



Who Studies Abroad? Understanding the Impact of Intent on Participation

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Abstract

The Integrated Student Choice Model and Theory of Planned Behavior are used to frame an analysis of longitudinal student data. We utilize generalized structural equation modeling to evaluate our framework and to examine the impact of select student characteristics and college experiences on actual involvement in study abroad, giving particular attention to the role of intentions. Study results generally confirm prior findings and provide general support to our framework underscoring the importance of considering the temporal aspect of decisions to study abroad and the strength of intentions when estimating its effect on participation. Findings highlight student attributes associated with intentions that differ in strength and patterns of institutional characteristics and student attitudes, subjective norms, behavioral control beliefs, intentions, and campus involvement that shape individuals' decisions to study abroad. Our findings provide insights into why prior study results regarding antecedents of intentions and the impact of intentions on study abroad participation may vary. We offer insights into how to advise and market programs to individuals who enter with different levels of motivation to study abroad.

Keywords Study abroad intent · Study abroad participation · Integrated Student Choice Model · Theory of Planned Behavior · Generalized structural equation modeling (GSEM)

Introduction

Contemporary social events and technological advances heighten personal interactions around the world and underscore the need for individuals who are prepared to participate in multicultural environments (e.g., Fischer 2019; Lincoln Commission 2005; Succeeding Globally through International Education and Engagement 2012). Domestic and international programming by U.S. colleges and universities both contribute to students' multicultural learning (e.g., Bennett 2008; Middlehurst 2013; Soria and Troisi 2014); however, there are advantages to study abroad that lead government agencies and foundations to invest in these initiatives (e.g., 100,000 Strong Foundation). National reports

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and legislative efforts emphasize the importance of study abroad in preparing graduates who understand and appreciate cultural perspectives different from their own, are able to reflect critically on their own culture (Horn et al. 2007), and can communicate and engage with individuals in culturally diverse groups (Stroud 2010), knowledge and skills generally referred to as intercultural competence (Deardorff 2006).

With a few exceptions, research demonstrates study abroad facilitates the development of different aspects of intercultural competence (e.g., Engberg 2013; Linder and McGaha 2013; NAFSA 2003; Vande Berg et al. 2012). Perhaps due to the perceived benefits, students exhibit awareness of such opportunities upon college entry and express intentions to take part. Regrettably, despite their apparent awareness and interest, the number of American college students who actually participate is small (e.g., American Council on Education 2008; Fischer 2019; Helms et al. 2017). Open Doors¹ 2019 reported that less than 2% of all U.S. undergraduates (300,056 students) studied abroad for credit during 2017–18 (IIE 2019).

The persistent gap between the number of students who intend to participate and actually do so (e.g., American Council on Education 2008; Heisel and Stableski 2009; Pope et al. 2014) troubles international practitioners who strive to improve programming and increase student engagement (Helms et al. 2017; Niehaus and Inkelas 2016). Many worry that current global health and fiscal conditions attributable to COVID-19 will widen the gap further in the coming year (IIE 2020). Lingering health concerns and a global recession, even after the crisis abates, may mean new institutional efforts will be required to motivate students to engage in overseas experiences.

Contemporary events highlight a need for inquiries that refine our understanding of intentions as mechanisms in students' decision-making and offer insights that can potentially inform practical efforts to increase study abroad engagement (e.g., Booker 2001; Kim and Lawrence 2018; Peterson 2003). In the present study, we utilize the Integrated Student Choice Model (Salisbury 2011; Salisbury et al. 2009, 2010) and the Theory of Planned Behavior (Ajzen 2001) to frame an analysis of longitudinal student data from a single institution and examine the impact of select college experiences and student characteristics on actual involvement in study abroad, giving particular attention to the role of intentions.

Literature Review

The burgeoning study abroad literature profiles students who do and do not intend or do and do not participate. Myriad factors are associated with either or both intentions and participation including: campus characteristics such as mission, normative climate and instrumental support for study abroad (BaileyShea 2009; Coldwell 2013; DiBasio and Mello 2004; Hoffa 2007; Lincoln Commission 2005; Salisbury et al. 2010; Schnusenberget al. 2012); student backgrounds with respect to family income and parental education, gender, race, involvement in volunteer and community service prior to college admission, academic accomplishments at entrance, travel, and interactions with people who are racially and ethnically different (Dessoff 2006; Doyle et al. 2010; Lörz et al. 2015; Fornerino

¹ Open Doors is an annual report released by the U.S. Department of State's Bureau of Educational and Cultural Affairs and the Institute of International Education (IIE) that provides comprehensive information on international students studying at higher education institutions in the U.S., and U.S. students studying abroad for academic credit.

et al. 2011; IIE 2016, 2018; McClure et al. 2010; Niehaus and Inkelas 2016; Presley et al. 2010; Salisbury 2011; Salisbury et al. 2009; Sanchez et al. 2006; Simon and Ainsworth 2012; Weenink 2014); attitudes and beliefs related to study abroad and on-campus activities, for example ethnocentrism, interest in cultural differences, program location, duration, expense, service emphasis, credit transfer options, and opportunity costs (Brux and Fry 2010; DuFon and Churchill 2006; de Jong et al. 2010; Goldstein and Kim 2006; Loh et al. 2011; Patterson 2006; Relyea et al. 2008; Stroud 2015; Van Der Meid 2003); and involvement in campus cocurricular and curricular activities such as sports, theater, student government, Greek life, learning communities, interactions with faculty and peers, academic major, academic performance, and language learning (BaileyShea 2009; DiBasio and Mello 2004; Norris and Steinberg 2008; Rust et al. 2007; Salisbury et al. 2009; Stallman et al. 2010; Stroud 2010; Whatley 2018).

Based primarily on inquiries in other areas (e.g., marketing), study abroad scholars assume intentions predict behavior. Few higher education researchers have empirically investigated if and how intent to study abroad affects actual engagement (e.g., Booker 2001; Kasravi 2009; Peterson 2003; Twombly et al. 2012). BaileyShea (2009) conducted secondary analyses of the multi-campus Cooperative Institutional Research Program Freshman Survey (CIRP) and College Senior Survey data. Her analytical model integrates elements of Astin's Involvement Theory (1993) and Fishbein and Ajzen's Theory of Reasoned Action (2011). An underlying premise is that students' background and attitudinal characteristics, along with college environments, shape their campus engagements. Greater involvement in select curricular and cocurricular activities increases the odds an individual will study abroad. Within BaileyShea's multi-institutional sample of 10,716 students, the odds of participation were influenced by intentions at entry, background characteristics (gender, parents' education, race), attitudes and beliefs (importance of diversity), curricular (e.g., GPA, major) and cocurricular involvement (participation in fraternity life, student government and internships), and institutional features (private, perceived faculty support for students, demographic composition of student body). Intention was a weak predictor and within race and gender groups, intentions were not statistically significant. Pre-college characteristics such as socioeconomic class predisposed White students to engage in study abroad whereas college experiences affected participation among students from underrepresented groups. The results for males and females were similar to those for White students.

Lingo (2019), Luo and Jamieson-Drake (2015), and Stroud (2015) searched for factors that increased and decreased the likelihood of participation among students with strong and weak intentions. Lingo analyzed data gathered for the multi-institution Wabash National Study. His analysis is grounded on Salisbury et al. (2009)'s Integrated Student Choice Model that hypothesizes intentions and study abroad involvement are guided by students' social, human, cultural and financial capital at entrance and acquired during college. In his sample of 3824 students, Lingo found intention was the "single greatest predictor of participation" (p. 1164). After controlling for intentions and pre-enrollment social capital (parental education), select background characteristics (gender, pre-college academic performance) and college experiences (attending a liberal arts university, first year GPA, diversity coursework, out of class interactions with faculty, engagement in cocurricular activities) increased the odds of participation by both those with weak and strong intentions. The Integrated Student Choice Model also framed the single institution study conducted by Luo and Jamieson-Drake (2015). Their regression analyses of CIRP and Senior Survey data collected from 1833 students indicated individuals with stronger intentions were more likely to engage in study abroad than those with weaker intentions. However, involvement in campus activities such as theater and student government and off campus

study in the U.S. diminished the odds of participation by students expressing strong intentions. Among students with weak intentions, parental income and participation in political and sports clubs on campus reduced the likelihood they would study abroad.

Stroud (2015) completed a single campus mixed method investigation of only students who expressed study abroad interest. Like BaileyShea, she incorporates elements of Astin's Involvement Theory and the Theory of Reasoned Action to create her conceptual framework. She conducted logistic regression analyses of data gathered from students who signaled an interest by completing an online Study Abroad Profile at college entry. The chances of participation among these students were positively affected by a background variable (traveling abroad 3 or more times) and academic involvement (college GPA, foreign language study, honors college membership). The odds were reduced by attitudes (costs of participation, concerns about graduating on time) and weak intentions. Focus group discussions conducted with students who intended to but did not participate highlighted factors that contributed to their decisions. Missing out on campus activities, not graduating on time, lack of specific course equivalents abroad, poor advising and unsupportive academic departments, as well as concerns about the cost dissuaded them from engaging in study abroad.

The literature linking intention and participation highlights an array of factors that contribute to study abroad involvement. It also identifies conceptualizations on which to build and refine our understanding of intentions as mechanisms in participation decisions. However, two inherent theoretical and methodological issues may foster inconsistent study results regarding the impact of intention on engagement. Both the Integrated Student Choice Model central to the Lingo and Luo and Jamieson-Drake studies and the Theory of Reasoned Behavior utilized by BaileyShea and Stroud posit intentions at entry shape students' curricular and cocurricular experiences and, in turn, these activities affect participation in study abroad (discussed further in the next section). Salisbury et al. (2009) presume students increase their capital through educational involvement and as a result, their intentions to study abroad can change. Ajzen and Fishbein (1980) and Ajzen (2001, 2002), too, assume intentions may be altered by events between the formation of an initial intention and the decision to engage in a behavior. Nonetheless, three of the studies control for intent at college entrance and examine student activities to see if certain participation patterns over time increase the chances of study abroad participation. BaileyShea simultaneously regressed participation against all independent variables. Furthermore, the operationalization of student involvement is problematic in the Stroud, Luo and Jamieson-Drake, and BaileyShea inquiries because the variables capture involvement over four years and it is not clear when students engaged in the activities—before or after studying abroad.

A second issue is the failure to account for intention strength. The Theory of Reasoned Behavior assumes intention is a motivational construct and strength indicates the amount of effort an individual will expend to reach a goal; as intention strength increases, the motivation to behave does as well. Extant studies collapse item response categories to create a dichotomous variable thereby masking possible differences in effect size due to intention strength. In the BaileyShea study, a four-response scale is consolidated to form two categories: intent (some and very good chance of studying abroad) and no intent (no chance or very little chance). Luo and Jamieson-Drake condense the same scaled items into two categories, strong intent (very good chance) and weak intent (some, little or no chance). Lingo separates students into two groups: those who said they had a plan to study abroad and those who were undecided or had no plan. Stroud's survey had three response categories (some, little, and very good chance of studying abroad) that were dummied using very good chance as the reference group.

The present study extends previous investigations linking study abroad intentions and participation by (1) accounting for variations in intention strength and (2) attending to the temporal associations between intentions and both first year college experiences and participation in study abroad. A conceptual framework is proposed that captures and orders the influences on study abroad participation and identifies pathways through which these factors can promote and impede study abroad. A close examination of intention strength and how variations shape students' involvement in curricular and cocurricular activities offers insights into how to advise and market programs to individuals who enter with different levels of study abroad motivation.

Conceptualizing Decisions to Study Abroad

Researchers have employed an array of theoretical frames to represent the processes through which students' form intentions and make study abroad participation decisions: risk propensity (Relyea et al. 2008), individual growth (Pope et al. 2014), expectancy (e.g., Goldstein and Kim 2006; Vernon et al. 2017), intercultural attitudes (Kim and Goldstein 2005), social learning (McLeod and Wainwright 2009), cultural capital (Lingo 2019), personality traits (Li et al. 2013), involvement and social integration (BaileyShea 2009; Rust et al. 2007). While no one theoretical approach is generally accepted, Salisbury et al.'s Integrated Student Choice Model and Ajzen and Fishbein's Theory of Reasoned Action and Theory of Planned Behavior are prominent within the study abroad literature. These frameworks differ somewhat in assumptions about individual agency but share common ideas about phases in the formation of intentions and participation decisions and factors that shape intentions.

Integrated Student Choice Model

The Integrated Student Choice Model (ISC) assumes students' pre-college socioeconomic status, cultural and social capital guide their intentions to study abroad and ultimately, their participation (Salisbury 2011; Salisbury et al. 2009, 2010). Drawing on conceptions of the college choice process (e.g., Hossler and Gallagher 1987; Paulsen and St. John 2002; Perna 2000, 2006), ISC suggests that students' decisions are (a) situated in social contexts, including a student's habitus shaped primarily by social class, school and home environments, and (b) influenced by the nature and amount of their social, cultural, human and financial capital. Habitus refers to the "enduring beliefs, attitudes, aspirations, perceptions and values...that frame and constrain (students') choices" (Salisbury et al. 2009, p. 123). Campus setting is modelled as a key context that can enlarge a student's habitus by providing opportunities to expand their social, cultural and human capital.

Social capital acquired through participation in different social networks and structures represents students' access to resources, support and information. Students' cultural capital signifies cultural knowledge, values and beliefs attained largely from formal school and parental social class. Human capital includes the academic preparation and accomplishments—resources, skills knowledge and talent students acquire through formal education that can be exchanged for monetary and non-monetary benefits. Financial capital indicates the monetary resources available to a student that flow primarily from social class membership.

The ISC model assumes the chances an individual intends to study abroad are affected by his or her habitus and the amount of social, cultural, financial and human capital accumulated prior to and during college (Salisbury et al. 2010). Students with well-educated parents, who come from higher income homes and attend better secondary schools have capital at entry that predisposes them to study abroad aspirations. However, decisions and life events at one time serve to limit or expand options at a later time in ways that affect intentions and behavior (Breen and Jonsson 2000; Salisbury et al. 2009). Consequently, students from lower socioeconomic class families who begin college with less capital and no intention to study abroad can, through coursework and social networking, accrue capital that leads to affirmative intentions.

As is the case with college choice, the ISC assumes study abroad decision-making proceeds through three stages. Individuals first develop an educational aspiration (predisposition to study abroad), then identify and evaluate the advantages and disadvantages of opportunities (identify programs and calculate opportunity costs), and finally decide which option to pursue (choose among options). Framed by students' habitus and capital, the formation of aspirations (intentions) and decisions to study abroad involves weighing the costs and benefits of options and choosing one that maximizes benefits (rational choice).

Theory of Planned Behavior

The Theory of Planned Behavior (TPB) hypothesizes that individuals' beliefs shape their intentions and intentions, in turn, motivate behavior (Ajzen 2001, p. 181). Intention denotes the amount of effort a person plans to exert and the subjective probability that an individual will perform a behavior. Therefore, TPB assumes individuals with stronger intentions are more likely to engage in a behavior (Ajzen 2001; Petzold and Peter 2015).

TPB posits that intentions are informed by three sets of beliefs: Attitudes toward a behavior, Subjective Norms, and Behavioral Control Beliefs. Attitudes are favorable or unfavorable opinions about an activity shaped by personal experiences. Attitudes may result from evaluative judgments about the costs and benefits of a behavior (e.g., study abroad leads to better job opportunities), affective judgments about the personal satisfactions to be derived (e.g., study abroad is personally satisfying), and favorable or unfavorable responses to aspects of an activity (e.g., I do not like to move outside my comfort zone). Subjective Norms are one's perceptions of the social expectations held by significant others (e.g., faculty, parents, peers) and felt pressure to comply (Ajzen and Fishbein 1980). Behavioral Control Belief indicates an individual's perception that he has the necessary knowledge, skills and resources to successfully perform an action. This construct, similar to Bandura's concept of self-efficacy (Ajzen 2001; Bandura 1997), accounts for individuals' beliefs that they have access to the resources and opportunities needed to be successful. TPB suggests that a student's intention to study abroad is stronger if she holds favorable opinions about an activity, perceives her parents think that she should participate, and she highly values her parents' expectation and thinks she has the skills and resources required to be successful.

As noted previously, TPB assumes intentions evolve over time and can change as a result of new experiences. Experiences may trigger changes in attitudes toward a behavior, the expectations of social referents and/or behavioral control beliefs which, in turn, can lead to changes in intentions (Ajzen 1985, 2001). Consequently, TPB presumes that along with intention strength, the lapsed time between the formation of an intention and the decision to participate in an activity is critical (Zauberman and Lynch 2005). Experiences

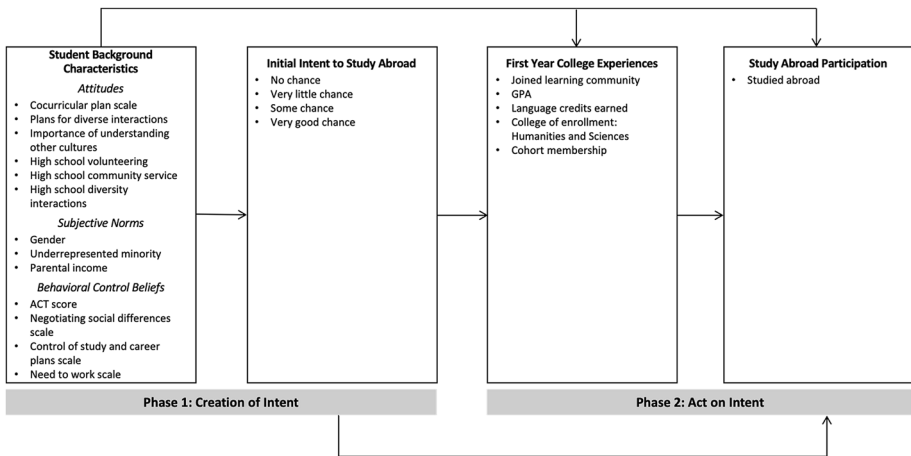


Fig. 1 Proposed framework

during the first year of college (e.g., taking courses, interactions with diverse individuals, financial circumstances) can shift the weigh and valence of factors entering into the decision-making process, altering intentions held at the time of admission and attenuating the study abroad intention-participation relationship.

Study Conceptual Framework and Research Questions

By incorporating elements of ISC and TPB, the conceptual framework guiding the present inquiry seeks to clarify our understanding of the complex patterns of students’ background characteristics, intentions, and collegiate activities that combine with institutional factors and influence the likelihood of their study abroad participation (SAP). The framework assumes initial intentions to study abroad (IISA), assessed at the beginning of students’ first year of enrollment, are shaped by their pre-enrollment characteristics (Attitudes, Subjective Norms, and Behavioral Control Beliefs) that result from their home, school and social class experiences. Attitudes are positive and negative beliefs that individuals associate with SAP, their social/cultural capital acquired through participation in social networks and structures. Subjective Norms reflect the perceived social pressures that important reference groups exert in the form of SAP approval or disapproval. Behavioral Control Beliefs encompasses financial and human capital that may expand or constrain an individual’s study abroad options, e.g., financial need, academic performance (see Fig. 1).

IISA denotes the amount of effort a student plans to exert to accomplish the goal of studying abroad and the framework posits that IISA strength is key to estimating the likelihood of SAP. A key assumption is that variations in students’ background characteristics (Attitudes, Subjective Norms and Behavioral Control Beliefs) result in different levels of motivation to study abroad (IISA) and that the impact on these antecedent variables on students’ early engagements in curricular and cocurricular activities (First Year College Experiences) as well as SAP is mediated by IISA. However, in light of prior research (Lingo 2019; Luo and Jamison-Drake 2015), the framework accounts for the possibility

that certain Attitudes, Subjective Norms and Behavior Control Beliefs directly influence students' First Year College Experiences and SAP.

The conceptualization of SAP further assumes that decisions about study abroad are situated in campus contexts. Through their First Year College Experiences, students become familiar with institutional characteristics such as the normative climate regarding international activities and opportunities and resources available for study abroad. Certain types of campus involvement can open or restrict access to SAP and facilitate students' acquisition of capital. For example, program of study requirements (e.g., course sequencing in STEM fields, first year language requirements) may constrain SAP whereas other learning communities may draw students into social networks where interactions with faculty and peers and subjective norms may encourage SAP. Because First Year Experiences occur in closer proximity to IISA, the framework proposes the association of IISA with these activities will be greater than with SAP. Furthermore, the strength of IISA will influence the types of experiences in which students participate. For example, individuals with stronger IISA may be more likely to enroll in language classes or global study courses.

The research questions that follow from this conceptualization and guide the present inquiry are:

1. Do Student Background Characteristics, Intentions and First Year College Experiences directly influence Study Abroad Participation?
2. Do Student Background Characteristics shape Intentions and First Year College Experiences?
3. Do Intentions directly impact First Year College Experiences?
4. What are the direct, indirect, and combined effects of Students' Background Characteristics, Intentions and First Year College Experiences on Study Abroad Participation?

Data and Method

The Campus Context

The study campus is a Research I university in the Midwest recognized for its efforts to diversify and promote social justice in all aspects of campus life. The university is known for its international initiatives as reflected in the large number of students studying abroad, a strong presence of international students on-campus, the number of academic programs focused on world regions and global themes, and its wide-ranging international research collaborations. With the dramatic growth of its international activities, during the study time frame (2008–2012) a series of assessments were conducted that centered on the international dimensions of the university. The reports led in 2010 to the creation of a web portal for all students interested in study abroad, a dramatic increase in study abroad financial support for lower income students, and diversification of program locations and types—in particular high-quality less expensive short-term options. Consistent with the university emphasis on promoting social justice, funding opportunities were made available to faculty who offered study abroad programs with this focus and a service component. Furthermore, academic units such as engineering and arts and design initiated and implemented efforts to embed international experiences into the curriculum through graduation requirements or formal credentials (e.g., minors). In brief, the campus context at the time of this study

reflects a period during which the university was expanding opportunities and lowering barriers to student participation.

Sample

The study utilizes data gathered from three cohorts of students: those who entered the university directly from high school in Fall 2008, 2009, or 2010. The cohorts were selected based upon input from study abroad administrative personnel at the university who noted improvements in the data collection process implemented in 2010 increased the accuracy of subsequent Open Doors reporting.

The data are drawn from multiple sources, specifically: (1) institutional records documenting students' social and economic background characteristics and academic pathways from entry to graduation, (2) CIRP Freshman Survey data collected at college entry, and (3) Open Doors data tracking study abroad participants. Using student identification numbers, a longitudinal data set was created that follows individual students from entrance to graduation and links CIRP data to participation in study abroad.² Most students go abroad during their sophomore or junior years due to the study institution's basic program eligibility requirements, a pattern that closely resembles national trends reported in Open Doors (IIE 2019). Hence, we include in our sample those students who studied abroad for academic credit in their 2nd or 3rd year of college during the fall, winter or summer semesters of academic years 2010–11, 2011–12, and 2012–13.³ The sample was further limited to domestic students with no prior credit-bearing study abroad experience. The selection criteria resulted in an effective sample size of 9737 students enrolled in humanities and sciences, engineering, music, nursing, art and design, and kinesiology.

Measures

The theoretical model that we propose (Fig. 1) assumes that Study Abroad Participation (SAP) results from the combined and independent effects of five sets of variables: Attitudes, Subjective Norms, Behavioral Control Beliefs, Initial Intentions to Study Abroad (IISA), and First Year College Experiences. Student background, cocurricular and

² Institutional records were available for 18,299 new freshman students who entered college directly from high school in the Fall 2008, 2009, or 2010. Nevertheless, only 57% of the records were ultimately used given any student who failed to complete the CIRP survey could not be used in the analysis. We examined statistically significant differences between the two group means of the dropped and study samples as determined by t-tests. We observed that our study sample had a lower percentage of men (dropped sample: 53%, study sample: 48%), slightly higher ACT scores (dropped sample: 28.6, study sample: 29.0), and a lower percentage of low-income students (dropped sample: 17%, our sample: 14%). The two samples did not significantly differ in their proportions of underrepresented minorities and study abroad participants.

³ In addition to the study institution's basic program eligibility requirements, we considered students who studied abroad in their 2nd or 3rd academic year of study for the following reasons. First, the study institution is an elite research university with more than three-quarters of undergraduate students completing their degree within four years. In the study sample, 85% of the students completed their degree within four years. As a result, most students engaged in study abroad prior to their fourth year. Second, this study was part of a larger research project that examined the effects of study abroad on short-term and long-term outcomes (e.g., declaring a major or minor in international studies, participation in another international experience following initial study abroad). In order to examine these outcomes, it was necessary to focus on 2nd and 3rd year study abroad participants to effectively capture change in behavior before and after SAP. Based on these rationales, individuals who studied abroad during 1st or 4th year were dropped from the sample.

curricular involvement and study abroad data were abstracted from student records, transcripts, and Open Doors reports submitted annually to the Institute of International Education (IIE). Binary and scaled variables representing intentions, attitudes, norms and behavioral control beliefs were generated from students' responses to the CIRP Survey completed prior to initial enrollment. The single item and scale measures are presented in Appendix 1: Variable Definitions.

The *Attitude* variables selected for inclusion are ones that previous studies found are associated with IISA and/or SAP: students' predispositions regarding involvement in volunteer and community service activities, social engagement with people from a racial/ethnic group different from their own, forms of cocurricular engagement, and interest in expanding one's cultural understanding (e.g., BailyShea 2009; Kim and Goldstein 2005; Luo and Jamieson-Drake 2015; Stroud 2010). These attitudes are represented by three binary variables generated from CIRP survey items indicating self-reported involvement in volunteer work (high school volunteering), socializing with another racial/ethnic group (high school diversity interactions), and performing community service during high school (high school community service). The original items with response scales frequently, occasionally, and not at all were converted to binary variables (0 = not at all, occasionally; 1 = frequently) to capture high involvement in these activities. One binary variable was created from a CIRP item that asked students to indicate how important they think it is to understand other countries and cultures; the original response scale (not important, somewhat important, very important, essential) was converted to a binary scale (0 = not important to somewhat important; 1 = very important to essential) (importance of understanding other cultures). We created one additional binary variable (0 = no chance, very little chance, some chance; 1 = very good chance) to indicate students' self-reported inclinations to socialize with different racial/ethnic groups (plans for diverse interactions). A fifth variable, cocurricular plans scale, is a factor that reflects students' attraction to cocurricular college activities previous inquiries found influence study abroad intent and participation (e.g., Rust et al. 2007; Salisbury et al. 2009). The scale indicates the degree to which a student anticipates he or she will engage in student government, clubs, volunteering or community service (1 = no chance; 2 = very little chance; 3 = some chance; 4 = very good chance).

Variables subsumed within *Subjective Norms* denote reference groups that can exert pressure toward and away from SAP. In keeping with previous studies (e.g., Brux and Fry 2010; Burr 2005; Gore 2005; Salisbury et al. 2009, 2010; Walpole 2003), key reference groups include a student's economic class—proxied by family income, race and gender. Three binary income variables low-income (less than \$50,000), medium-income (\$50,000–\$100,000), and high-income (more than \$100,000) were generated with high-income used as the reference group. We combined racial and ethnic groups categorized as Hispanic/Latinos, African Americans, and American Indians/Alaskan Natives to create a binary variable for underrepresented minority status (0 = no; 1 = yes). We also included a binary variable representing gender (0 = women; 1 = men).

Behavioral Control Belief variables indicate students' self-assessed skills and knowledge, financial resources, as well as control over their programs of study and careers (e.g., Brux and Fry 2010; Carlson et al. 1990; Dessoff 2006; Goldstein and Kim 2006; Paus and Robinson 2008). Skills and knowledge are represented by (1) a student's ACT score, and (2) a scale, negotiating social differences, created from CIRP items that ask students to self-rate their ability (1 = lowest 10%; 2 = below average; 3 = average; 4 = above average; 5 = highest 10%) with respect to seeing and understanding other people's perspectives and beliefs, having one's own views challenged and negotiating interpersonal issues, and working effectively in multicultural settings. A scaled need to work variable was constructed

from CIRP items gauging students' perceptions (1=no chance; 2=very little chance; 3=some chance; 4=very good chance) of their need to work full-time and get a job while attending college. Students' sense of control over their programs of study and future careers is represented by a scaled variable (control of study and career plans) composed of two CIRP items indicating students' best guesses about whether they would change their major or career choice.

First Year College Experiences include students' collegial engagements between the formation of an initial intent and the semester when SAP decisions are typically made, activities that can affect the acquisition of social and cultural capital. The potential importance of early curricular and cocurricular experiences during this time was highlighted by Niehaus and Inkelas (2016). They found intentions changed between students' first and second years and called for greater attention to their campus engagement. IISA may indirectly affect SAP by motivating students to participate in First Year College Experiences with potential to open or close SAP opportunities. Learning communities at the study institution provide entering students with a chance to combine their academic and residential lives in a close-knit group of students and faculty from diverse backgrounds. Prior studies suggest these collegiate environments can draw lower socioeconomic students into new social networks with more positive attitudes toward and access to information about SAP (Lingo 2019; Luo and Jamieson-Drake 2015; Salisbury et al. 2009, 2010). Joined learning community indicates a student either did or did not participate in a residential learning community during his or her freshman year. At the time of the study, there were eight learning communities characterized by different themes and types of curricular and cocurricular activities. However, they all sought to create multicultural and multidisciplinary environments that emphasized diversity, social justice, rich dialogue, global perspectives, and community service. Prior research shows that high levels of language interest affect students' participation in study abroad and finds academic achievers are more likely to study abroad (e.g., Allen 2010; Kim and Goldstein 2005). Furthermore, study abroad application processes often require students to have earned language credits and a minimum GPA (e.g., Paus and Robinson 2008). Two variables, first year GPA and language credits earned, represent forms of human capital that students accrue and, depending on program eligibility requirements, open or constrain students' study abroad options.

Campus mission, norms and resources constitute a context in which students formulate their study abroad decisions (e.g., BaileyShea 2009; Coldwell 2013; Gore 2009; Lingo 2019; Salisbury et al. 2010). Brown (2002) and Gore (2009) highlight the traditional importance of study abroad within liberal arts colleges and how the subjective norms within students' college of enrollment (e.g., attitudes of faculty regarding the importance of study abroad) influence their intentions and participation. College of enrollment captures differences in program requirements in the humanities and sciences and other schools/colleges (i.e., engineering, music, nursing, art and design, kinesiology) that can structure students' decisions as well as attitudes of faculty and peers toward SAP. A student's cohort, year of initial enrollment, is used to proxy campus climate and changes in programming being undertaken during the time of this study (Luo and Jamieson-Drake 2015). As noted in the description of the campus, the most recent student cohort (2010) may have experienced more positive views of SAP and may have had access to a wider range of program options. Hence, we include three binary variables to represent cohort membership (i.e., cohort 2008, cohort 2009, cohort 2010).

Initial Intentions to Study Abroad (IISA) is derived from a single CIRP item that asks, "What is your best guess as to the chances you will participate in a study abroad program?" Students' perceived likelihood is indicated on a four-point scale. To account for intention

strength, we created four dummies to include three categories (i.e., very good chance, some chance, very little chance) with “no chance” as the reference group.

Study Abroad Participation (SAP) is a single binary variable, derived from Open Doors data, signifying that a student did or did not participate in any credit-bearing study abroad experience during their second or third year of enrollment (IIE 2019).

Analyses

Generalized structural equation modeling (GSEM), Stata 15, is used to evaluate our theoretical framework. Structural equation modeling (SEM) assesses the degree to which patterns of variance and covariance in the data support a model by estimating the magnitude and statistical significance of direct and indirect paths between measures of the theoretical constructs (Kline 2005). SEM is often used when testing mediation since an outcome variable of one equation can become the predictor variable in the next (e.g., Hayes 2009; James et al. 2006). As our model includes both measures that are continuous and dichotomous, we utilized Stata’s generalized structural equation modeling (GSEM) feature that allows for variables that do not fit the necessary conditions of traditional SEM (Stata 2013). We investigate mediation effects by testing the statistical significance of total, direct and indirect effects of measures (Karlson et al. 2010; Kohler et al. 2011) and identify paths through which pre-enrollment characteristics, intentions, and early collegiate experiences promote and impede study abroad participation.

The specific variables and paths included in the analysis are based on our proposed framework and the results of binary logistic and OLS multiple regression analyses we conducted to optimize model parsimony. To reduce the number of variables in the GSEM, we first regressed measures of Initial Intentions to Study Abroad (IISA) and First Year College Experiences against multiple Attitudes, Subjective Norms, Behavioral Control Beliefs variables. Then, using block entry logistic regression, we regressed variables against our outcome (Study Abroad Participation) (see Appendix 2: Regression Results). Only those antecedent variables exerting a significant effect on intentions and/or participation were included in the final GSEM model. The GSEM paths that we evaluated are represented in Appendix 3: Figs. 2, 3, 4.

Results

Descriptive Statistics

Table 1 summarizes descriptive statistics for all students (N=9737). It also presents the t-tests of mean differences for study abroad participants and non-participants. Students who studied abroad constitute 19% of the total sample (n=1806) which is slightly higher than national trends (16%) observed in the Open Doors data (IIE 2019).

About two thirds of participants report strong intentions to study abroad at the time of college entry compared to one third of the non-participants. Participants exhibit more positive predispositions toward engaging in college cocurricular activities, socializing with other racial/ethnic groups, and improving understanding of other cultures than non-participants. Consistent with Open Doors data, a higher percentage of the participants are women (69%) and are from high-income backgrounds (68%). Study abroad participants, compared to non-participants, rate themselves higher in their abilities to negotiate social differences,

more often report they are likely to change career or major choice and to perceive less need for financial resources to support college expenses. Comparisons of college experiences indicate that the average cumulative GPA and total language credits earned by the end of first year are significantly higher for the participant group. Over 80% of study abroad participants are enrolled in the humanities and sciences college.

Research Question 1: Do Student Background Characteristics, Intentions and First Year College Experiences Directly Influence Study Abroad Participation?

The direct effects of variables in the GSEM analysis are presented in Table 2. For binary outcomes (i.e., all intent levels, joined learning community, college of enrollment, cohort, study abroad participation), we report odds ratios [$Exp(b)$] which are interpreted as the change in the odds of the predicted outcome (e.g., study abroad participation) for one unit change in the independent variable. An odds ratio greater than one implies an increase while less than one indicates a decrease in the likelihood of the outcome with one unit increase in the independent variable. For continuous outcomes (i.e., GPA, language credits earned), we report unstandardized coefficients (b) which are interpreted as the amount of increase (or decrease) in the outcome variable with one unit increase in the independent variable.

The odds of participation are greatest for students reporting the strongest intentions (IISA: Very Good Chance, odds ratio=9.87). Student reports of weaker intentions (IISA: Some Chance, IISA: Very Little Chance) are also positively associated with SAP (odds ratio=4.12 and 2.13, respectively) but the magnitudes are not as large as IISA: Very Good Chance. Three First Year College Experiences (GPA, language credits earned, cohort), two Attitudes (cocurricular plans, high school volunteering), two Subjective Norms (male, medium-income), and three Behavioral Control Beliefs (ACT score, control of study and career plans, need to work) variables also directly affected SAP (see Table 2). However, none of these antecedents has as great an impact on SAP as intention. The odds of studying abroad for even the weakest intent (IISA: Very Little Chance) are stronger than the odds of any of the other variables entered in the model. Next to all three intention variables, first year GPA had the greatest effect (odds ratio=1.80).

Among the Attitude variables, compared to individuals who are least inclined, those exhibiting strong inclinations to join cocurricular activities in college are more likely to study abroad (odds ratio=1.19). In contrast, individuals reporting extensive engagement are 17% less likely to study abroad than those indicating low levels of volunteering during high school (odds ratio=0.83). Subjective Norms tended to be negative influences on SAP. For example, men and students from medium-income families are less likely to study abroad than women and students from high-income families (odds ratio=0.62 and 0.80, respectively). Of the Behavioral Control Beliefs, a strong feeling that one may change majors or careers increased the chances an individual would engage in an overseas experience (odds ratio=1.29). High ACT scores and needing to work during college significantly decreased the likelihood individuals would study abroad by 3% and 24%, respectively. Among the First Year College Experiences, student involvement in language learning significantly increased the chances they would study abroad (odds ratio=1.05). Entry year decreased the odds; compared to students in Cohort 2010, students in Cohorts 2008 and 2009 were 44% and 16% less likely to study abroad.

Table 1 Descriptive statistics by study abroad participation^a

	Participants		Non-participants		<i>t</i> -test	All students	
	Mean	SD	Mean	SD		Mean	SD
Study Abroad Participation (SAP)						0.19	0.39
Attitudes							
Cocurricular plans scale	3.11	0.51	2.94	0.56	***	2.97	0.56
Plan for diverse interactions	0.82	0.38	0.79	0.41	**	0.80	0.40
Importance of understanding other cultures	0.69	0.46	0.56	0.50	***	0.58	0.49
High school volunteering	0.43	0.50	0.41	0.49		0.42	0.49
High school diversity interactions	0.70	0.46	0.15	0.36		0.71	0.45
High school community service	0.15	0.36	0.71	0.45		0.15	0.36
Subjective norms							
Male	0.31	0.46	0.52	0.50	***	0.48	0.50
Underrepresented minority	0.10	0.30	0.10	0.30		0.10	0.30
Low-income	0.12	0.32	0.15	0.36	***	0.14	0.35
Medium-income	0.20	0.40	0.27	0.44	***	0.25	0.44
High-income	0.68	0.47	0.58	0.49	***	0.60	0.49
Behavioral control beliefs							
ACT score	29.13	2.81	29.08	3.08		29.09	3.04
Negotiating social differences scale	4.05	0.53	4.00	0.56	***	4.01	0.55
Control of study and career plans scale	2.92	0.75	2.67	0.76	***	2.72	0.77
Need to work scale	2.46	0.71	2.57	0.69	***	2.55	0.70
Initial Intent to Study Abroad							
No chance	0.01	0.09	0.07	0.25	***	0.06	0.23
Very little chance	0.07	0.25	0.23	0.42	***	0.20	0.40
Some chance	0.25	0.43	0.37	0.48	***	0.34	0.47
Very good chance	0.68	0.47	0.33	0.47	***	0.40	0.49
First Year College Experiences							
Joined learning community	0.18	0.39	0.12	0.32	***	0.13	0.34
GPA	3.37	0.40	3.21	0.53	***	3.24	0.51
Language credits earned	4.94	4.24	3.37	3.92	***	3.66	4.02
College of enrollment: humanities and sciences	0.81	0.39	0.68	0.47	***	0.70	0.46
Cohort 2008	0.24	0.43	0.32	0.47	***	0.30	0.46
Cohort 2009	0.27	0.44	0.27	0.45		0.27	0.45
Cohort 2010	0.49	0.50	0.41	0.49	***	0.42	0.49
Observations	1806 ^b		7931			9737	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Asterisks indicate there is a statistically significant difference between the two group means (study abroad participant, non-participant) as determined by *t*-tests

^aThis table presents the means and standard deviations by study abroad participation and the entire sample

^bOf the 1806 study abroad participants, 455 students participated during their 2nd year and 746 students participated during their 3rd year

Research Question 2: Do Student Background Characteristics Shape Intentions and First Year College Experiences?

Different Attitudes, Subjective Norms, and Behavioral Control Beliefs are associated with students' initial intentions to study abroad (IISA) depending on intention strength (see Table 2). Individuals who believed there was very little chance that they would study abroad were more likely to be men (odds ratio=2.07), from medium and lower income families, but less likely to be an underrepresented minority (odds ratio=0.66). They were less likely to anticipate they would be involved in campus activities such as student government, clubs or service activities (odds ratio=0.63) and perceived improving understanding of other countries to be less important to them, personally (odds ratio=0.50). They were also less inclined to think they would change their major or career path (odds ratio=0.78).

Students reporting some chance to study abroad were more often men (odds ratio=1.30) and were likely to perceive they needed to work to meet college expenses (odds ratio=1.10). They were also more likely to enter college with high ACT scores (odds ratio=1.02). They were less likely to report strong inclinations to socialize with other racial/ethnic group (odds ratio=0.82), frequently engage in community service in high school (odds ratio=0.85), and report high competence in seeing and understanding other people's perspectives (odds ratio=0.88).

Within the very good chance group, students were less likely to be men (odds ratio=0.40) or from medium and lower-income families (odds ratio=0.74 and 0.68, respectively). They more often exhibited stronger interest in improving their cultural understanding (odds ratio=2.26) and were more often attracted to college cocurricular activities (odds ratio=2.03) and engaged socially with diverse people (odds ratio=1.26). They were also inclined to believe they may change majors and/or career paths (odds ratio=1.31) and to perceive that they are skilled at negotiating social differences (odds ratio=1.25). They were less likely to believe they would need to work while attending college (odds ratio=0.90).

Students' characteristics at entry also shaped their First Year College Experiences. For example, the likelihood of joining a learning community was greatest for individuals from underrepresented minority groups (odds ratio=1.66), those with most interest in cocurricular activities (odds ratio=1.46), students with stronger interest in learning about cultural differences (odds ratio=1.30), and individuals who spent more time in volunteer projects during high school (odds ratio=1.27). Students in the liberal arts college (College: Humanities and Sciences) were more likely to be open to changing majors and careers (odds ratio=1.90) and more interested in pursuing cocurricular activities (odds ratio=1.69). They were also more likely to be members of an underrepresented minority group (odds ratio=1.36). Individuals who valued cultural learning and believed they were open to having their views challenged (Negotiating Social Differences) were also more likely to be enrolled in the college of humanities and sciences. Virtually all of the background factors affected students' first year GPA; for instance, individuals with higher GPAs were more likely to be women, non-minority, and from high-income families who reported stronger interest in cocurricular activities and cultural understanding. Engagement in language learning, on the other hand, was influenced by fewer background characteristics, and the relationships were generally positive. To illustrate, students who exhibited stronger interest in learning about other cultures and flexibility in their pursuit of majors and careers completed a larger number of language credits. Cohort membership was not greatly affected by background characteristics.

Table 2 GSEM coefficient estimates

Direct effect	Initial Intent to Study Abroad				First Year College Experience				Study Abroad Participation			
	Very little chance		Some chance		Joined Learning community		Language credits earned		Cohort 2009		Cohort 2008	
	<i>Exp(b)</i>	<i>Exp(b)</i>	<i>Exp(b)</i>	<i>Exp(b)</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>Exp(b)</i>	<i>Exp(b)</i>	<i>Exp(b)</i>	<i>Exp(b)</i>
Attitudes												
Cocurricular plans scale	0.63 ^{***} (0.04)	1.06 (0.05)	2.03 ^{***} (0.11)	1.46 ^{***} (0.11)	0.06 ^{****} (0.01)	0.26 ^{**} (0.08)	1.69 ^{***} (0.08)	0.90 [*] (0.04)	0.99 (0.05)	1.19 ^{**} (0.08)		
Plans for diverse interactions	1.02 (0.07)	0.82 (0.05)	1.26 ^{**} (0.09)				0.82 ^{**} (0.05)					
Importance of understanding other cultures	0.50 ^{***} (0.03)	0.91 (0.05)	2.26 ^{***} (0.12)	1.30 ^{**} (0.10)	0.06 ^{****} (0.01)	0.56 ^{***} (0.09)	1.24 ^{***} (0.07)					
High school volunteering				1.27 ^{**} (0.09)				0.97 (0.05)	0.94 (0.05)	0.83 ^{**} (0.05)		
High school diversity interactions								0.86 [*] (0.06)	0.91 (0.06)			
High school community service	1.04 (0.09)	0.85 [*] (0.06)	1.08 (0.07)									
Subjective norms												
Male	2.07 ^{***} (0.13)	1.30 ^{***} (0.06)	0.40 ^{***} (0.02)	0.64 ^{***} (0.05)	-0.10 ^{***} (0.01)	-0.91 ^{***} (0.09)	0.50 ^{***} (0.03)			0.62 ^{***} (0.04)		
Underrepresented minority	0.66 ^{***} (0.08)	1.14 (0.10)	1.16 (0.10)	1.66 ^{***} (0.18)	-0.15 ^{***} (0.02)		1.36 ^{***} (0.13)					

Table 2 (continued)

Direct effect	Initial Intent to Study Abroad			First Year College Experience				Study Abroad Participation	
	Very little chance	Some chance	Very good chance	Joined Learning community	GPA	Language credits earned	College HS	Cohort 2008	Cohort 2009
	<i>Exp(b)</i>	<i>Exp(b)</i>	<i>Exp(b)</i>	<i>Exp(b)</i>	<i>b</i>	<i>b</i>	<i>Exp(b)</i>	<i>Exp(b)</i>	<i>Exp(b)</i>
Low-income ^a	1.28** (0.11)	1.01 (0.07)	0.68** (0.05)		-0.09*** (0.02)				
Medium-income ^a	1.32*** (0.09)	0.99 (0.06)	0.74*** (0.05)	1.19* (0.09)	-0.03* (0.01)	0.31** (0.10)			0.80** (0.06)
Behavioral control beliefs									
ACT score	0.99 (0.01)	1.02 (0.01)	1.00 (0.01)	1.07*** (0.01)	0.05*** (0.00)	-0.09*** (0.01)	0.96*** (0.01)	0.97*** (0.01)	1.00 (0.01)
Negotiating social differences scale	0.90 (0.05)	0.88 (0.04)	1.25*** (0.06)		-0.04*** (0.01)	0.17* (0.08)	1.20*** (0.06)		
Control of study/career plans scale	0.78*** (0.03)	1.00 (0.03)	1.31*** (0.04)		0.02** (0.01)	0.65*** (0.06)	1.90*** (0.07)		1.29*** (0.05)
Need to work scale	1.09 (0.05)	1.10** (0.04)	0.90** (0.03)	1.14** (0.06)	-0.03*** (0.01)		0.84*** (0.03)		0.76*** (0.03)
Initial Intent to Study Abroad									
Very little chance ^b				1.34 (0.30)	0.07** (0.02)	0.14 (0.20)		1.10 (0.12)	0.88 (0.09)
Some chance ^b				1.77** (0.38)	0.08*** (0.02)	0.34 (0.19)		1.08 (0.12)	0.78* (0.08)
Very good chance ^b				2.28*** (0.49)	0.08** (0.02)	1.03*** (0.20)		0.98 (0.10)	0.78* (0.08)

Table 2 (continued)

Direct effect	Initial Intent to Study Abroad		First Year College Experience			Study Abroad Participation		
	Very little chance <i>Exp(b)</i>	Some chance <i>Exp(b)</i>	Very good chance <i>Exp(b)</i>	Joined Learning community <i>Exp(b)</i>	GPA <i>b</i>	Language credits earned <i>b</i>	Cohort 2008 <i>Exp(b)</i>	Cohort 2009 <i>Exp(b)</i>
First Year College Experience								
Joined learning community								1.80 ^{***}
GPA								(0.13)
Language credits earned								1.05 ^{***}
College of humanities and sciences								(0.01)
Cohort 2008 ^c								0.56 ^{***}
Cohort 2009 ^e								(0.04)
- 2 log likelihood								0.84 [*]
AIC								(0.06)
BIC								
Number of observations								

Cells with no entry are not part of the path model (see Appendix 3)

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

^aReference group is high-income group

^bReference group is no chance group

^cReference group is cohort 2010

Research Question 3: Do Intentions Directly Impact First Year College Experiences?

Intentions appear to greatly influence students' participation in learning communities. Students who reported the strongest intentions and some intentions to study abroad were most likely to join these groups (odds ratio = 2.28, odds ratio = 1.77). Individuals in the strongest intention group were also likely to earn the highest number of language credits ($b = 1.03$). The impact of all three intention levels on GPA was about the same and indicated individuals with some aspiration to study abroad, compared to those with none, were likely to earn higher grades. Individuals in the 2009 Cohort were more likely to report weaker intentions than those in the 2010 Cohort.

Research Question 4: What are the Direct, Indirect, and Combined Effects of Students' Background Characteristics, Intentions and First Year College Experiences on Study Abroad Participation?

A key assumption of our conceptual framework is that IISA along with First Year College Experiences would mediate the effects of antecedent variables on SAP. The path analysis results indicating the logit coefficients of total, direct, and indirect effects of antecedent variables on SAP are summarized in Table 3. The results underscore the importance of intention strength and reveal relationships among the variables that both enhance and diminish the overall chances a student will study abroad. Classic SEM model fit-indicators (e.g., RAMSEA and CFI) cannot be obtained for non-linear GSEM. Hence, we conducted a post hoc sensitivity analysis (e.g., Cuevas et al. 2017; Perez et al. 2016) using a randomly selected test set comprised of 50% of the original sample ($n = 4868$) and a training set comprised of the remaining 50% ($n = 4869$). We re-ran our GSEM model on each data set to see if the effects remained close to those found in our original model. The size and significance of the effects of all predictor variables remained close to the original model.

The indirect effect of cocurricular plans transmitted through IISA: Very Good Chance (indirect effect = 1.62) amplified the direct positive effect of stronger interests in cocurricular activities on SAP (total effect = 1.79). The direct effect of cocurricular plans on SAP is enhanced by GPA (indirect effect = 0.04) and language credits earned (indirect effect = 0.01), increasing the likelihood of SAP (total effects = 0.21 and 0.18, respectively). The positive impact of students' sense of control over their programs of study or careers on SAP (direct effect = 0.25) is transmitted through and augmented by strong intentions (indirect effect = 0.61), significantly increasing the odds (total effect = 0.86). GPA (indirect effect = 0.01) and language credits earned (indirect effect = 0.03) also mediate the effects of control beliefs regarding study and career plans and increase the likelihood of SAP (total effects = 0.26 and 0.28, respectively). Other student background characteristics do not have direct effects on SAP and only exert indirect positive effects through intentions. For instance, student predispositions to engage socially with diverse people (indirect effect = 0.52), to have strong interests in expanding cultural understanding (indirect effect = 1.87), and self-reported strong skill with negotiating social interactions (indirect effect = 0.51) influence SAP indirectly and positively through strong intentions.

Negative relationships between Subjective Norms, Behavioral Control Beliefs and the strongest intentions (IISA: Very Good Chance) depict variable combinations that impede SAP. To illustrate, the effects of gender, income, and need for financial resources are significantly and negatively mediated by IISA: Very Good Chance. Men, compared to women, are less likely to engage in study abroad (direct effect = -0.48) and less inclined to hold

strong intentions (indirect effect = -2.10), further reducing the likelihood that male students would study abroad (total effect = -2.58). Differences in college experiences also contribute to discrepancies in SAP rates between men and women. Compared to women, men have lower GPAs and earn fewer language credits and these negative effects (indirect effect = -0.06 and -0.05 , respectively), in turn, reduce the likelihood of men studying abroad (total effects = -0.54 and -0.52 , respectively).

Family income, particularly medium-income, directly (direct effect = -0.22) and indirectly (indirect effect = -0.70) influences SAP through strong intent (total effect = -0.92). Students whose families earn \$50,000–\$100,000 per year are less likely to hold strong intentions to study abroad and this increases the negative impact of income on SAP. Low-income students (family income less than \$50,000), on the other hand, do not significantly differ from high-income (more than \$100,000) students in SAP. However, low-income indirectly and negatively influences SAP through IISA: Very Good Chance, as students whose family income is less than \$50,000 are less likely to report strong intentions (indirect effect = -0.87). Furthermore, compared to high income students, medium-income students are more likely to have lower first year GPAs which exerts an indirect negative effect on SAP (indirect effect = -0.02). This combination of income and GPA reduces the likelihood of study abroad (total effect = -0.24). However, engagement in language learning positively mediates the effect of medium-income on SAP (indirect effect = 0.01); nevertheless, the likelihood of medium-income students studying abroad remains significantly lower than the likelihood associated with high-income students (total effect = -0.21).

Negative paths to SAP associated with finances are also observed in the relationships among the need to work, intent and participation. A greater perceived need to work during college reduces the odds of SAP (direct effect = -0.28) and also influences SAP indirectly through strong intentions (indirect effect = -0.24). The combined effects further decrease the likelihood of an overseas experience (total effect = -0.52). However, moderately strong intentions (IISA: Some Chance) significantly and positively mediate the effect of perceived financial need on SAP. The negative direct effect of students' perceived need to work on SAP (direct effect = -0.28) combines with the positive indirect effect of IISA: Some Chance (indirect effect = 0.14) to soften, albeit to only a limited degree, its negative direct effect on SAP (total effect = -0.14). In addition, students who anticipate they will need to work to meet college expenses are more likely to earn lower grades in their first year which exerts an indirect negative effect on SAP (indirect effect = -0.02).

Finally, intentions of all levels are positively mediated by first year GPA to increase the likelihood of SAP. Language credits earned only increases the probability of studying abroad for individuals in the strong intention group (indirect effect = 0.05). Cohort membership does not significantly mediate the effects of intentions on SAP.

Limitations

Several limitations of this study should be acknowledged. First, our outcome variable study abroad participation (SAP) included programs that varied in terms of duration, location, and type (e.g., service learning, faculty-led). These variations may well influence students' decisions about going abroad (e.g., Donnelly-Smith 2009; Long et al. 2010; Tarrant et al. 2014). Second, our outcome variable captures student participation during their 2nd or 3rd year of college, but our measures of college activities are for only the first year. As stated earlier, given the study abroad application process generally takes place one semester prior

to actual participation, our rationale for using only first year experiences was proximity to study abroad decision-making. Nonetheless, for those who studied abroad during their 3rd year of college, the effect of college experiences during the second year (i.e., increase or decrease in GPA or language credits) is not adequately captured. Third, participants in this study are not representative of all students who study abroad. The sample is from a large, elite research university with students who tend to be from high socioeconomic backgrounds and therefore, are more likely to have greater capital such as awareness of and interest in international programs or the financial means to participate. Therefore, the findings cannot be generalized across all American college students who go abroad, particularly those who may be non-traditional students entering as transfer students. Fourth, given any student that failed to complete the CIRP survey, transferred college, or dropped out was not used in the analysis, sample attrition may have presented some bias. For instance, CIRP respondents were more likely to be women, from high-income families and to have higher ACT scores. Fifth, study abroad participants in this study were limited to those who engaged in activities abroad for academic credit. Given that there is a growth in the number of students who participate in non-credit work, internships, and volunteering abroad (IIE 2019), the findings may not be applicable to students who engage in such experiences. Sixth, we include first year college experiences that are expected to exert strong influence on decisions to participate in study abroad. Nevertheless, we acknowledge that there may be other curricular and cocurricular experiences that are not captured in this study due to data constraints (e.g., participation in international themed clubs, first year transition courses, volunteering). Finally, a full evaluation of TRA would include measures of intentions to study abroad at entrance and at the time students are making their decisions to participate (e.g., second year of enrollment). While the ideal is to measure intentions in close proximity to decision-making, as with most prior large-scale studies, we use available data to generate measures of our theoretical constructs and have only one measure of intentions gathered at entrance.

Discussion

Through a longitudinal analysis of data gathered on students from college entry to graduation, we sought to identify pre-enrollment student characteristics, intentions, and college activities that combine in different ways to influence study abroad engagement. Given space constraints, we focus discussion on (1) support for the proposed framework and (2) patterns of student background characteristics, intentions, and early collegiate experiences that promote and impede study abroad.

Evidence Supporting the Framework

Our framework and analytic approach assume that the temporal dimension of decisions is important and should be considered when examining the impact of intentions on study abroad participation. We proposed that student background characteristics would have greatest impact on study abroad intentions formed prior to entry and that these aspirations would mediate the impact of background factors on subsequent model constructs. This proposition is partially supported. The direct effects of several Student Background Characteristics (family income, gender and plans for interacting with a diverse set of individuals) were greatest for Intentions. However, others (volunteer experience in high school

Table 3 Direct, indirect, and total effects on Study Abroad Participation (SAP)

	Intention			First Year College Experiences			
	Very little chance	Some chance	Very good chance	GPA	Language credits	Cohort 2008	Cohort 2009
Attitudes							
Cocurricular plans scale							
Direct	0.17**		0.17**	0.17**	0.17**		
Indirect	- 0.35***		1.62***	0.04***	0.01***		
Total	- 0.18		1.79**	0.21**	0.18**		
Plans for diverse interactions							
Direct							
Indirect		- 0.29**	0.52***				
Total							
Importance of understanding other cultures							
Direct							
Indirect	- 0.53*		1.87***	0.03***	0.03***		
Total							
High school community service							
Direct							
Indirect		- 0.24*				0.08*	
Total							
Subjective norms							
Male							
Direct	- 0.48***	- 0.48***	- 0.48***	- 0.48***	- 0.48***		
Indirect	0.55*	0.37***	- 2.10***	- 0.06***	- 0.05***		
Total	0.07	- 0.11	- 2.58***	- 0.54***	- 0.52***		

Table 3 (continued)

	Intention				First Year College Experiences		
	Very little chance	Some chance	Very good chance		GPA	Language credits	
Underrepresented minority							
Direct							
Indirect	- 0.32*				- 0.09***		
Total							
Low-income^a							
Direct							
Indirect	0.18		- 0.87***		- 0.05***		
Total							
Medium-income^a							
Direct	- 0.22**		- 0.22**		- 0.22**	- 0.22**	
Indirect	0.21*		- 0.70***		- 0.02*	0.01**	
Total	- 0.01		- 0.92**		- 0.24**	- 0.21**	
Behavioral control beliefs							
ACT score							
Direct		- 0.03**			- 0.03**	- 0.03**	- 0.03**
Indirect		0.03*			0.03*	- 0.00***	0.02***
Total		0.00			0.00	- 0.03**	- 0.01
Negotiating social differences scale							
Direct							
Indirect		- 0.19*	0.51***		- 0.02**	0.01*	
Total							
Control of study/career plans scale							
Direct	0.25***		0.25***		0.25***	0.25***	
Indirect	- 0.19*		0.61***		0.01***	0.03***	

Table 3 (continued)

	Intention			First Year College Experiences			
	Very little chance	Some chance	Very good chance	GPA	Language credits	Cohort 2008	Cohort 2009
Total	0.07		0.86 ^{***}	0.26 ^{***}	0.28 ^{***}		
Need to work scale							
Direct		− 0.28 ^{***}	− 0.28 ^{***}	− 0.28 ^{***}			
Indirect		0.14 [*]	− 0.24 ^{**}	− 0.02 ^{***}			
Total		− 0.14 [*]	− 0.52 ^{***}	− 0.30 ^{***}			
Initial intentions							
Very little chance ^b							
Direct				0.76 ^{**}			
Indirect				0.04 ^{**}			
Total				0.80 ^{**}			
Some chance ^b							
Direct				1.42 ^{***}			1.42 ^{**}
Indirect				0.05 ^{**}			0.04
Total				1.47 ^{***}			1.46 ^{***}
Very good chance ^b							
Direct				2.29 ^{***}	2.29 ^{***}		2.29 ^{***}
Indirect				0.05 ^{**}	0.05 ^{***}		0.04
Total				2.34 ^{***}	2.34 ^{***}		2.33 ^{***}

*p < 0.05, **p < 0.01, ***p < 0.001

^aReference group is high-income group^bReference group is no chance group

and being an underrepresented minority student) had strongest direct effects on First Year College Experiences. Most background characteristics directly influenced both intentions and initial college experiences: namely, predispositions toward cocurricular involvement, importance ascribed to learning about other cultures, self-assessed skill with handling social interactions, control over one's program of study and career, and an anticipated need to work while in college. The influences of several background characteristics on study abroad (e.g., plans to become involved in diverse interactions while in college, strength of social interaction skills) were primarily indirect and transmitted through Intentions. In addition, indirect effects of pre-entry characteristics conveyed through First Year College Experiences were not as great as those mediated by Intentions.

The conceptual framework posits that intention is a motivational construct and strength needs to be taken into account when estimating its effect on study abroad behavior. This proposition is supported by many findings. The odds of participation are almost five times greater for those who say there is a very good chance they will study abroad compared to those who say there is little chance and more than two times greater than individuals who express some chance. These findings are important considerations when interpreting prior research as findings can vary depending on how intention measures are constructed. To illustrate, BaileyShea (2009) combined some and very good chance to operationalize intent and no or very little chance of studying abroad to represent no intent. Luo and Jamieson-Drake (2015) used very good chance to proxy strong intention and some, little or no chance of studying abroad to represent weak intention. The former inquiry found intention had at best a weak association with study abroad and the latter found it was the single best predictor. Our findings show that the mid-level intention (some chance) tends to negatively influence the odds of participation. The inclusion of these respondents in the intention group in the BaileyShea study may have reduced the impact of strong intention. The exclusion of this group from the strong intention category in the Luo and Jamieson-Drake study may well have increased the positive impact of strong intention.

The framework assumes intentions represent the effort students plan to exert toward studying abroad and therefore would shape both students' first year campus engagements that enhance their eligibility and participation. We further proposed that because they occur in closer proximity to one another, intentions might have greater impact on students' early college experiences than study abroad engagement. Overall, the impact of intentions on participation was greatest, regardless of intention strength. However, the findings offer preliminary evidence that strength might play a role in directing student behavior in the first year. Compared to students with no plans to study abroad, students with the strongest intentions (IISA: Very Good Chance) earned higher grades and more language credits. Future research ought to consider a broader array of curricular engagements and should include among the first-year experiences ones that are more elective than those available in the present study. Elective coursework will offer insights into students' interest in international issues. Inclusion of cocurricular activities such as joining a theater group, fraternity or sorority, club or varsity sports team will help identify specific activities that may result in pressures to stay on campus.

Patterns

The current study's findings confirm interconnections among antecedents of study abroad participation that prior investigators have suggested. For example, researchers note the persistent differences in intentions and study abroad between male and female students and

suggest that males may be less inclined to engage because of their majors and academic performance (e.g., Fisher 2012; Luo and Jamieson-Drake 2015; Salisbury et al. 2010; Stallman et al. 2010). The GSEM results indicate that compared to female students, males were less likely to have strong intentions or be enrolled in the college of humanities and sciences. In addition, the path analysis identified significant indirect effects of gender through both the GPA and language variables.

Prior studies also show students who prioritize learning about other cultures and/or have stronger interests in studying language are more likely to hold strong intentions leading to speculations that these individuals are more likely to study abroad (Dessoiff 2006; Goldstein and Kim 2006; Kim and Goldstein 2005; Luo and Jamieson-Drake 2015; Stroud 2010). In the current study, students with these interests were more likely to have strong intentions, earn more language credits, and have higher GPAs—all of which enhanced the likelihood they would study abroad. This finding also fits with Salisbury et al.'s (2009) assumption that academic performance and language learning are forms of capital that can be earned and, perhaps, exchanged for access to study abroad programs.

Anticipated involvement and actual engagement in student government, sports, political and social clubs, are found to be associated with both strong and weak intentions and study abroad participation (e.g., Miller 2004; Stroud 2010). Investigators have hypothesized that engagement in these activities may make it more difficult to leave friends or may restrict the time one can spend away from campus (Lingo 2019; Luo and Jamieson-Drake 2015; Silver 2012). Our findings support the proposition that plans for more extensive involvement in cocurricular activities significantly and positively increase the odds of study abroad both directly and indirectly through strong intentions, stronger GPAs, and completed language credits. Further research that takes into account the nature of cocurricular activities—e.g., time commitments, strength of personal connections that result, potential impact on careers—is needed to gain additional insights into this relationship.

In the current study, sense of control over one's program of study and career plans signifies the flexibility students may feel to choose among campus activities and carve out time to go abroad, an opportunity cost. Researchers suggest that individuals who perceive the opportunity costs of study abroad are too steep (e.g., graduation may be postponed, credits might not transfer) will be less likely to participate and that students in engineering and other undergraduate professions with structured curricula may feel particularly constrained (e.g., Neihaus and Inkelas 2016; Stroud 2010; Wainwright et al. 2009). Our findings tend to support this interpretation in that students who perceived they had more flexibility over their academic programs were more likely to be enrolled in the college of humanities and sciences and were more likely both to report strong intentions and to study abroad. However, we note that the college of enrollment did not significantly affect participation, a finding we take up later in this discussion.

It is widely reported that social class and financial constraints shape intentions and participation (e.g., Dessoiff 2006; Lingo 2019; Schnusenberg et al. 2012; Simon and Ainsworth 2012; Whatley 2017). However, findings are mixed with some studies discovering no impact of socioeconomic status (e.g., BaileyShea 2009) and others obtaining important effects (e.g., Doyle et al. 2010; Lingo 2019). Socioeconomic status, proxied by family income, significantly increased the chances medium- and lower-income students in our study would hold weak intentions. The impact of family income on participation was significant and lowered the probability of participation for medium-income students but was not significant for lower income students. Individuals who anticipated they must work during college to meet expenses were likely to equivocate regarding their intentions—they were more likely than students who felt less need to work to be in the IISA: Some Chance

group. While the perceived need to work diminished the positive impact of strong intentions on SAP, its negative impact on the chances of study abroad participation was softened to a limited degree among those indicating some intent. These mixed findings raise questions for further research on combinations of family income, perceived need to work and intentions that increase or decrease the chances of study abroad participation.

Findings from the current study underscore the contributions of context to the formation of intentions and study abroad decisions (e.g., BaileyShea 2009; Coldwell 2013; Lingo 2019; Salisbury et al. 2010; Stroud 2015). As was the case in the Luo and Jamieson-Drake (2015) study, we found cohort membership may proxy campus norms and instrumental resources available for study abroad. We noted in the campus description that several activities to support and enhance international engagements of students and faculty were undertaken during the time of the study. Preliminary evidence suggests they have desired effects as the earlier cohorts were less likely to study abroad than the more recent one. In contrast with inquiries that suggest students in STEM are less likely to study abroad (e.g., Brux and Fry 2010; Niehaus and Inkelas 2016; Stroud 2010), students in the college of engineering were no less likely to study abroad than students in the liberal arts. The engineering school at the study institution has an office dedicated to accommodating the needs of students with interests in study abroad and to designing and implementing programs that can more easily be integrated into undergraduate requirements. Results imply such practices may be helpful for majors with less flexible curricula or where norms do not particularly value study abroad experiences.

However, current study findings also highlight contextual factors that may mitigate against study abroad. As noted above, while the campus paid particular attention to increasing study abroad participation by lower income and underrepresented minority students, it simultaneously introduced first year learning communities to promote intercultural understanding and social justice. Underrepresented minority students were more likely than non-minority students to have weak intentions to study abroad when they arrived on campus and they were more likely to join these learning communities. We modelled the living learning settings as a habitus where networks formed could possibly change valuations of study abroad and increase participation, but this was not the case. It could well be that the interactions in these settings promoted service engagement in the U.S. and there might have been felt pressure to continue with projects initiated during the academic year. Hence, we urge investigators to consider the characteristics of these settings that may promote as well as discourage study abroad.

Implications for Research

Along with the questions for further research that we highlighted in the discussion, study findings underscore the importance of developing more refined measures of study abroad intention. Surveys have been developed with less global measures of intention that include specific features of programs that might be attractive or problematic such as: transferability of credits, who would provide instruction (home or foreign faculty), program duration, whether or not a service or internship is involved, when the program occurs (during regular academic year or summer), location (e.g., Goel et al. 2010; Wang et al. 2016). Providing students with a more detailed description of study abroad and tailoring the characteristics to fit opportunities on a particular college campus are likely to enhance the predictability of the intention construct.

The findings of the current study offer preliminary support for the conceptual framework. However, as is often the case in large scale studies of study abroad, the present inquiry conducted secondary analysis of existing data and the measures of theoretical constructs are not always optimal. Instruments developed to explicitly test the Theory of Reasoned Behavior are available that can be modified to fit the context of study abroad decisions.

In the future, researchers should assess intentions not only at the time of entrance but also closer to the time participation decisions are made. Ideally, data should be collected at both times in order to identify first and early second year activities that may alter initial intentions. If this is not possible, measuring intention early in students' second year when they are likely considering and discussing with advisors the possibility of study abroad would be optimal. One could then account for students' background characteristics as well as campus involvements that shape their intentions and enter into the decision-making process. This would aid efforts to better understand variations in study abroad decision-making within and between student groups (e.g., race, gender, income, peer) and to research the effects of curricular and cocurricular engagements on their decisions. Results of such inquiries will ultimately move scholars closer to understanding the current gap between intentions and participation. As Ajzen (1985, 2001) notes, intentions assessed closer to study abroad engagement will reflect life events that occur and can alter intention strength and valence.

Finally, preliminary evidence about campus context suggests emphasis given to study abroad and the types of programs available to students may affect students' subjective norms and perceived opportunity costs, factors taken into account as intentions are constructed and decisions are made. Future studies should include indicators of climate such as financing available to students, predominant norms regarding the importance of study abroad and account for participation requirements such as academic preparation and curricular or cocurricular activities that may enhance or diminish intentions.

Implications for Practice

It is likely that different approaches to recruiting are needed when reaching out to students with strong intentions compared to those with weak interest or individuals who are vacillating. In light of these findings, marketing study abroad opportunities to individuals with strong intentions might begin by reaching out to international oriented clubs (e.g., student organizations focused on language or culture of another country) or learning communities with an international theme. Study abroad offices might also recruit prior study abroad participants to work as peer mentors or work with faculty teaching courses such as global studies to present study abroad opportunities. Students who are strongly motivated to study abroad may also find language learning programs that include an overseas component are particularly attractive.

For students with weak intentions or those who appear to be positive but undecided, it is important to convey that financial support is available and that participation can be a career opportunity benefit rather than a cost. In this sense, study abroad offices can partner with campus career service offices to help students see how overseas experiences translate to acquisition of important skills that employers look for in their job candidates. On the study campus, efforts to publicize study abroad initiatives and to incorporate experiences into highly structured curricula appear to be effective. Study abroad programs that link

with learning communities that are particularly attractive to underrepresented students can potentially begin early to use these sites to enhance valuations of international engagement and build bridges to specific study abroad initiatives.

Conclusion

Few studies have sought to explicitly link intentions to study abroad with actual engagement and those that have underscore the importance of intentions to participation decisions. We contribute to this body of work by proposing and evaluating a framework that closely approximates the multi-stage process assumed to culminate in decisions about study abroad engagement (formation of an initial intention, engagement with campus activities consistent with one’s intention, deciding whether to participate). The study offers insights into intention as a motivation construct by better accounting for levels of strength, differences in the subjective probability that a student will study abroad. Findings highlight student attributes associated with intentions that differ in strength and patterns of institutional characteristics and student attitudes, subjective norms, behavior control beliefs, intentions, and campus involvement that shape individuals’ decisions to study abroad. The findings begin to uncover reasons why prior study results regarding antecedents of intentions and the impact of intentions on study abroad participation may vary. Study results will hopefully prompt efforts among scholars to develop more refined measures of intentions and to improve data collection in ways that will help practitioners and researchers better understand why differences persist between the proportion of entering students who report intentions to study abroad and the percentage who actually participate.

Appendix 1: Variable Definitions

	Definitions
Outcome	
Study abroad participation (SAP)	Participated in any type of study abroad associated with academic credit during their 2nd or 3rd academic year (0 = no; 1 = yes)
Attitudes	
Cocurricular plans scale (Cronbach’s alpha = 0.58)	<p>Scaled variable representing the mean score for students’ self-reported responses (1 = no chance; 2 = very little chance; 3 = some chance; 4 = very good chance) to the following questions:</p> <p>(1) What is your best guess as to the chances that you will participate in student clubs/groups (factor score = 0.77)</p> <p>(2) What is your best guess as to the chances that you will participate in student government (factor score = 0.67)</p> <p>(3) What is your best guess as to the chances that you will participate in volunteer or community service (factor score = 0.78)</p>

	Definitions
Plans for diverse interactions	Students' self-reported responses to: "What is your best guess as to the chances that you will socialize with other racial/ethnic group?" (0=no chance, very little chance, some chance; 1=very good chance)
Importance of understanding other cultures	Students' self-reported responses to: Please indicate the importance to you personally of "improving my understanding of other countries and cultures" (0=not important, somewhat important; 1=very important, essential)
High school volunteering	Student self-report of having performed volunteer work during last year of high school (0=none, occasional; 1=frequently)
High school community service	Student self-report of having performed community service during last year of high school (0=none, occasional; 1=frequently)
High school diversity interactions	Student self-report of having socialized with someone of another racial/ethnic group during last year of high school (0=none, occasional; 1=frequently)
Subjective norms	
Male	Sex (0=female; 1=male)
Underrepresented minority	Self-ascribed underrepresented minority status; Hispanic/Latino, African American, and American Indian/Alaskan Native (0=no; 1=yes)
Low-income	Family income less than \$50,000 (0=no; 1=yes)
Medium-income	Family income \$50,000-\$100,000 (0=no; 1=yes)
High-income	Income more than \$100,000 (0=no; 1=yes)
Behavioral control beliefs	
ACT score	Actual ACT score
Negotiating social differences scale (Cronbach's Alpha=0.79)	<p>Scaled variable representing the mean score for students' self-rating (1=lowest 10%; 2=below average; 3=average; 4=above average; 5=highest 10%) on each of the following traits as compared with the average person his/her age:</p> <p>(1) Ability to see the world from someone else' perspective (factor score=0.72)</p> <p>(2) Tolerance of others with different beliefs (factor score=0.77)</p> <p>(3) Openness to having my own views challenged (factor score=0.75)</p> <p>(4) Ability to discuss and negotiate controversial issues (factor score=0.71)</p> <p>(5) Ability to work cooperatively with diverse people (factor score=0.76)</p>
Control of study and career plans scale (Cronbach's alpha=0.82)	<p>Scaled variable representing the mean score for students' self-reported responses (1=no chance; 2=very little chance; 3=some chance; 4=very good chance) to the following questions:</p> <p>(1) What is your best guess as to the chances that you will change career choice (factor score=0.92)</p> <p>(2) What is your best guess as to the chances that you will change major choice (factor score=0.92)</p>

	Definitions
Need to work scale (Cronbach's alpha = 0.63)	Scaled variable representing the mean score for students' self-reported responses (1 = no chance; 2 = very little chance; 3 = some chance; 4 = very good chance) to the following questions: (1) What is your best guess as to the chances that you will work full-time while attending college (factor score = 0.86) (2) What is your best guess as to the chances that you will get a job to help pay for college expenses (factor score = 0.86)
Initial Intentions to Study Abroad (IISA)	
IISA: no chance	Student self-reported response to the question: What is your best guess as to the chances that you will participate in study abroad program (1 = no chance)
IISA: very little chance	Student self-reported response to the question: What is your best guess as to the chances that you will participate in study abroad program (1 = very little chance)
IISA: some chance	Student self-reported response to the question: What is your best guess as to the chances that you will participate in study abroad program (1 = some chance)
IISA: very good chance	Student self-reported response to the question: What is your best guess as to the chances that you will participate in study abroad program (1 = very good chance)
First Year College Experiences	
Joined learning community	Student participated in a residential learning community during freshman year (0 = no; 1 = yes)
GPA	Cumulative grade point average at the end of first academic year
Language credits earned	Total number of foreign language credits taken by the end of first academic year
College of enrollment: Humanities and Sciences	Enrolled in College of Humanities and Sciences at the end of first academic year (0 = no, enrolled in other school/college (i.e., engineering, music, nursing, art and design, kinesiology); 1 = yes, enrolled in College of Humanities and Sciences)
Cohort 2008	Domestic undergraduate students with no prior credit-bearing study abroad experience, who enrolled for the first time in the Fall of 2008 (0 = no; 1 = yes)
Cohort 2009	Domestic undergraduate students with no prior credit-bearing study abroad experience, who enrolled for the first time in the Fall of 2009 (0 = no; 1 = yes)
Cohort 2010	Domestic undergraduate students with no prior credit-bearing study abroad experience, who enrolled for the first time in the Fall of 2010 (0 = no; 1 = yes)

Appendix 2: Regression Results

See Tables 4, 5 and 6.

Table 4 Pre-enrollment characteristics on Initial Intentions to Study Abroad (IISA) and First Year College Experiences

	Dependent variables											
	Initial Intent to Study Abroad					First Year College Experience						
	No chance	Very little chance	Some chance	Very good chance	Joined learning community	GPA	Language credits earned	College HS	Cohort 2008	Cohort 2009	Cohort 2010	
Logit	Logit	Logit	Logit	Logit	OLS	OLS	Logit	Logit	Logit	Logit		
Attitudes												
Cocurricular plans scale	- 1.23*** (0.09)	- 0.48*** (0.06)	0.07 (0.05)	0.72*** (0.05)	0.43*** (0.07)	0.07** (0.01)	0.44*** (0.09)	0.55*** (0.05)	0.00 (0.05)	- 0.01 (0.05)	0.01 (0.05)	
Plans for diverse interactions	0.14 (0.12)	- 0.02 (0.07)	- 0.21** (0.06)	0.25*** (0.07)	0.08 (0.10)	0.00 (0.01)	0.04 (0.12)	- 0.17* (0.07)	0.06 (0.07)	0.01 (0.07)	- 0.06 (0.06)	
Importance of understanding other cultures	- 0.72*** (0.11)	- 0.70*** (0.06)	- 0.09 (0.05)	0.82*** (0.06)	0.31*** (0.08)	0.06** (0.01)	0.70*** (0.10)	0.20*** (0.06)	0.06 (0.06)	0.00 (0.05)	- 0.05 (0.05)	
High school volunteering	0.12 (0.12)	0.11 (0.07)	- 0.06 (0.05)	- 0.07 (0.06)	0.24** (0.07)	0.00 (0.01)	- 0.14 (0.10)	- 0.05 (0.06)	- 0.09 (0.06)	- 0.04 (0.05)	0.11* (0.05)	
High school diversity interactions	- 0.08 (0.11)	0.08 (0.07)	0.02 (0.06)	- 0.07 (0.06)	- 0.02 (0.08)	0.00 (0.01)	- 0.09 (0.10)	- 0.07 (0.06)	- 0.11 (0.06)	- 0.08 (0.06)	0.16** (0.05)	
High school community service	0.28 (0.15)	0.00 (0.09)	- 0.14* (0.07)	0.10 (0.07)	- 0.08 (0.09)	0.00 (0.02)	0.01 (0.13)	0.03 (0.08)	- 0.23** (0.08)	- 0.09 (0.07)	0.25*** (0.07)	
Subjective norms												
Male	0.60*** (0.11)	0.74*** (0.06)	0.26*** (0.05)	- 0.93*** (0.05)	- 0.53*** (0.07)	- 0.10** (0.01)	- 1.10*** (0.09)	- 0.69*** (0.05)	- 0.02 (0.05)	0.05 (0.05)	- 0.03 (0.05)	
Underrepresented minority	- 0.01 (0.17)	- 0.44*** (0.12)	0.13 (0.09)	0.16 (0.09)	0.49*** (0.11)	- 0.16** (0.02)	- 0.28 (0.16)	0.32** (0.10)	0.16 (0.09)	0.00 (0.09)	- 0.14 (0.08)	
Low-income ^a	0.63*** (0.14)	0.24** (0.09)	0.01 (0.07)	- 0.38*** (0.08)	0.07 (0.10)	- 0.09** (0.02)	0.24 (0.13)	0.16 (0.08)	- 0.07 (0.08)	0.11 (0.08)	- 0.04 (0.07)	

Table 4 (continued)

	Dependent variables										
	Initial Intent to Study Abroad					First Year College Experience					
	No chance	Very little chance	Some chance	Very good chance	Language credits earned	College HS	Cohort 2008	Cohort 2009	Cohort 2010		
Logit	Logit	Logit	Logit	Logit	OLS	Logit	Logit	Logit	Logit		
Medium-income ^a	0.37** (0.12)	0.28*** (0.07)	0.00 (0.06)	-0.32*** (0.06)	0.18* (0.08)	-0.03* (0.01)	0.29** (0.11)	-0.01 (0.06)	0.03 (0.06)	0.04 (0.06)	-0.06 (0.05)
Behavioral control beliefs											
ACT score	-0.06*** (0.02)	-0.01 (0.01)	0.02** (0.01)	0.00 (0.01)	0.07*** (0.01)	0.05** (0.00)	-0.09*** (0.02)	-0.04*** (0.01)	-0.03*** (0.01)	0.00 (0.01)	0.03*** (0.01)
Negotiating social differences scale	-0.05 (0.09)	-0.12* (0.06)	-0.13** (0.05)	0.23*** (0.05)	0.07 (0.07)	-0.03** (0.01)	0.24** (0.08)	0.21*** (0.05)	0.07 (0.05)	-0.02 (0.05)	-0.04 (0.04)
Control of study/career plans scale	-0.36*** (0.07)	-0.24*** (0.04)	0.00 (0.03)	0.26*** (0.03)	0.06 (0.04)	0.02** (0.01)	0.70*** (0.10)	0.64*** (0.04)	-0.01 (0.03)	0.03 (0.03)	-0.02 (0.03)
Need to work scale	-0.19** (0.07)	0.08 (0.04)	0.10** (0.04)	-0.11** (0.04)	0.11* (0.05)	-0.03** (0.01)	0.09 (0.07)	-0.18*** (0.04)	0.02 (0.04)	0.05 (0.04)	-0.06 (0.03)
F-statistic						116.44	45.43				
R-square						0.17	0.07				
-2 log likelihood	-1559.5	-3763.7	-5179.2	-4697.21	-3041.38			-4509.77	-4748.28	-4873.69	-5544.25
LR chi2	527.33	679.42	93.75	1492.74	291.74			916.94	46.12	13.75	64.21
Pseudo-R2	0.14	0.08	0.01	0.14	0.05			0.09	0.00	0.00	0.01
Number of observations	8121	8121	8121	8121	8133	133	8132	8133	8133	8133	8133

*p < 0.05, **p < 0.01, ***p < 0.001

Standard errors in parentheses

^a Reference group is high-income group

Table 5 Pre-enrollment characteristics and initial intentions to Study Abroad (IISA) on First Year College Experiences

	Dependent variables					
	Joined learning community		Language credits earned		College HS	Cohort 2010
	Logit	OLS	OLS	OLS	Logit	Logit
Attitudes						
Curricular plans scale	0.35 ^{***} (0.08)	0.06 ^{***} (0.01)	0.31 ^{**} (0.09)	0.53 ^{***} (0.05)	0.02 (0.05)	0.02 (0.05)
Plans for diverse interactions	0.07 (0.10)	0.00 (0.01)	0.01 (0.12)	-0.18 ^{**} (0.07)	0.07 (0.07)	0.00 (0.07)
Importance of understanding other cultures	0.23 ^{**} (0.08)	0.06 ^{***} (0.01)	0.56 ^{***} (0.10)	0.17 ^{**} (0.06)	0.09 (0.06)	0.03 (0.06)
High school volunteering	0.25 ^{**} (0.07)	0.00 (0.01)	-0.13 (0.10)	-0.05 (0.06)	-0.10 (0.06)	-0.04 (0.06)
High school diversity interactions	-0.02 (0.08)	0.00 (0.01)	-0.07 (0.10)	-0.07 (0.06)	-0.11 (0.06)	-0.08 (0.06)
High school community service	-0.08 (0.09)	0.00 (0.02)	0.00 (0.13)	0.02 (0.08)	-0.22 ^{**} (0.08)	-0.09 (0.07)
Subjective norms						
Male	-0.44 ^{***} (0.07)	-0.10 ^{***} (0.01)	-0.94 ^{***} (0.09)	-0.65 ^{***} (0.06)	-0.05 (0.05)	0.03 (0.05)
Underrepresented minority	0.47 ^{***} (0.11)	-0.16 ^{***} (0.02)	-0.31 [*] (0.16)	0.31 ^{**} (0.10)	0.16 (0.09)	0.01 (0.09)
Low-income ^a	0.11 (0.10)	-0.09 ^{***} (0.02)	0.30 [*] (0.13)	0.17 [*] (0.08)	-0.08 (0.08)	0.10 (0.08)
Medium-income ^a	0.21 ^{**} (0.08)	-0.03 [*] (0.01)	0.34 ^{***} (0.11)	0.00 (0.06)	0.01 (0.06)	0.03 (0.06)

Table 5 (continued)

		Dependent variables								
		Joined learning community		Language credits earned		College HS		Cohort 2010		
		Logit	OLS	Logit	OLS	Logit	OLS	Logit	Logit	
Behavioral control beliefs										
ACT score		0.07*** (0.01)	0.05*** (0.00)	-0.09*** (0.02)	-0.04*** (0.01)	-0.03*** (0.01)	0.00 (0.01)	0.03*** (0.01)	0.03** (0.01)	
Negotiating social differences scale		0.05 (0.07)	-0.03** (0.01)	0.21* (0.08)	0.20*** (0.05)	0.07 (0.05)	-0.01 (0.05)	-0.05 (0.04)	-0.05 (0.04)	
Control of study and career plans scale		0.03 (0.04)	0.02** (0.01)	0.64*** (0.06)	0.63*** (0.04)	0.00 (0.03)	0.04 (0.03)	-0.03 (0.03)	-0.03 (0.03)	
Need to work scale		0.12* (0.05)	-0.03*** (0.01)	0.11 (0.07)	-0.18*** (0.07)	0.02 (0.05)	0.05 (0.04)	-0.06 (0.03)	-0.06 (0.03)	
Initial Intent to Study Abroad										
Very little chance ^b		0.37 (0.23)	0.07** (0.02)	0.17 (0.20)	0.00 (0.11)	0.03 (0.12)	-0.08 (0.11)	0.04 (0.11)	0.04 (0.11)	
Some chance ^b		0.62** (0.22)	0.08** (0.02)	0.31 (0.20)	-0.03 (0.11)	0.00 (0.11)	-0.24 (0.11)	0.21* (0.10)	0.21* (0.10)	
Very good chance ^b		0.90*** (0.22)	0.08** (0.02)	1.01*** (0.20)	0.19 (0.11)	-0.14 (0.12)	-0.23 (0.11)	0.31** (0.11)	0.31** (0.11)	
F-statistic			96.55	41.56						
R-square			0.17	0.08						
- 2 log likelihood		- 3018.28			- 4498.61	- 4736.84	- 4862.61	- 5526.54		

Table 5 (continued)

	Dependent variables						
	Joined learning community	GPA	Language credits earned	College HS	Cohort 2008	Cohort 2009	Cohort 2010
	Logit	OLS	OLS	Logit	Logit	Logit	Logit
LR chi2	330.77			920.55	53.52	22.33	83.30
Pseudo-R2	0.05			0.09	0.01	0.00	0.01
Number of observations	8121	8121	8120	8121	8121	8121	8121

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Standard errors in parentheses

^a Reference group is high-income group

^b Reference group is no chance group

Table 6 Blocked logistic regression predicting Study Abroad Participation (SAP)

	Block 1 Pre-enrollment characteristics	Block 2 Initial Intent to Study Abroad	Block 3 First Year Col- lege Experi- ences
Attitudes			
Cocurricular plans scale	0.46 ^{***} (0.06)	0.24 ^{***} (0.07)	0.18 ^{**} (0.07)
Plans for diverse interactions	− 0.09 (0.08)	− 0.13 (0.09)	− 0.13 (0.09)
Importance of understanding other cultures	0.31 ^{***} (0.07)	0.07 (0.07)	0.01 (0.07)
High school volunteering	− 0.17 [*] (0.07)	− 0.15 [*] (0.07)	− 0.16 [*] (0.07)
High school diversity interactions	− 0.14 [*] (0.07)	− 0.13 (0.07)	− 0.13 (0.07)
High school community service	− 0.08 (0.09)	− 0.10 (0.09)	− 0.12 (0.09)
Subjective norms			
Male	− 0.79 ^{***} (0.07)	− 0.56 ^{***} (0.07)	− 0.47 ^{***} (0.07)
Underrepresented minority	0.10 (0.11)	0.05 (0.11)	0.19 (0.11)
Low-income ^a	− 0.30 ^{**} (0.10)	− 0.18 (0.10)	− 0.19 (0.10)
Medium-income ^a	− 0.34 ^{***} (0.08)	− 0.26 ^{**} (0.08)	− 0.28 ^{**} (0.08)
Behavioral control beliefs			
ACT score	0.01 (0.01)	0.00 (0.01)	− 0.03 [*] (0.01)
Negotiating social differences scale	0.13 [*] (0.06)	0.09 (0.06)	0.10 (0.06)
Control of study/career plans scale	0.36 ^{***} (0.04)	0.29 ^{***} (0.04)	0.26 ^{***} (0.04)
Need to work scale	− 0.26 ^{***} (0.04)	− 0.25 ^{***} (0.05)	− 0.24 ^{***} (0.05)
Initial Intent to Study Abroad			
Very little chance ^b		0.78 ^{**} (0.29)	0.74 [*] (0.29)
Some chance ^b		1.43 ^{***} (0.28)	1.36 ^{***} (0.28)
Very good chance ^b		2.31 ^{***} (0.28)	2.21 ^{***} (0.28)
First Year College Experiences			
Joined learning community			0.16 (0.08)

Table 6 (continued)

	Block 1 Pre-enrollment characteristics	Block 2 Initial Intent to Study Abroad	Block 3 First Year Col- lege Experi- ences
GPA			0.57*** (0.08)
Language credits earned			0.04*** (0.01)
College of HS			0.04 (0.09)
Cohort 2008 ^c			– 0.56*** (0.08)
Cohort 2009 ^c			– 0.17* (0.07)
– 2 log likelihood	– 3620.30	– 3446.33	– 3364.44
LR chi2	515.19	863.14	1026.92
Pseudo-R2	0.07	0.11	0.13
AIC	7270.60	6928.65	6776.88
BIC	7375.64	7054.69	6944.93
Number of observations	8120	8120	8120

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Standard errors in parentheses

^a Reference group is high-income group

^b Reference group is no chance group

^c Reference group is cohort 2010

Appendix 3: Structural Paths Included in the GSEM Analysis

See Figs. 2, 3 and 4.

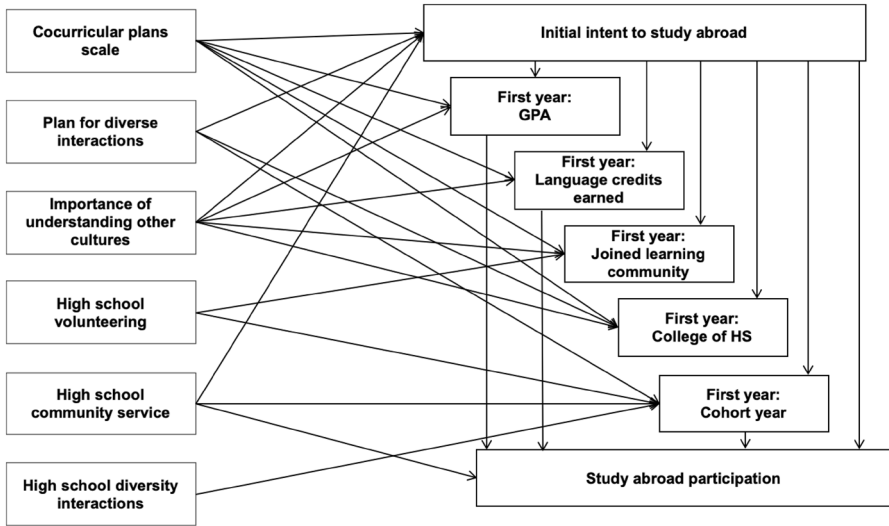


Fig. 2 Attitudes

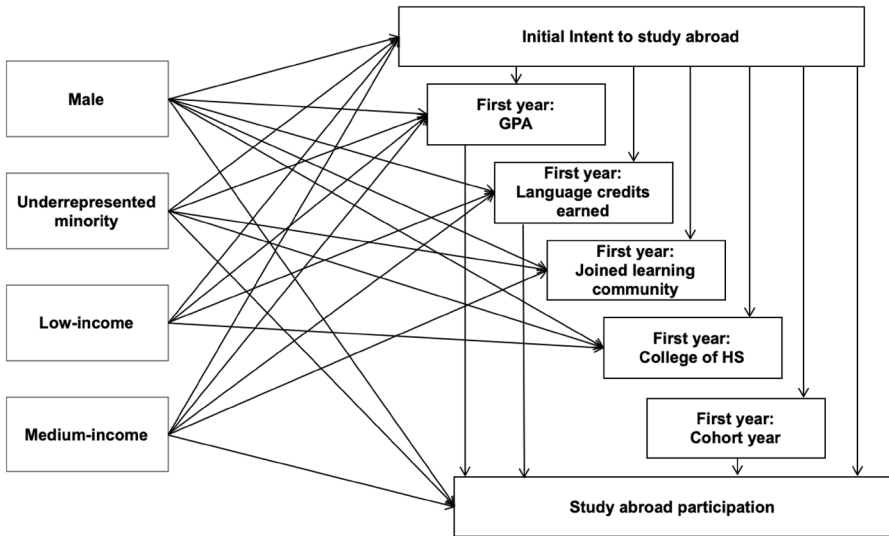


Fig. 3 Subjective norms

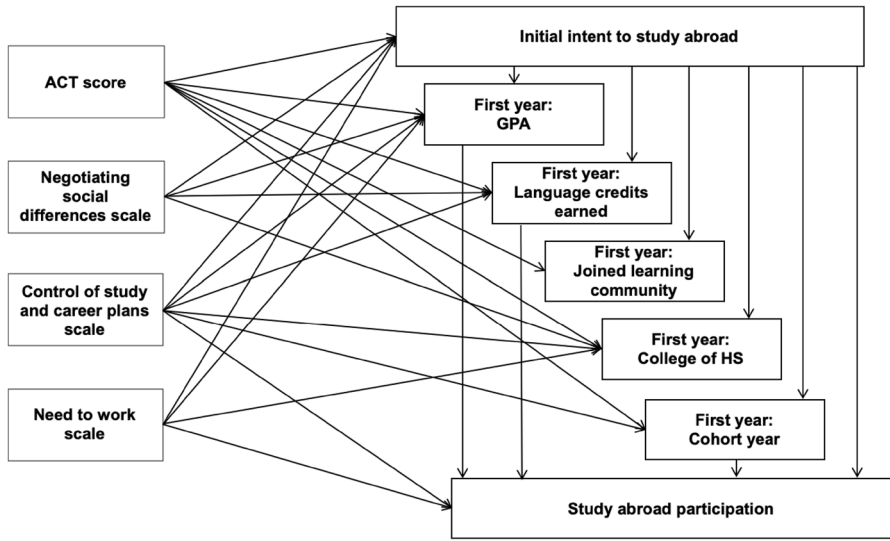


Fig. 4 Behavioral control beliefs

Appendix 4. Pairwise Correlations Among Variables

Variables	1	2	3	4	5	6	7	8
1 Study abroad participation	1							
2 Male	-0.1656*	1						
3 Underrepresented minority	-0.0034	-0.0511*	1					
4 Low-income	-0.0353*	-0.0603*	0.2124*	1				
5 Medium-income	-0.0595*	0.0009	0.0165	-0.2397*	1			
6 High-income	0.0782*	0.0425*	-0.1668*	-0.5032*	-0.7184*	1		
7 ACT score	0.0058	0.1674*	-0.3416*	-0.2277*	-0.0569*	0.2139*	1	
8 Negotiating social differences scale	0.0385*	0.0323*	0.0896*	0.0402*	-0.0438*	0.0101	0.0083	1
9 Control of study and career plans scale	0.1258*	-0.0638*	-0.1047*	-0.0842*	-0.0216*	0.0798*	0.0943*	-0.0187
10 Cocurricular plans scale	0.1214*	-0.2299*	0.0429*	0.0145	-0.0202	0.0075	0.0161	0.2000*
11 Plans for diverse inter-actions	0.0296*	-0.0840*	0.0531*	-0.0089	-0.0073	0.0128	0.0385*	0.2124*
12 Importance of understanding other cultures	0.1034*	-0.1677*	0.0579*	0.0192	-0.0155	0	-0.0205	0.2720*

Variables	1	2	3	4	5	6	7	8
13 Need to work scale	-0.0634*	-0.0625*	0.0463*	0.1603*	0.1786*	-0.2741*	-0.0532*	0.0052
14 High school volunteering	0.0136	-0.1784*	0.0366*	0.0285*	-0.0027	-0.018	-0.0299*	0.1035*
15 High school diversity interactions	-0.0145	-0.001	0.0944*	-0.0097	-0.0191	0.0240*	0.0215*	0.2008*
16 High school community service	0.0015	-0.0736*	0.0641*	0.0483*	-0.0023	-0.0325*	-0.1274*	0.0802*
17 IISA: no chance	-0.0991*	0.1005*	0.0128	0.0467*	0.0276*	-0.0582*	-0.0555*	-0.0548*
18 IISA: very little chance	-0.1584*	0.1801*	-0.0366*	0.0106	0.0487*	-0.0510*	0.0051	-0.0737*
19 IISA: some chance	-0.0984*	0.0718*	-0.005	-0.002	0.0055	-0.0034	0.0383*	-0.0407*
20 IISA: very high chance	0.2724*	-0.2650*	0.0288*	-0.0292*	-0.0588*	0.0733*	-0.015	0.1259*
21 Joined learning community	0.0747*	-0.1122*	0.0411*	0.0077	0.0251*	-0.0278*	0.0327*	0.0465*
22 GPA	0.1225*	-0.0667*	-0.2064*	-0.1528*	-0.0344*	0.1401*	0.3454*	-0.0245*
23 Language credits earned	0.1519*	-0.1811*	0.0067	0.0258*	0.0229*	-0.0389*	-0.0706*	0.0485*
24 College of enrollment: humanities and sciences	0.1120*	-0.1939*	0.0518*	0.0382*	-0.0270*	-0.0033	-0.0745*	0.0637*
25 Cohort 2008	-0.0681*	0.0069	0.0338*	-0.0133	0.0037	0.0062	-0.0363*	0.0158
26 Cohort 2009	-0.0017	0.0027	-0.006	0.0175	0.0154	-0.0262*	-0.0025	-0.0041
27 Cohort 2010	0.0648*	-0.0089	-0.0256*	-0.0035	-0.0173	0.0179	0.0358*	-0.0109

9	10	11	12	13	14	15	16	17	18	19	20	21	
9	1												
10	0.0722*	1											
11	0.0474*	0.2562*	1										
12	0.0931*	0.2973*	0.1933*	1									
13	0.0031	0.1562*	0.0630*	0.0570*	1								
14	-0.0359*	0.3179*	0.0792*	0.1231*	0.0489*	1							
15	-0.0212*	0.0989*	0.2988*	0.1044*	-0.0038	0.1116*	1						
16	-0.0220*	0.1339*	0.0079	0.0662*	0.0336*	0.2734*	0.0644*	1					
17	-0.0836*	-0.2137*	-0.0629*	-0.1415*	-0.0469*	-0.0479*	-0.0250*	-0.0037	1				
18	-0.0992*	-0.1836*	-0.0707*	-0.1930*	-0.0049	-0.0487*	-0.0201	-0.0229*	-0.1238*	1			
19	-0.0109	-0.0205*	-0.0462*	-0.0490*	0.0275*	-0.0334*	-0.0201	-0.0351*	-0.1774*	-0.3640*	1		
20	0.1316*	0.2718*	0.1327*	0.2726*	-0.0004	0.0951*	0.0478*	0.0545*	-0.1996*	-0.4095*	-0.5870*	1	
21	0.0297*	0.1263*	0.0569*	0.0950*	0.0442*	0.0860*	0.0212*	0.0153	-0.0582*	-0.0715*	-0.0225*	0.1080*	1
22													25
22	1												26
23	0.0994*	1											27
24	0.0702*	0.4682*	1										
25	0.0224*	-0.0078	-0.0078	-0.0194	1								
26	-0.0154	0.0065	0.0065	0.0035	0.0035	-0.4035*	1						
27	-0.0069	0.0014	0.0014	0.0149	0.0149	-0.5657*	-0.5262*	1					

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