' pre-college social and cultural capital accumulation is correlated with intent to study abroad while in college. Salisbury et al. (2009) provided evidence that institutions can mitigate some of the effects of low pre-college capital accumulation by crafting more opportunities for students to engage in diverse interactions and co-curricular experiences. Similarly, Luo and Jamieson-Drake (2015) also identified that intent to study abroad may be impacted by engagement in extra-curricular activities. As noted by Salisbury et al. (2009) and Luo and Jamieson-Drake (2014) the college experience may change students' perceptions about studying abroad. A survey study ($N = 12,606$) by Bayleyshea (2009) found that faculty support, college engagement, and attitudes towards diversity correlated significantly with participation in study abroad and that those varied by race and ethnicity.

Understanding the factors that lead to different enrollment rates for White and non-White students might help universities adopt measures to close the enrollment gap between the two groups. While researchers have successfully identified variations by race and ethnicity regarding decision-making factors about study abroad, they have failed to provide a method that universities can intuitively apply to design group-specific interventions integrated to current-cycle application processes. This study aimed at filling

this gap in the literature through an investigation of factors that could predict study abroad participation based on information collected from current-cycle study abroad applicants to predict those at risk of not confirming participation. I also investigated differences in the selected factors by race and ethnicity, which may help universities design interventions for more equitable participation in study abroad among students of all races and ethnicities.

Theoretical Framework

The theoretical framework for this study includes elements from the theory of reasoned action (Becker & Gibson, 1998), Perna's student choice model (Perna, 2006). and push-pull framework (Mazzarol & Soutar, 2002). all of which I briefly describe below. Theory of reasoned action posits that individuals use available information and consider potential outcomes in their decision-making. Perna's integrated student choice model placed the elements of reasoned action (information, attitudes, and behavior) that inform student decision-making inside a multilayered frame that includes internal context, family context, school context, and societal context (Perna, 2006). A push-pull framework allows for the analysis of factors that push (motivate) and pull (attract) students to apply to a specific study abroad program (Mazzarol & Soutar, 2002). Push factors may include academic requirements for international experiences and students' cultural heritage. Pull factors may include availability of program-specific scholarships and reputation of foreign educational institutions. A push-pull framework is helpful for the analysis of student decision-making connected to specific program or types of program and locations.

Salisbury et al (2009) and Salisbury et al (2011) applied Perna's model to identify the social and cultural factors (including social capital, economic status, race and ethnicity, openness to diversity, and college experience) that impact students' decision to study abroad. Kasravi (2009) also used theory of reasoned action to construct a theoretical model capable of predicting participation in study abroad. In Kasravi's model, factors influencing participation in study abroad were categorized in three groups: personal, social, and institutional factors. Personal factors include openness to diversity, aspirations, fears, and interest in host country culture. Social factors include academic and career pressures, recommendations, and family background. Institutional factors include academic requirements, study abroad offerings, advising orientation, and funding. A push-pull framework was used by (Mazzarol & Soultar, 2002) to investigate student's decision-making regarding the destination of their study abroad experience.

Figure 3 illustrates the theoretical framework used in this study. This framework places student decision-making into a broader context as did Kasravi (2009), Perna (2006), and Salisbury et al (2009). It draws on Kasravi's organization of factors into three categories (personal, social, and institutional). Additionally, it allows for a comprehensive analysis of students' decision-making process regarding study abroad. It integrates into a single framework the elements of theory of reasoned action, an investigation of barriers to participation, and the possibility for program-specific and program type and locations analyses with a push-pull framework.

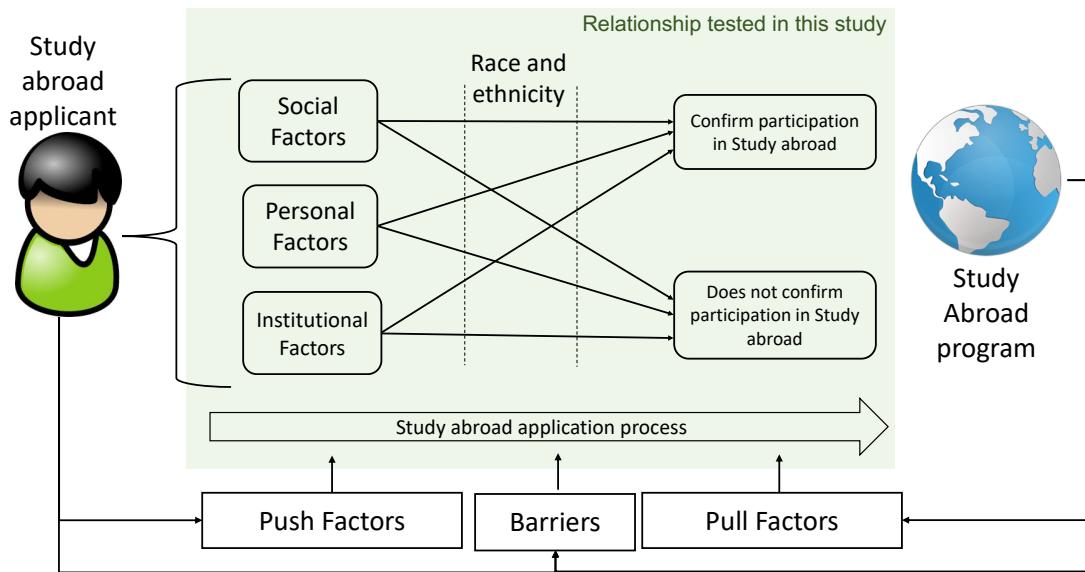


Figure 3. Theoretical framework identifying the groups of factors related to students' decision-making regarding study abroad. Only the elements and relationships included in the shaded area are analyzed in this study.

I hypothesize that a combination of social, personal, and institutional factors will be predictive of students who, after starting an application, will not confirm participation in a study abroad program. However, I also think some of these factors will operate differently for White and non-White students. For example, the financial cost of study abroad likely influences all students' decisions to study abroad. Obstacles to participation, however, may be a more important factor for non-White students compared to White students. The above theoretical framework will guide this study to answer the following research questions:

Research Questions

Research question 1. How are student-level institutional, personal, and social characteristics associated with students' likelihood of withdrawal from the study abroad application process at UO?

Null hypothesis. H_0 : There will be no difference in participation rates based on personal, social, and institutional factors.

Research question 2. How do the student-level institutional, personal, and social characteristics associated with students' likelihood of withdrawal vary by race and ethnicity?

Null hypothesis. H_0 : There are no significant differences in the factors that predict participation in study abroad by race and ethnicity.

Data and Methods

This study explored how several variables grouped under personal, social, and institutional factors are associated with students decision-making process regarding study abroad. The use of a quantitative non-experimental cross-sectional study allowed for the analysis of data from students applying to study abroad programs for the same period and at a single, large public research university. The chosen study format prevented differences in study settings and timing from impacting the data collected. All students who applied to a study abroad program via GEO and answered the Study Abroad Background (SAB) questionnaire (described below) by March 21, 2020² were included in this study. If answers to the SAB questionnaire can provide data capable of predicting who will enroll in a program and who will not, GEO can use that information to design specific interventions to students at risk of not enrolling in a study abroad program.

² GEO's original deadlines were March 15, 2020 for summer 2020 programs and April 15 for fall 2020 and Spring 2021 programs. Original deadlines were postponed due to the COVID-19 pandemic. The March 21 cut date was chosen to allow this research to be completed in the 2020 academic year. By the chosen cut date, enough students had made a final decision regarding their applications. By May 3, 2020 when this dissertation was submitted, international travel for June and July 2020 remained suspended.

Study Setting

This study was conducted at the UO, a large public research university enrolling over 20,000 undergraduate students. Approximately 25% of UO students study abroad at some point during their college years (University of Oregon, 2020a). The university is becoming more diverse as illustrated in Table 1.

Study abroad programs for UO students are managed by GEO and include over 270 programs in more than 90 countries. All students wishing to attend a UO-sponsored study abroad program apply via an online system managed by GEO. Starting in 2019-20, the online application system included the SAB questionnaire as a mandatory part of the initial application.

Table 1

Undergraduate Enrollment at the University of Oregon 2015-2019 by Race/Ethnic Group

Race/Ethnicity	2015		2019	
	Number	%	Number	%
Asian	1,334	6.4	1,441	6.9
Black or African American	472	2.3	548	2.6
Hispanic	2,270	10.9	2,855	13.7
Native American	252	1.2	256	1.2
Two or more	1,402	6.7	1,635	7.9
White, non-Hispanic	14,618	70.1	13,572	65.3
Other/Unknown	503	2.4	468	2.3
Total	20,851		20,628	

Note: Race and ethnicity categories exclude international students. Prepared with data from UO Office of Institutional Research; 4th-week census fall term 2015-2019.

Participants

This study included 1,016 students who completed the online study abroad application for study abroad programs scheduled between summer of 2020 and spring of

2021. Of those students, 750 had made a final decision regarding enrollment in study abroad programs. Among the ones who reached a final decision, 458 were confirmed participants and 292 were confirmed non-participants (students who had withdrawn from the application process by own initiative, students withdrawn by staff, or students who did not complete the required application steps) by March 21, 2020. I excluded 266 cases of students who had not yet determined whether they were going to study abroad (n=121) and those whose applications were still under review by GEO staff (n=145)³. Table 2 provides demographic information for the population and sample of this study.

Measures

The data for this study was pulled from the GEO study abroad application and management system (TDS⁴ for Study Abroad), which holds all student applications processed by GEO. That system stores key variables for this analysis such as race, gender, and study abroad confirmation. In addition, it holds all data from a new SAB questionnaire, which GEO added as a required part of the application, beginning in fall, 2019

SAB questionnaire. In fall of 2019, GEO started using a new study abroad application questionnaire (A copy of the SAB questionnaire is available in appendix A), which allows for the identification of factors that may influence students' decision-

³ These cases potentially include students who did not make a decision regarding study abroad as a consequence of travel suspension due to the COVID-19 pandemic. The cut date allowed the researcher to utilize a sample that had not yet been impacted by travel suspensions announced on March 14, 2020. Nevertheless, news about the pandemic may have influenced some students to postpone making decisions regarding enrollment. That said, the characteristics of the sample that made their decision by March 21 date may be different from the characteristics of the full sample.

⁴ Software name, not an acronym.

making process as described in the theoretical framework above and further detailed below. GEO opted for a short, 15-question, required questionnaire to prevent the use of a longer survey from becoming another obstacle for participation. Some questions included in the SAB questionnaire originated more than one dichotomous variable used in this study and not all questions were relevant to this study. All student data needed for this study was exported from TDS Study Abroad as a comma separated file (.csv), which was then loaded into SPSS for recoding and statistical analysis.

Variables

My study included multiple independent variables and one dependent, outcome variable, which is participation in a study abroad program. I grouped the independent variables under personal, social, and institutional factors based on prior literature on this topic. To answer research question 2, race and ethnicity was used as a moderating variable. The following section describes the variables used in this cross-sectional, non-experimental research design. Table 2 describes the variables included in the study. A list including all variables mapped to their respective data sources is included in Appendix B.

Table 2

Independent Variables Included in the Study

Type	Variable	Values
Social factors		
	Has anyone in your family previously studied abroad?	Yes (1), No (0)
	Are any of your friends currently planning to participate in a study abroad program?	Yes (1), No (0)
	Finance is an obstacle to participation	Yes (1), No (0)
	Enrolled in fraternity or sorority	Yes (1), No (0)
	Will pay for study abroad using personal funds	Yes (1), No (0)
	Will pay for study abroad using scholarships	Yes (1), No (0)
	Will pay for study abroad using Pell grants	Yes (1), No (0)
	Will pay for study abroad using financial aid	Yes (1), No (0)
	Influenced by: Family	Yes (1), No (0)
	Influenced by: Friends	Yes (1), No (0)
Personal factors		
	Female	Yes (1), No (0)
	Have you previously traveled to another country?	Yes (1), No (0)
	First-generation student	Yes (1), No (0)
	Non-traditional student	Yes (1), No (0)
	Count of obstacles student identified	0 to 9
	Engaged in faith-based activities	Yes (1), No (0)
	Engaged in volunteer service	Yes (1), No (0)
	Engaged in work or internship	Yes (1), No (0)
	Engaged in Athletics	Yes (1), No (0)
	Engaged in student clubs	Yes (1), No (0)
Institutional factors		
	My university encourages students like me to study abroad.	Yes (1), No (0)
	Influenced by: Academic requirements	Yes (1), No (0)
	Influenced by: Program location	Yes (1), No (0)
	Influenced by: Internship or volunteer opportunity abroad	Yes (1), No (0)
	Influenced by: Timing and duration of study abroad program	Yes (1), No (0)
	Influenced by: Language of study abroad program	Yes (1), No (0)
	Influenced by: Immersion level of study abroad program	Yes (1), No (0)
	Influenced by: Cost of study abroad program	Yes (1), No (0)
	Influenced by: Prestige of host institution	Yes (1), No (0)
Demographic		
	Non-White	Yes (1), No (0)

Dependent variable. For this study, the dependent variable (study abroad enrollment) was derived from the status descriptors that GEO applies to study abroad applications to indicate current status and outcome of each application. Applications identified as “Acceptance confirmed” and “Nominated” (students who confirmed enrollment in exchange programs via GEO but who are waiting for a decision from the host university) were coded as “Yes” and students who were identified as “Initial Application process (incomplete applications), “ Withdrawn by Staff (after review and/or deadlines), and “Withdrawn at Initial Application Process” were coded as “No.” Applications identified as “ Under review”, “Nomination Offered” and “Acceptance Offered” were coded as missing and dropped from the analytic sample, since the outcomes of those applications could not be determined by the cut date for this study.

Independent variables. As described in the literature review, several variables appeared promising as indicators of enrollment outcomes for study abroad applicants. The independent variables from the SAB questionnaire included in the study were grouped under personal, social, and institutional factors as illustrated in Table 5. Twenty-nine variables included in this study are dichotomous and coded as “Yes” and “No.” One is categorical for race and ethnicity options. Study abroad applications are multi-stage and include multiple required items for all applicants, plus additional items that are program specific.

Question 3 in the SAB questionnaire, which asks students for their primary motivation to apply for study abroad, was removed from the regression models due to multicollinearity.

Moderating variable. Race/ethnicity was used as a moderating variable to answer RQ 2. Each race/ethnicity category was converted into binary variables such as Latino/Not Latino and Asian/Not Asian for example. Because of limited sample for most race and ethnicity categories, a dummy variable “Non-White” was created in which non-White students were coded as 1 and White students coded as 0. This dummy variable separates the group that is usually overrepresented in study abroad at the UO from those who are traditionally underrepresented.

Analysis

I used descriptive statistics to illustrate the characteristics of the sample and the population and the existence of an enrollment gap between White and non-White students (disaggregated by race and ethnicity categories). To answer my two research questions, I used binary logistic regression models as explained below.

Binary logistic regression. Since students who apply for study abroad can be separated between those who apply and confirm participation and those who withdrawal from the process for any reason, the outcome is dichotomous. Thus, binary logistic regression can be used to predict the odds ratio of confirming participation in study abroad or not based on the values of the independent variables (referred here as factors or predictors interchangeably).

Research Question 1. To reiterate, the purpose of this question was to identify which factors could predict participation in study abroad. Using the outcome variable Enrollment, predictor variables were examined to identify which factors can indicate students at risk of not enrolling in a study program after answering the SAB questionnaire at the initial application stage. A progression of binary logistic models was created to

examine whether variables in each group (social, personal, and institutional) were significantly associated with differences in the outcome variable (study abroad enrollment). First, I ran three binary logistic regression models including only the variables for each factor group (Models 1-3 in Table 3). Then, significant variables from each group were used in a final, combined regression model for Research Question 1 (Model 4 in Table 3).

Table 3

Binary Logistic Regression Models Tested in This Study

Model	Variables used
1	Only social factors
2	Only personal factors
3	Only institutional factors
4	All significant factors from models 1, 2 and 3
5	Variables in Model 4 plus Non-White
6	Fully interacted model of all variables in Model 4 plus Non-White

Results from Model 4 were used to answer RQ1 (How are student-level institutional, personal, and social characteristics associated with students' likelihood of withdrawal from the study abroad application process at UO?). I used binary logistic regression to determine which of the personal, social, and institutional factors examined were significant predictors of participation in study abroad. Specifically, the $\text{Exp}(\beta)$ ⁵ coefficients on each of the variables, combined with their statistical significance, indicate

⁵ This is the exponentiation of the β coefficient, which is an odds ratio. This value is given by default because odds ratios can be easier to interpret than the coefficient, which is in log-odds units.

the size and strength of the association of each factor with students' study abroad decisions. I report the results as $\text{Exp}(\beta)$ coefficients in tables and refer then as likelihood (expressed in times for dichotomous variables and unit increases for continuous variables) in my results and discussion for ease of comprehension. A positive, significant coefficient indicates that a specific factor, e.g. receiving encouragement to study abroad from a faculty member, is positively associated with students' decision to enroll in a study abroad program. $\text{Exp}(\beta) > 1$ indicates a positive relationship between a factor and the outcome variable and $\text{Exp}(\beta) < 1$ indicates a negative relationship. For example, if the $\text{Exp}(\beta)$ for family influence is 1.53, that indicates that a student who reported being influenced by family to select a study abroad program is 1.5 times more likely to confirm participation than a student who reported not being influenced by family to do so.

The null hypothesis for RQ 1 is that there was no difference in participation rates based on personal, social, and institutional factors. If this is the case, there will be no factor variables significantly related to the outcome. However, my hypothesis is that there will be factors in each of the three areas that significantly predict study abroad enrolment.

Research Question 2. To reiterate, the purpose of this question was to identify how factors that could predict participation in study abroad vary by race and ethnicity. To answer this, I ran two models. First, in Model 5 (Table 3) I added a "Non-white" dummy variable to the six factors in Model 4. White students are the comparison group (i.e. the omitted category). Results from this model indicate whether African-American students, Hispanic or Latino students, Asian students, and Native American students, are significantly more or less likely to study abroad once controlling for the significant personal, social, and institutional factors identified through Research Question 1. For

example, a negative and significant coefficient on the “Non-white” indicator variable would mean that non-White students are less likely to study abroad than White students, holding constant a range of personal, social, and institutional factors.

Then in Model 6 I interacted all personal, social, and institutional variables with the “Non-White” dummy variable. Ideally, I would have interacted all variables with all racial dummy variables, but my sample was not large enough. Results from this model answered research question 2 by indicating whether the association of personal, social, and institutional factors with study abroad outcomes differs for White students versus for non-White students. The coefficients on each personal, social, and institutional factor in this model indicates the association of that variable with study abroad enrollment among non-White students. For example, a negative and significant coefficient on the interaction variable between “Non-White” and “My university encourages participation in study abroad for students like me” variable indicates that the relationship between this variable and study abroad enrollment is more negative for non-White students than for White students.

The null hypothesis for RQ2 is that there were no significant differences in the factors that predict participation in study abroad by race and ethnicity. If this is the case, there will be no interaction variables significantly related to the outcome. However, my hypothesis is that there will be interactions in each of the three areas that significantly predict study abroad enrolment indicating that factors operate differently for non-White students compared to White students.

Results

The purpose of this dissertation was to examine which factors led students to withdraw from the study abroad application process and how this varies by race and ethnicity. To preview my findings, the final binary logistic regression analysis for research question 1 (Model 4) identified six factors that can significantly predict participation in study abroad, including factors in each of the three theoretical-derived areas: personal, social, and institutional. Results for research question 2, identified statistically significant differences by race and ethnicity. In other words, I did find evidence that some factors operate differently by race/ethnicity among my sample. After describing descriptive statistics regarding racial/ethnic composition in study abroad at UO, I report the results of binary logistic regression analyses by research question and conclude with a summary of significant findings.

Descriptive Statistics

Descriptive statistics presented in Table 4 confirm the historic trend of over representation of White students in study abroad. In this sample, Hispanic or Latino, Native Hawaiian and other pacific islanders, and students of two or more races were underrepresented in study abroad. Participation of Asian students and American Indian or Alaska Native students in study abroad matched their participation in the study population. Of marked difference from prior research, African Americans in this sample were overrepresented in study abroad. Based on historic trends, the rates for American Indian or Alaska Native and Black or African American students were expected to reveal underrepresentation. The current unexpected results for these two groups may have been

influenced by the availability of specific scholarships and/or have been impacted by the smaller number of students from both groups included in the sample.

Table 4

Race and Ethnicity of Analytical Sample and Population

Race and ethnicity	UO undergraduate students		SAB questionnaire respondents		Confirmed enrollment	
	n	%	n	%	n	%
White	13,572	65.3%	704	69.3%	345	75.3%
Hispanic or Latino	2,855	13.7%	109	10.7%	44	9.6%
Two or more races	1,635	7.9%	14	1.4%	5	1.1%
Asian	1,441	6.9%	98	9.6%	31	6.8%
Black or African American	548	2.6%	29	2.9%	14	3.1%
Other/unknown	468	2.3%	47	4.6%	27	3.6%
American Indian or Alaska native	155	0.7%	12	1.2%	3	0.7%
Native Hawaiian or other Pacific Islander	97	0.5%	3	0.3%	0	0.0%

Note: Race and ethnicity categories excludes 1,842 international students. Prepared with data from the UO Office of Institutional Research; 4th-week census fall term 2019.

This study included one continuous variable, “Count of obstacles student identified as barriers to participation in study abroad.” The minimum value for that variable was “0” and the maximum value was “8.” The mean was 1.6614 and the standard deviation was 1.18344.

Tables 5 presents descriptive statistics for the categorical explanatory variables by the outcome variable, participation in study abroad. For each level of the independent variables, percentage of students who confirmed participation or non-participation in study abroad are presented. While White students confirmed participation at a rate of 62.4%, non-White students did so at a lower rate of 57.4%. Disproportionality in study

abroad enrollment between White and non-White students appears, therefore to be attributable to both lower proportions of non-White students beginning the application process and a lower proportion of non-White students confirming participation in a study abroad program.

Surprisingly, a greater proportion of students confirmed participation among students who declared that “finance was an obstacle” (69.4%) in studying abroad compared to those who did not claim that finance was an obstacle (49.2%). There was almost no variation in study abroad participation in relation to having previous experience travelling abroad.

The most significant difference in confirmation rates was displayed by students who answered “no” to “My university encourages participation in study abroad for students like me.” Over 81% of the students who did not feel institutional encouragement for studying abroad ended up not confirming participation. The descriptive statistics in Table 5 will be further clarified by the results of the regression analyses presented below.

Table 5

Descriptive Statistics for Categorical Independent Variables Used in the Study

Variable	N	Value labels	Has confirmed participation in a study abroad program	
			No	Yes
Race and ethnicity (Non-White)	1016	White students	37.6%	62.4%
		Non-White students	42.6%	57.4%
Has anyone in your family previously studied abroad?	973	No	35.1%	64.9%
		Yes	44.8%	55.2%
Are any of your friends currently planning to participate in a study abroad program?	855	No	39.5%	60.5%
		Yes	38.5%	61.5%
Finance is an obstacle to participation	1016	No	50.8%	49.2%
		Yes	30.6%	69.4%
Will pay for study abroad using scholarships	1016	No	47.1%	52.9%
		Yes	33.8%	66.2%
Will pay for study abroad using Pell grants	1016	No	38.1%	61.9%
		Yes	44.0%	56.0%
Will pay for study abroad using financial aid	1016	No	42.3%	57.7%
		Yes	33.1%	66.9%
Will pay for study abroad using personal funds	1016	No	39.2%	60.8%
		Yes	38.8%	61.2%
Influenced by: Family	1016	No	38.0%	62.0%
		Yes	44.9%	55.1%
Influenced by: Friends	1016	No	38.5%	61.5%
		Yes	42.1%	57.9%
Engaged in fraternity or sorority	1016	No	39.0%	61.0%
		Yes	38.7%	61.3%
Female	1004	No	46.8%	53.2%
		Yes	36.5%	63.5%
Non-traditional student	1016	No	39.2%	60.8%
		Yes	34.8%	65.2%
First-generation student	1016	No	40.4%	59.6%
		Yes	31.7%	68.3%
Have you previously traveled to another country?	1012	No	38.4%	61.6%
		Yes	38.8%	61.2%
Engaged in student clubs	1016	No	40.5%	59.5%
		Yes	37.4%	62.6%

Table 5, Continued

Variable	N	Value labels	Has confirmed participation in a study abroad program	
			No	Yes
Engaged in faith-based activities	1016	No	39.8%	60.2%
		Yes	30.3%	69.7%
Engaged in volunteer service	1016	No	38.7%	61.3%
		Yes	39.4%	60.6%
Engaged in work or internship	1016	No	38.9%	61.1%
		Yes	39.0%	61.0%
Engaged in Athletics	1016	No	37.9%	62.1%
		Yes	47.5%	52.5%
Influenced by: Academic requirements	1016	No	39.4%	60.6%
		Yes	38.9%	61.1%
Influenced by: Program location	1016	No	42.3%	57.7%
		Yes	37.3%	62.7%
Influenced by: Internship or volunteer opportunity abroad	1016	No	39.4%	60.6%
		Yes	35.1%	64.9%
Influenced by: Timing and duration of study abroad program	1016	No	41.5%	58.5%
		Yes	35.9%	64.1%
Influenced by: Language of study abroad program	1016	No	39.2%	60.8%
		Yes	38.3%	61.7%
Influenced by: Immersion level of study abroad program	1016	No	39.3%	60.7%
		Yes	38.4%	61.6%
Influenced by: Cost of study abroad program	1016	No	38.2%	61.8%
		Yes	44.2%	55.8%
Influenced by: Prestige of host institution	1016	No	39.2%	60.8%
		Yes	34.9%	64.1%
My university encourages participation in study abroad for students like me	1013	No	81.3%	18.8%
		Yes	34.7%	65.3%

Results for research question 1. As described in the method section, I ran three binary regression analysis models to identify the significant predictors in each factor group (models 1, 2, and 3). The significant factors from the three initial models were then included in a combined Model 4 as presented in Table 6.

Table 6

Results of the Binary Logistic Regression Analysis for RQ1

Variable	<u>Model 1</u>		<u>Model 2</u>		<u>Model 3</u>		<u>Model 4</u>	
	Exp(β)	SE						
Social factors								
Has anyone in your family previously studied abroad?	0.784	0.182						
Are any of your friends currently planning to participate in a study abroad program?	1.151	0.205						
Influenced by: Family	1.026	0.272						
Influenced by: Friends	0.736	0.264						
Finance is an obstacle to participation	2.357***	0.201					2.730***	0.184
Will pay for study abroad using scholarships	1.452*	0.200					1.409*	0.186
Will pay for study abroad using Pell grants	0.467**	0.290					0.573**	0.250
Will pay for study abroad using financial aid	1.307	0.227						
Will pay for study abroad using personal funds	0.785	0.186						
Engaged in fraternity or sorority	1.190	0.205						
Personal factors								
Female			1.529**	0.179			1.276	0.191
Have you previously traveled to another country?			1.134	0.249				
Engaged in faith-based activities			1.489	0.285				
Engaged in volunteer service			0.852	0.165				
Engaged in work or internship			0.939	0.157				
Engaged in Athletics			0.667*	0.243			0.568**	0.256
Engaged in student clubs			1.149	0.156				
Count of obstacles student identified			1.077	0.067				
First-generation student			1.405	0.221				
Non-traditional student			1.080	0.330				
Institutional factors								
Influenced by: Academic requirements					0.957	0.163		
Influenced by: Program location					1.055	0.187		
Influenced by: Internship or volunteer opportunity abroad					1.516	0.276		

Table 6, continued

Variable	Model 1	Model 2	Model 3	Model 4
	Exp(β) SE			
Influenced by: Timing and duration of study abroad program			1.302	0.177
Influenced by: Language of study abroad program		0.993	0.181	
Influenced by: Immersion level of study abroad program		1.009	0.168	
Influenced by: Cost of study abroad program		0.713	0.237	
Influenced by: Prestige of host institution		1.179	0.352	
My university encourages study abroad for students like me		8.737***	0.336	9.93*** 0.343
Percentage predicted correct	63.2	61.9	66.7	67.1
True negatives	36.1	9.4	18	34
Nagelkerke R square	.099	.030	.105	.183

Note: Exp(β) = Odds ratio expressed as exponentiated β coefficients. SE = Standard error. *p<0.1, **p<0.05, ***p<0.001

Regression analysis of social factors (Model 1). Three of the eleven social factors were significant predictors of participation in study abroad. One factor, “planning on using Pell grants to pay for study abroad”, behaved as expected with students who answered “yes” to this factor being less likely to confirm enrollment (0.467 times). Surprisingly, students who indicated that finance was an obstacle to participation were 2.36 times more likely to study abroad. While different from prior research, these results align with descriptive statistics of the analytic sample where students who indicate that “finances is an obstacle” are overrepresented in confirmed study abroad enrollment compared to those who do not indicate as such. In the discussion I explore possible reasons for some of the surprising results in this analysis. A similar result was observed for indicating the use of scholarships to pay for study abroad. Students who expected to use scholarships to pay for their study abroad programs were 1.45 times more likely to

confirm participation. Factors related to the influence of family and friends on student decision-making presented mixed results and were not statistically significant. Model 1 correctly predicted 63.2% of the outcomes (true negatives predicted correct at 36.1%).

Regression analysis of personal factors (Model 2). Two of the ten variables under personal factors proved significant in predicting enrollment. Being female was positively related with enrollment in study abroad. Female students were 1.5 times more likely to study abroad than male students. The gender variable revealed an expected relationship to the outcome variable since female students represented 71.3% of respondents and 77.1% of students who confirmed participation. Being engaged in athletic activities was significant and negatively correlated with studying abroad. Students who reported engagement in athletics were 0.6 times as likely as those not reporting being engaged in athletics to enroll in study abroad. Except for “engagement in faith-based activities” and being a “first-generation student” all other personal factors had small effect on the outcome variable, and none were statistically significant. Model 2 correctly predicted 61.9% of the outcome variable for students included in this study. True negatives were correctly predicted for just 9.4% of the cases. Model 2 is not a useful model of students who would be at risk of not confirming participation in a study abroad program.

Regression analysis of institutional factors (Model 3). Only one of the nine institutional factors proved to be a significant predictor of participation in study abroad. Expressing agreement with the statement “My university encourages participation in study abroad for students like me” increased the likelihood of a student confirming participation by 8.7 times. Being “influenced by the availability of internship and

volunteer opportunities” in a study abroad program ($p = 1.1$) increased the likelihood of confirming participation by 1.5 times, but this relationship was slightly above the significance threshold ($p < .1$). All other variables included in Model 3 were not statistically significant. Model 3 correctly predicted the outcome in 66.71% of the cases (18 % for true negatives).

Combined model (Model 4). Model 4 included only the variables from the three groups of factors that proved significant in predicting participation on the three models described above. Except for “female”, all variables that were significant in the initial models remained statistically significant in Model 4. The overall prediction accuracy of Model 4 was slightly higher than Model 3 (67.1% correct) and superior to models 1 and 2. Nevertheless, Model 1 was better at predicting students who did not confirm participation (36.1% correct) than Model 4 (34% correct). Agreement with the single institutional factor included in Model 4, “my university encourages study abroad for students like me”, increased the probabilities of confirming participation by 9.9 times. Small variations in odds ratio were identified for all other factors between Model 4 and their respective initial models.

Results for research question 2. As a first step toward answering RQ 2, I ran binary logistic regression analysis using Model 5, which included the same variables from Model 4 with the addition of a “non-White” indicator variable as illustrated in Table 7. The addition of this variable to the model increased the percentage of true negatives predicted correct by just 0.7%. Without the demographic moderator, Model 4 correctly predicted 34% of the true negatives compared to 34.7% in Model 5. The main effect of “non-White” was not statistically significant. This means that once available personal,

social, and institutional factors were held constant, there were no significant differences in the likelihood of studying abroad by being “non-White.” The fact that non-White students do not differ significantly from White students suggests that these personal, social, and institutional factors account for the disproportionality observed in the raw numbers of students confirming studying abroad.

Table 7

Results of Binary Logistic Regression Analysis for Research Question 2

Variables	Model 5		Model 6	
	Exp(β)	SE	Exp(β)	SE
Finance is an obstacle to participation	2.742***	0.184	3.735***	0.216
Will pay for study abroad using scholarships	1.418*	0.187	1.467*	0.218
Will pay for study abroad using Pell grants	0.589**	0.254	0.631	0.349
Female	1.263**	0.192	1.708**	0.233
Engaged in Athletics	0.565**	0.255	0.673	0.300
My university encourages study abroad for students like me	9.792***	0.344	11.313***	0.458
Non-White	0.893	0.192	5.330**	0.790
Female by Non-White			0.390**	0.426
Will pay for study abroad using scholarships by Non-White			0.812	0.448
Will pay for study abroad using Pell grants by Non-White			1.263	0.525
Non-White by Finance is an obstacle to participation Engaged in Athletics by Non-White			0.278**	0.444
My university encourages study abroad for students like me by Non-White			0.594	0.607
			0.802	0.697
Percent predicted correct/		65.3		68
Percent True negatives		34.7		53.8
Nagelkerke R square		.183		.214

Note: Exp(β) = Odds ratio expressed as exponentiated β coefficients. SE = Standard error. *p<0.1, **p<0.05, ***p<0.001

As a second step to answer RQ2, Model 6 tested the interaction of the predictor variables in Model 4 with identifying as non-White. In Model 6, the coefficients reported for the independent variables in Model 5 do not represent the main effects of those in the

outcome variable. That is because “[t]he effects of independent variables in the presence of an interaction term are not interpretable as main effects - instead, they are only the “simple” effects of the independent variable when the other independent variable is exactly equal to zero” (Crawford, Jussim, & Pilanski, 2014 p 857). Thus, interaction coefficients will reduce or add to the coefficients of simple effects for each independent variable in the model.

In Model 6, being “non-White” had a statistically significant main effect in the presence of its interaction with the other variables. Two interaction terms are significant, indicating that the ways in which these factors are associated with study abroad are different for White compared to non-White students. More specifically, compared to White students, non-White students who declared that “finance is an obstacle” to studying abroad were less likely to study abroad. Similarly, compared to White students, non-White students who were female were less likely to study abroad. The Nagelkerke R square coefficient, which represents the amount of variation in the data explained by the model, was higher for the interactive model than for all other models tested in this study.

Besides confirming that some factors operated differently for White compared to non-White students, Model 6 predicted true negatives at a rate of 53.8% correct. This fully interactive model was better at predicting students who will not confirm participation in study abroad than any other model tested. The second-best model predicted true negatives of a rate of 36.1% correct.

Discussion

This study was designed to examine which factors were associated with students not confirming participation after starting an application to a study abroad program and

how this varies between White and non-White students. In this section, I discuss the results for each of the two research questions and present limitations and recommendations for future research.

Social, Personal, and Institutional Factors as Predictors of Study Abroad

Participation

This study adds to an emerging body of literature on predictors of participation in study abroad (Bayleyshea, 2009; Brux and Fry, 2010; Goldstein & Kim, 2006, Heinzmann et al, 2015; Kasravi, 2009, Li et al, 2013; Luo & Jamieson-Drake, 2014; Salisbury et al, 2009; Salisbury et al, 2011, Stroud, 2010). The findings of this study confirmed the potential of using student-level social, personal, and institutional factors to predict participation in study abroad. Nevertheless, the number of statistically significant predictors for each factor group was relatively small and the relationship of some predictors with the outcome variable were not in the expected direction. Main findings for each group of factors are discussed below.

Social factors. Bayleyshea (2009) and Brux and Fry (2010) found that influence of family and friends correlated positively with participation in study abroad. In this study, family and friends influence in applying for study abroad programs were not a significant predictor of participation in such programs. Since the studies used as reference for this research did not publish their questionnaires, it is not possible to conclude if the diverging results are related to how questions were worded in the present and past research on this topic. A possibility to be examined in future research is the impact of sample composition in this surprising result. This study included only students who had started an application to study abroad while other studies in this topic also

included students who did not apply. It is possible that a significant difference may exist between UO students who started an application and those who did not.

The effect of financial barriers to study abroad also showed surprising results in this study. Based on the theoretical grounds described in my review of available literature on this topic, “facing financial obstacles” to participation was expected to correlate negatively with the outcome variable. Nevertheless, in this study, that relationship for the entire sample was positive. “Planning to pay for study abroad using scholarships” was statistically significant and also had a positive relationship with the outcome variable, contradicting previous research. It is possible that the sample included a high percentage of scholarship recipients, but the data available for this study did not allow this assumption to be tested. Among the statistically significant social factors, “Planning to pay for study abroad using Pell grants” was the only one for which the results of this study matched previous research. Expecting to use Pell grants to pay for study abroad correlated negatively with the outcome variable.

In sum, and probably because of the mixed results and limitations described above, the regression analysis model using only social factors was a moderate predictor of non-participation (true negatives), which is the focus of this study. The model could predict only 36.1% of the students in the analytical sample who would not confirm participation in study abroad programs.

Nevertheless, the results for social factors in the present study reinforces the suggestion made by Salisbury et al (2009) for universities interested in increasing study abroad participation. Universities “should broaden their focus beyond efforts to simply

alleviate direct costs. If students don't intend to study abroad, they are not likely to ever investigate whether financial assistance exists" (Salisbury et al, 2009 p 137).

Personal factors. Most of the existing research on this topic has focused on differences in characteristics between students who participate in study abroad and those who do not. In previous studies, the non-participants group usually included students who did not apply to study abroad (Heinzmann et al, 2015; Stroud, 2010; Goldstein and Kim, 2006; Salisbury et al, 2009). In this study, I compared students who applied to study abroad and confirmed participation with those who applied but did not enroll in a study abroad program. Since most of the personal factors included in the analysis did not prove significant, it is possible that the differences in the two groups of students included in this study are less prominent than the group differences in previous studies that included non-applicants. Being female and being engaged in athletics were the only significant predictors in the group of personal factors and they related to the outcome variable in accordance with previous research and enrollment trends. Female students were more likely to go abroad, and student athletes were less likely to do so. The model including only personal factors was a poor predictor on non-participation identifying only 9.4% of students in that condition.

Institutional factors. Institutional factors were expected to be highly influential in student decision making about participating in study abroad. That is because institutional requirements can impact the outcome in ways that social and personal factors can't. Colleges and universities may require participation in an international experience as a condition for obtaining a degree. For example, those conditions may include a residency abroad for language students or internships abroad for students majoring in

business, marketing, and international relations. That does not appear to be the case at the UO. The influence of academic requirements on students' decision to enroll was not significant.

Agreeing with the statement "My university encourages participation in study abroad for students like me" was a very strong predictor of participation ($p < 0.001$). In fact, this was the only significant factor among all the institutional factors included in this study. Feeling encouraged to participate in study abroad operates the same way for White and non-white students. Students who felt encouraged confirmed participation at higher rates than those who did among all racial and ethnic groups. This finding has the potential to guide UO and other universities' efforts to promote and encourage study abroad for students of color. Universities may adopt targeted outreach efforts to help students of various racial and ethnic groups feel encouraged to participate in study abroad. For example, universities may investigate what makes students from different groups feel like they belong in study abroad and use that information to guide outreach and program design.

It is surprising that for the sample in this study, none of the other institutional factors tested showed even marginal significance. As with personal factors, it is possible that a different outcome would be identified if the sample also included non-applicants as done in previous studies (Brux and Fry, 2010; Kasravi, 2009; Stroud, 2010). The model with institutional factors predicted only 18% of true negatives correct.

The Impact of Race and Ethnicity on Predictors of Study Abroad Participation

I was also interested in how the student-level institutional, personal, and social characteristics associated with students' likelihood of confirming participation in study

abroad vary by race and ethnicity. Previous research has identified variations by race and ethnicity in different combinations of predictors of participation or intent to study abroad (Brux & Fry, 2010; Kasravi, 2009; Luo & Jamieson-Drake, 2014; Salisbury et al., 2011). Model 5 tested the main effects of being non-White on the outcome variable in addition to the significant factors included in Model 4. In that model, the main effect of identifying as non-White was not significant. Since descriptive statistics confirmed underrepresentation of non-White students among students who confirmed participation in study abroad, the disproportionality could be explained by the interactions of non-White with the other factors. In the analysis with Model 6, the main effect of “Non-White” in the presence of its interactions with other factors was statistically significant, which warranted the analysis of the interaction effects tested in that model. For the reasons explained in the methods chapter, only interactions with “non-White” were analyzed. The analysis confirmed that some predictive factors varied for non-White students. $\text{Exp}(\beta)$ coefficients for interactions cannot be simply added or subtracted from the simple effect coefficients of each factor included in the analysis (Crawford et al., 2014). Thus, the explanations of results presented in this study only indicate the direction and significance of the interactions. In sum, indicating “finance as an obstacle” and being female showed different relationship direction and statistical significance between White and non-White students.

The findings of this study suggest that efforts to close the enrollment gap between White and non-White students must account for how each predictor varies by race and ethnicity. Future analyses including larger samples will be necessary to determine how

the factors vary for each racial and ethnic group since this study grouped all non-White students into a single category.

Limitations and Recommendations for Future Studies

This study was based on data collected from a questionnaire that started being used at the UO for the first time in Fall term 2019, to collect information on students applying to study abroad programs scheduled from summer 2020 to spring 2021. Applications for summer 2020 were originally due on March 15, 2020 and applications for the other terms due on April 15, 2020. The UO started messaging students about the impacts of COVID-19 on January 31, 2020. On March 11, 2020, the UO announced that all non-essential travel would be suspended and on March 14 all students currently abroad were asked to make plans to return home. All spring 2020 study abroad programs were cancelled and original application deadlines for summer 2020 were postponed. When the data for this study became available on April 15, 121 students who had been offered acceptance had not confirmed enrollment, 144 applications were still under review, and 213 applications had been left incomplete. According to GEO, confirmed applications by early April, 2020 were down by approximately 4% in comparison with the same period in 2019. The COVID-19 pandemic is expected to impact study abroad applications and students in ways that will be only fully explained in future studies. Nevertheless, the number of complete applications for which a decision on enrollment had been made by March 21 was large enough to allow this study to proceed.

Initially, I planned to use Exploratory Factor Analysis (EFA) to reduce the independent variables into three dimensions representing social, personal, and institutional factors and then run binary logistic regressions using the dimensions scores.

For the reason explained above, this study included a smaller than expected sample. Additionally, it included a large number of dichotomous covariates that did not yield useful EFA results. Removing highly correlated variables such as paying for college with Veteran's Administration benefits and being a veteran, did not remove the error. Removing variables with low factor loadings eventually produced a significant EFA model, but the resulting factors did not align with the theoretical model nor was it a good fit for the logistic regression analysis.

This non-experimental study does not allow the establishment of causal relationships, limiting the interpretation of findings to confirming the existence of a relationship between the statistically significant predictors and the outcome variable. The study was conducted at a single university, which has a relatively small percentage of non-White students participating in study abroad. This study did not utilize random sampling, which limits the generalizability of its findings. Most racial and ethnic groups were too small and analysis of a full interactive model separating all race and ethnicity categories was not possible. With data from multiple years, future research may be able to test the interaction of the predictors with all race and ethnicity groups.

As with any self-administered questionnaire, it is possible that some participants lacked the details needed to fully understand the questions. The study abroad application background questionnaire, from which data on most measures included in this study were collected, is being used for the time and has not yet been subject to a rigorous review and testing.

Although included in the conceptual framework, program characteristics were not used as a variable to investigate how personal, social, and institutional factors relate

to study abroad participation. The inclusion of program characteristics and the organization of independent variables using push-pull strategy may prove beneficial in future studies on this topic. Future studies can utilize larger samples or add variables related to program characteristics to the analysis. The addition of program characteristics may yield better results related to the personal and institutional factors.

Validity and reliability. Reliability refers to how dependable the measurements of any given instrument are (Babbie, 2013). In this study, I used data collected by GEO from students during the application process. Some measures were self-reported by students and more subject to error such as demographic characteristics, socio-economic status, and personal motivations for studying abroad. Some students may have answered those questions in a way that could make them more susceptible for being accepted into a competitive program or for increasing their chances of receiving certain scholarships. To minimize reliability-related problems, I reviewed the Microsoft Excel dataset prior to importing it for analysis in SPSS. In this process, 406 cases in which students who started an application in GEO's online application system opened the SAB questionnaire but did not provide any answers were removed.

Threats to external validity “arise when experimenters draw incorrect inferences from the sample data to other persons, other settings, and past and future situations” (Creswell, 2014, p.176). Results from this study cannot be generalized to all US college students but can provide insights to college populations that are similar to that at the University of Oregon. Although the sample for this study was relatively large ($N=1016$), statistical conclusions for research question 2 must be taken with caution. Low numbers

for all non-White groups prevented me from testing how the significant predictors vary when interacted with belonging to each of the race and ethnic groups.

Implications for Practice

Despite the limitations discussed above, the findings of this study provide useful information for institutions interested in increasing participation in study abroad, especially for non-White students. This study proved that the use of a short background questionnaire, consisting of mostly “Yes-No” answers can help study abroad professionals predict students who will not confirm participation in study abroad programs at a significant rate (36.1% in Model 1, 34.7% in Model 5, and 53.8% in Model 6). Although the model interacting the predictors with “non-White” resulted in stronger predictive power for identifying non-participants, future research is needed to confirm the results of this study and the usefulness of the interaction findings given the limitations described above.

It is possible that the results of this study are influenced by the significant number of students who did not reach a final decision regarding studying abroad given the impact of COVID-19. It is also possible that differences exist between late- and early-deciders in regard to study abroad participation. A replication of this analysis including the final sample of applicants for the 2020-2021 study abroad programs may prove if significant differences exist between early- and late-deciders regarding study abroad participation.

APPENDIX A
STUDY ABROAD BACKGROUND QUESTIONNAIRE

1. How did you learn about the study abroad program to which you are applying?
(select all that apply)

- A. Study abroad advisor
- B. Major/academic advisor
- C. Study abroad website
- D. Email from GEO
- E. Faculty
- F. Classroom presentation
- G. Family member
- H. Friends
- I. Study abroad fair
- J. GEO print materials (poster, handouts, etc.)
- K. Info session/event on campus
- L. Information table on campus
- M. Social Media

2. Which factors influenced your decision to choose your study abroad program? (select all that apply)

- A. Courses satisfy major/academic requirements
- B. Program cost
- C. Faculty leader
- D. Program location
- E. Program timing/duration
- F. Internship/volunteer work options with program
- G. Family
- H. Friends
- I. Language of study
- J. Exploring my own heritage/cultural roots
- K. Living with a host family
- L. Prestige of host university/study center
- M. High level of cultural immersion

3. What is your primary motivation for going abroad? (select one)

- A. To fulfill academic requirements
- B. To improve foreign language proficiency
- C. Personal growth
- D. To make myself more marketable to future employers
- E. To improve intercultural communication skills
- F. To learn about my own cultural roots
- G. To make friends from other countries

4. I face the following obstacles in my decision to study abroad: (select all that apply)

- A. Study abroad courses may not fit my graduation plans
- B. Lack of foreign language knowledge
- C. Lack of family support
- D. Family obligations
- E. Work/internship obligations
- F. Extracurricular obligations
- G. FOMO - fear of missing out
- H. Cultural shock
- I. Fear of racism in other countries
- J. Personal safety in other countries
- K. Impact on GPA
- L. Visa requirements
- M. Current housing commitments

5. How do you currently pay for school? (select all that apply)

- A. Scholarships
- B. Pell Grant
- C. Financial aid (all other federal and state grants and loans besides the Pell Grant)
- D. Personal funds
- E. VA Benefits

6. What type of funding do you intend to use to pay for your study abroad program?

(select all that apply)

- A. Scholarships
- B. Pell Grant
- C. Financial aid (all other federal and state grants and loans besides the Pell Grant)
- D. Personal funds
- E. Family support
- F. VA Benefits

7. Agree or Disagree: There are sources of funding available to support your participation in the study abroad program to which you are applying.

Strongly agree

Agree

Neither agree or disagree

Disagree

Strongly disagree

8. In addition to your studies, what other responsibilities or activities are you engaged with? (select all that apply)

- A. Student government
- B. Fraternity/Sorority
- C. Student clubs
- D. Family obligations
- E. Faith-based activities

- F. Service/Volunteering
- G. Work/internship
- H. ROTC
- I. Athletics
- J. Other
- K. None

9. Diversity and Inclusion: GEO is committed to supporting and making programs accessible to underrepresented students. Do you identify with any of the following groups? (select all that apply)

- A. First-generation college student
- B. Fraternity/sorority member
- C. LGBTQIA+
- D. Non-traditional student
- E. Student athlete
- F. Student of color
- G. Veteran

10. Has anyone in your family previously studied abroad?

- A. Yes
- B. No
- C. Don't know

11. Have any of your friends previously studied abroad?

- A. Yes
- B. No
- C. Don't know

12. Are any of your friends currently planning to participate in a study abroad program?

- A. Yes
- B. No
- C. Don't know

13. Have you previously traveled to another country?

- A. Yes
- B. No

14. Agree or Disagree: My university encourages international experiences such as study abroad for students like me.

Strongly agree

Agree

Neither agree or disagree

Disagree

Strongly disagree

APPENDIX B
LIST OF INDEPENDENT VARIABLES MAPPED TO THEIR RESPECTIVE DATA SOURCES

Personal factors:

Variable	Variable Description	Source	Source item
Cultural heritage/roots	Motivation to explore personal cultural heritage/roots is a positive influence at the time of application	Background questionnaire	Q2, line J
Cultural heritage/roots	Primary motivation for studying abroad is to learn about cultural roots	Background questionnaire	Q3, line F
Cultural immersion	Interest for programs with high level of cultural immersion	Background questionnaire	Q2, line M
Personal growth	Primary motivation for studying abroad is personal growth	Background questionnaire	Q3, line C
International friendships	Primary motivation for studying abroad is making friends abroad	Background questionnaire	Q3, Line G
Language knowledge	Not knowing the language of the host country is an obstacle at time of application	Background questionnaire	Q4, line C
FOMO	Fear of missing out (FOMO) is an obstacle at time of application	Background questionnaire	Q4, line H
Cultural shock	Fear of cultural shock is an obstacle at time of application	Background questionnaire	Q4, line I
Personal Safety - Racism	Fear of racism abroad is an obstacle at time of application	Background questionnaire	Q4, line J
Personal Safety - other	Fear for personal safety abroad is an obstacle at time of application	Background questionnaire	Q4, line K
Travel abroad	Previous experience travelling to another country	Background questionnaire	Q13

Note: Q = question

Social Factors:

Variable	Variable Description	Source	Source item
Family influence	Family is a positive influence at the time of application	Background questionnaire	Q2, line G
Family member in study abroad	Has a family member who studied abroad	Background questionnaire	Q10
Family support	Lack of family support is an obstacle at time of application	Background questionnaire	Q4, line E
Friends influence	Friends are a positive influence at the time of application	Background questionnaire	Q2, line H

Friends' in study abroad	Has a friend who is applying to study abroad	Background questionnaire	Q11
Future employment	Primary motivation for studying abroad is becoming more marketable to future employers	Background questionnaire	Q3, line D
Student government	Engagement in student government is an obstacle to studying abroad at the time of application	Background questionnaire	Q8, line A
Family obligations	Family obligations are an obstacle to studying abroad at the time of application	Background questionnaire	Q8, line d
Faith-based activities	Engagement in faith-based activities are an obstacle to studying abroad at the time of application	Background questionnaire	Q8, line E
SES – paying for college	Sources of funding for college are not exclusively personal/family funds	Background questionnaire	Q5 (with or without line D)
SES – paying for study abroad	Sources of funding for study abroad are not exclusively personal/family funds	Background questionnaire	Q6 (with or without line D)
SES – paying for study abroad (optional)	Application to UO-sponsored scholarship or grant	GEO scholarship application	Scholarship tag on GEO profile
SES - barriers	Financing study abroad is an obstacle to studying abroad at the time of application	Background questionnaire	Q4, line A

Note: Q = question

Institutional Factors:

Variable	Variable Description	Source	Source item
Prestige	Prestige of host institution is a motivation at the time of application	Background questionnaire	Q2, line L field
Academic requirements	Primary motivation for studying abroad is satisfying an academic requirement	Background questionnaire	Q3, line A
Impact on GPA	Impact on GPA is an obstacle at time of application	Background questionnaire	Q4, line L
Scholarships	Availability of scholarships available to the chooses study abroad program	Background questionnaire	Q7
Support for study abroad	University encourages participation in study abroad	Background questionnaire	Q14

Timing	Graduation plans do not allow participation in study abroad	Background questionnaire	Q4, line B
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Note: Q = question

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