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GEORGE WARREN BROWN SCHOOL OF SOCIAL WORK

Perceived Impacts of International Service on Volunteers

Interim Results from a Quasi-Experimental Study

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Perceived Impacts of International Service on Volunteers: Interim Results from a Quasi-Experimental Study

There is growing interest in the potential of international service to foster international understanding between peoples and nations and to promote global citizenship and intercultural cooperation, and international service may be growing in prevalence worldwide. Despite the scale of international service, its impacts are not well understood. Although there is a growing body of descriptive evidence about the various models and intended outcomes of international service, the overwhelming majority of research is based on case and cross-sectional studies, which do not permit conclusions about the impacts of international service.

This paper reports on a quasi-experimental study that assesses perceptions of the impact of service on international volunteers, matched to a comparison group that did not volunteer internationally during the same study period. The results of this quasi-experimental study suggest that international volunteer service has a positive impact on international volunteers' perceived international awareness, international social capital, and international career intentions. However, compared to the non-participants, results suggest that international service does not have an impact on volunteers' perceived intercultural relations. In addition, several variables are found to influence specific outcomes.

Key words: *international service; international volunteering; impact study; quasi-experimental study; intercultural relations; international awareness; international social capital*

Prevalence and Potential of International Volunteer Service

International volunteer service is defined as an organized period of engagement and contribution to society by individuals who volunteer across an international border.[1] There is growing interest in the potential of international service to foster international understanding between peoples and nations and to promote global citizenship and intercultural cooperation.[2-3] Studies suggest that international service develops skills, mindsets, behaviors and networks that prepare volunteers for living and working in a knowledge-based global economy.[4-5] Many believe that even short-term experiences abroad can begin to prepare participants for longer-term engagement and future international service.[6-7]

International service may be growing in prevalence worldwide.[8-9] In the United States, more than one million Americans reported volunteering abroad in 2008.[10] Despite the scale of international service, its impacts are not well understood.[11-13] Although there is a growing body of descriptive evidence about the various models and intended outcomes of international service, the overwhelming majority of research is based on case and cross-sectional studies, which do not permit conclusions about the impacts of international service.[9] Scholars and practitioners in the field have called for rigorous research that documents impacts.[9,13-15]

The interim results of the quasi-experimental study presented in this report are among the first known impact analyses on international service. This study assesses perceptions of the impact of

service on international volunteers, matched to a comparison group that did not volunteer internationally during the same study period. (See Figure A.1 in Appendix A.) This report examines changes in international volunteers' perceptions (treatment group) between two time periods: before leaving to volunteer abroad (baseline) and after volunteering abroad (post-test). Those who did not volunteer abroad during the study period (comparison group) also were surveyed at the same two time periods. Future reports will focus on longitudinal data from a third time period (one year post-test), as well as the perceived impacts of international service by host organizations and beneficiaries. (See Figure A.2 in Appendix A.)

Hypothesized Impacts of International Volunteer Service on Volunteers

Following a comprehensive review of existing research on the possible effects of international volunteer service, Margaret Sherrard Sherraden and colleagues presented a conceptual model to test outcomes on volunteers, host communities, and sending communities.[1] The research reported here begins testing this model by assessing the volunteers' perceptions of the impact of international service on their international awareness, intercultural relations, international social capital and international career intentions. Below, we provide a brief description of these outcome categories, and how international service may be related to them. We explore these measures in greater detail in other reports.[16]

International awareness measures whether people think about problems of nations outside their own, as well as how they think these problems might be addressed. It specifically assesses their interests in issues related to global poverty and development.[17] International experiences are often promoted to enhance greater interest in and knowledge and understanding of social, economic and political issues in a global context.[18] This rings true for many international volunteers who report enhanced awareness and understanding of other countries, minority issues, development challenges, immigration and inequality,[19-22] as well as an enhanced global perspective overall.[23]

Intercultural relations measures respondents' relationships with people of other cultures and ethnic or racial backgrounds, including the respondents' interests in developing relationships with people from different cultures and backgrounds.[24-25] International service may affect a volunteer's comfort level with those in other cultures, along with their interest in and friendships with those of other cultural or ethnic backgrounds. As international volunteers live outside of their country and culture, they may begin learning another language and may begin interacting closely with people who are very different from themselves. Research suggests that international volunteers who interact with people who are different may increase interest in and understanding of other cultures.[26-29] These relations may be with individuals who live abroad or with individuals of other cultures who live in the volunteers' country of origin.

International social capital refers to the extent of respondents' personal and organizational contacts who live in other countries, including the level of communication with these people. It further assesses whether respondents use these contacts to link people or organizations to resources and to advocate for certain issues. In this sense, the connections or "capital" can be used to coordinate action or generate additional resources.[30-31] According to previous studies, volunteers have used these contacts to coordinate humanitarian aid projects, exchanges, research trips, internships or return trips to the host country.[32] These contacts may also be used to facilitate future employment opportunities or to leverage resources for host communities.[4,33]

International career intentions address respondents' intentions to work in a career related to international or social and economic development issues. International service often provides opportunities to broaden horizons and explore career directions.[12,34] Previous studies on international service indicate that volunteering may lead to educational or occupational changes toward careers that are frequently focused on international or development issues.[35-38]

While these outcome categories are not behavioral measures, they gauge volunteers' perceptions of, and interest in, international issues. These interests may eventually develop into internationally-oriented knowledge, skills and behaviors. Measuring outcomes over time will help assess whether volunteers' interests evolve into behaviors that demonstrate inclusive ways of perceiving and living in a global society. This is important because learning theories suggest that it takes time for people to process intercultural experiences, a process that proceeds along a continuum of increasingly complex ways of interpreting cultural differences. This learning, as described in research on intercultural experience, occurs through a series of stages that begins with a basic awareness of cultural differences, followed by a dualistic ingroup-outgroup mindset, and later a recognition of the commonalities in all cultures.[39] In advanced stages of intercultural understanding, people begin to see their own culture as one of many equally valuable ways of thinking and acting.[40]

The intercultural learning process can also be applied to developing awareness and knowledge about international development. Volunteers exposed to global inequality for the first time believe naively that solutions are simple. This initial understanding, however, may progress to a deeper appreciation for the complexities of the issue, including historical, cultural, political, social and economic determinants, which may evolve into nuanced awareness of power relations and the challenges for development and progress. Volunteers who serve for longer periods may be more likely to report perspectives consistent with advanced stages of intercultural understanding and awareness and knowledge about international development.

Most international volunteer service programs claim these internationally-related outcomes. The aim of the overall longitudinal impact study is to assess the degree to which particular program features may distinctly influence outcome achievement. In this interim report, however, we examine categorically whether international service can be attributed to perceived changes in these internationally-related volunteer outcomes. In other words, when compared to a counterfactual group of individuals who do not volunteer abroad during the study time period, do international volunteers report statistically significant increases in international awareness, intercultural relations, international social capital and international career intentions?

Assessing the Perceived Impacts on Volunteers

Overall Research Design

The overall research study on the "Impacts of International Volunteer Service" assesses the impacts of international service on volunteers, host organizations and beneficiaries. Future reports will present results from interviews and focus groups with a sample of international volunteer host organizations and a matched sample of organizations and beneficiaries that do not host international volunteers (2008 to 2009). (See Figure A.2 in Appendix A.)

The current study, which examines the impact of international service on volunteers, uses a longitudinal, quasi-experimental design (2008 to 2011). The study uses the International Volunteer Impacts Survey (IVIS) to assess volunteers' perceptions of impact at three time periods (baseline, post-test and one year post-test).[16] (See Figure A.1 in Appendix A.) A quasi-experimental design allows comparison of a treatment group (international volunteer participants) to a counterfactual comparison group (non-international volunteer participants). Using samples for each group that are matched on key characteristics, this quasi-experimental design can test what the impacts would have been had the volunteers not served internationally.

Although an experiment with a control group would be preferable, it is not feasible because respondents cannot be randomized into service and non-service conditions. In other words, there is no sample at this time from which to draw randomized treatment and control groups that would generate an adequate number of international volunteers. To most closely match international volunteers, we selected a comparison group comprised of individuals who inquired about or initially enrolled in the same international service programs, but canceled prior to participation. This design is similar to the longitudinal study of the impact of AmeriCorps national service.[41]

This is an interim report from the volunteer impact study. It includes data assessing perceived change in international volunteers' perspectives before service (baseline) and immediately after service (post-test). A one-year post-test survey will be implemented in 2010 and 2011 to follow changes in volunteers' interests and behaviors in internationally-related issues one year later.

Participating Programs

All respondents were from two different volunteer programs based in the United States: a short-term non-professional program (μ = 3.8 weeks) and a long-term professional service program (μ = 46.2 weeks). The short-term program has facilitated placements of over 25,000 multinational participants in 10 countries since 1995. Volunteers typically serve in host community social service agencies, providing direct care to individuals in childcare centers, homes for the elderly, schools, health clinics, centers for people with disabilities or other community organizations. Most volunteers come from the United States, although some come from other English-speaking countries including the U.K., Canada, and Australia. The majority of volunteers are age 25 or younger, although they range from ages 18 to 90. Volunteers are mostly female (79 percent), and more than 40 percent are students. Volunteers typically live in urban settings and board together with other volunteers.

The long-term program has placed more than 5,000 volunteers in 22 countries since 1986. It provides volunteer opportunities through two placement programs, which place over 350 year-long volunteers and 125 summer volunteers annually. The total months of service by all volunteers since 1986 exceed 50,000. While 70 percent of the volunteers serve in "year programs" (10 to 12 months), they provide more than 94 percent of the total time of volunteer service between the two programs. The remainder serve in so-called "summer programs" (two to five months). All of the long-term volunteers included in this study served for at least four months, with 89 percent serving for 10 months or longer. The long-term program has a competitive selection process. Volunteers, who must have a Bachelor's degree, teach in a variety of educational settings including elementary, high school, college and adult education centers. The majority of volunteers come from the United States, and a handful come from other English-speaking countries. The majority of volunteers are in their

mid-twenties and 71 percent are female. Most volunteers live in rural settings with host families, although a significant number live in school-provided housing.

Sample Selection

The IVIS was administered electronically to volunteers and comparison non-participants across the two programs. In the summer of 2008, researchers randomly sampled 250 volunteers from the short-term program. The comparison group for the short-term program was oversampled (random sampling without replacement) following a poor initial response rate from this group (n = 500). Due to a smaller number of participants in the longer-term program, all volunteers serving in this program from July to December 2008 were included in the sampling frame (n=227), as were comparison non-participants (n=237).

In total, 463 volunteers and 724 comparison non-participants received the IVIS baseline survey. Of these, 325 volunteers and 366 non-participants responded, resulting in a response rate of 70 and 51 percent, respectively. Among respondents completing the baseline survey, 221 volunteers and 145 non-participants completed a post-test that was administered one week after they returned from service, resulting in response rates of 68 percent and 40 percent respectively. (See Table 1 for characteristics of the sample.) Supporting comparability, there are no statistically significant differences across key characteristics between sample groups.

Table 1: Comparison of Respondent Characteristics by Group [a] (n = 290)

	Treatment Group (International Volunteer Participants) n = 145		Comparison Group (Non-International Volunteer Participants) n = 145	
Demographic Category	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Gender				
Female	119	82%	121	83%
Male	26	18%	24	17%
Marital status				
Married	15	10%	18	12%
Not married	130	90%	127	88%
Race				
White or Caucasian	116	80%	111	77%
Other	29	20%	34	23%
Education				
Less than Bachelors degree	40	28%	47	32%
Bachelors degree or higher	105	72%	98	68%
Individual income				
Less than $20,000	76	52%	83	57%
$20,000 or more	69	48%	62	43%
	Mean	***sd***	**Mean**	***sd***
Age at baseline	27.2	10.1	27.5	11.0
Previous int'l experience (weeks)	64.6	216.2	52.8	110.3

[a] There are no statistically significant differences between the treatment and comparison group at a = .05.

Instrumentation

The International Volunteering Impacts Survey (IVIS) is based on previous research assessing the possible impacts on volunteers of volunteering overall and of international service specifically. After categorizing the main volunteer outcomes studied, we reviewed nine existing instruments used to assess identified outcomes. We drew most items from the Federation of the Experiment in International Living Study,[29] the Longitudinal Study of Service in AmeriCorps,[42] and the Inter-University Consortium for Political and Social Research General Social Survey.[43] From these surveys, we used relevant items that measure the identified concepts. In cases where we could not locate relevant items, we modified or added items to measure the main concepts.

A series of steps were then implemented to test and refine the instrument, striving for validity, reliability, and parsimony.[16] (See Figure A.3 in Appendix A.) In the first step, a survey of 250 items was reviewed for face validity by international service researchers, sector leaders and former international volunteers (n=46). Next, we progressively implemented more parsimonious surveys with international volunteer alumni, prospective volunteers and non-international volunteers. At each phase, we used exploratory factor analysis with quartimax rotation to determine the main outcome categories and the items that best measured them, reducing the final survey to 48 items. Please refer to the full report for the results of the measurement development process.[16]

Each major outcome area reported in this study is composed of multiple survey items from the IVIS.[16] The individual items do not measure respondents' objective levels of knowledge or skill in an outcome category. A given outcome category is an additive variable across the respective items, which measure respondents' perceptions regarding their interests, intentions, and behaviors across a scale of 1 to 7 (strongly disagree to strongly agree). The alpha levels for each outcome category are above .70, indicating that by conventional measurement standards the respective items reliably measure each concept; responses to each item within each concept are highly correlated, and all responses tend in the same direction.[44] (See Table A.1 in Appendix A.)

Analysis

Analysis methods aim to identify differences in international perspectives among international volunteers (treatment groups) compared to non-participants (comparison groups). Non-participants were matched to volunteers by the sending organization and by key characteristics of the volunteers that are known to affect the volunteer process and outcomes, including demographics and motivations for enrolling.[33,45-46] During the matching process, we also controlled for previous international and volunteer experiences.

Bivariate analyses examined differences between baseline and post-test for the treatment and comparison groups. (See Table 2 for averages by group and bivariate analyses.) Generalized linear mixed regression modeling was used to determine significant differences in outcome areas between treatment and comparison groups over time. The key independent variables were time (baseline or post-test), treatment condition (volunteer or non-participant) and the interaction between time and treatment condition. Appendix B at the end of this report presents a more detailed description of the analytic methods used to generate impact estimates for this study.

Table 2: Descriptive Statistics by Outcome Category and Respondent Group (n = 145 per group)

	Time	mean	*sd*	*SEM*	*t* [a]	*p*
International Awareness						
Volunteers	Baseline	4.96	1.08	.09	2.60	.01
	Post-test	5.12	.96	.08		
Non-participants	Baseline	4.97	1.09	.09	-.06	.95
	Post-test	4.97	1.14	.09		
Intercultural Relations						
Volunteers	Baseline	6.00	.90	.07	2.51	.01
	Post-test	6.13	.79	.07		
Non-participants	Baseline	5.96	1.01	.08	.57	.57
	Post-test	6.00	.93	.08		
International Social Capital						
Volunteers	Baseline	3.44	1.48	.12	8.96	.00
	Post-test	4.30	1.34	.11		
Non-participants	Baseline	3.68	1.55	.13	5.90	.00
	Post-test	4.24	1.43	.12		
International Career Intentions						
Volunteers	Baseline	4.26	1.64	.14	3.07	.00
	Post-test	4.66	1.90	.16		
Non-participants	Baseline	4.58	1.60	.13	.50	.62
	Post-test	4.52	1.90	.16		

[a] df = 144

Perceived Changes in Volunteers' International Interests

International volunteers report statistically significant increases between baseline and post-test in three of the four outcomes. Volunteers in the treatment group are more likely than those in the comparison group to increase their perceptions of international awareness, international social capital, and internationally-related career intentions. (See Table 3 for results of the generalized linear mixed regression models.)

Table 3: Generalized Linear Mixed Regression Models for Treatment and Comparison Groups (n = 290)

	International Awareness			**Intercultural Relations**			**International Social Capital**			**International Career Intentions**		
	Est	*SE*	*p*	*Est*	*SE*	*p*	*Est*	*SE*	*p*	*Est*	*SE*	*p*
Intercept	5.42	1.15	.00	8.32	.92	.00	3.77	1.48	.01	10.56	1.68	.00
Test time[a]	**.16***	.07	.01	**.14***	.06	.01	**.87***	.10	.00	**.40***	.13	.00
Condition[b]	-.01	.13	.94	-.02	.11	.87	.21	.17	.24	.24	.21	.25
Time by condition	**-.16***	.10	.05	-.10	.09	.13	**-.31***	.14	.02	**-.45***	.19	.01
Program (long-term)	.00	.14	.97	.16	.11	.14	**.49***	.18	.01	.10	.20	.63
Race (White)	-.04	.15	.77	**-.32***	.12	.01	.05	.20	.82	-.15	.24	.52
Sex (male)	-.18	.17	.27	-.21	.14	.13	.04	.22	.86	.04	.24	.87
Age-log[c]	-.21	.38	.59	**-.76***	.31	.01	-.35	.49	.48	**-1.90***	.56	.00
Education[d]	.21	.15	.16	.05	.12	.69	.28	.20	.16	.07	.23	.76
Occupational exp.[e]	.09	.07	.22	**.16***	.06	.01	.03	.10	.76	.02	.11	.84
Marital status[f]	-.03	.20	.90	-.23	.16	.16	.20	.26	.46	-.14	.30	.65
Income[g]	-.03	.02	.26	.01	.02	.62	.02	.03	.52	-.06	.04	.10
Int'l experience[h]	**.03***	.01	.01	**.02***	.01	.04	**.04***	.01	.01	.03	.02	.07
Time covariance	.74	.03	.00	.36	.43	.40	.65	.04	.00	.52	.17	.00
Intercept variance[i]	.00	.00	--	.17	.32	.60	.00	.00	--	-.84	.92	.36
-2 log likelihood	1421.35			1272.09			1757.23			1975.75		

*p < .05, probability statistics for the time variable are one-tailed.

[a] Time coefficient predicts the increase from baseline to post-test for volunteers.

[b] Condition coefficient predicts the difference in the outcomes at baseline for non-volunteers compared to volunteers.

[c] To meet the assumptions of normality, age was transformed by taking the natural log of each response.

[d] Education coefficient estimates the effect of Bachelor's degree or higher compared to no Bachelors degree.

[e] To meet the assumptions of normality, this variable was transformed by taking the square root of each response. The occupational experience coefficient estimates the effect of the square root of occupational experience measured in years.

[f] Marital status coefficient estimates the effect of married, compared to all other marital situations (single, divorced, widowed, separated, or in domestic partnership).

[g] Income coefficient estimates the effect of individual income, using a 13-level variable in $5000-$10,000 increments.

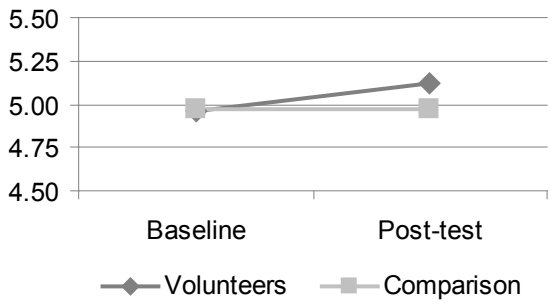
[h] International experiences estimates the total weeks participants have ever spent overseas (for whatever reason--living, working, studying, volunteering, etc.). To meet the assumptions of normality, number of weeks was transformed by taking the square root of each response.

[i] Intercept coefficient includes the logit of the propensity score as a random effect within subjects.

International Awareness

At baseline, volunteers and non-participants do not report significant differences in their perceived level of international awareness. At post-test, however, volunteers report a significantly higher level of international awareness while non-participants report no difference. Consequently, volunteers' perceived international awareness is significantly higher than the non-participants over the study period. (See Figure 1.) The duration of previous international experience is also significantly associated with international awareness; each additional week (square root) of previous international experience is associated with a .03 point increase on the scale used to measure perceived international awareness.

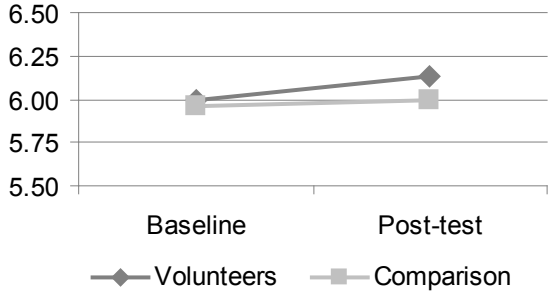
Figure 1: Perceived International Awareness (N = 145 per group)



Intercultural Relations

At baseline, volunteers and non-participants do not report significant differences in their perceived intercultural relations. At post-test, volunteers report a significantly higher score, while non-participants report a non-significantly higher score. However, because both groups' scores on intercultural relations increased, there is no statistically significant difference over the study period. (See Figure 2.) As for predictors of intercultural relations, Caucasian respondents rate themselves .32 points lower on intercultural relations on the baseline test. Older volunteers also rate lower; the log of age in years is associated with a .76 decrease on the scale used to measure intercultural relations. The square root of years of occupational experience is also associated with a .18 point increase in intercultural relations; each additional week (square root) of previous international experience is associated with a .02 point increase in perceived intercultural relations.

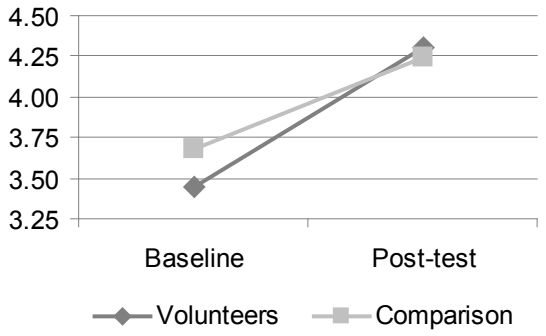
Figure 2: Perceived Intercultural Relations (N = 145 per group)



International Social Capital

At baseline, volunteers and non-participants do not report significant differences in their perceived international social capital. At post-test, both volunteers and non-participants report significantly higher international social capital; however, the volunteers' increase in international social capital is significantly higher than the non-participants' increase. (See Figure 3.) Volunteers from the long-term volunteer program rate themselves .49 points higher on the scale used to measure international social capital. Likewise, each additional week (square root) of previous international experience is associated with a .04 point increase in perceived international social capital.

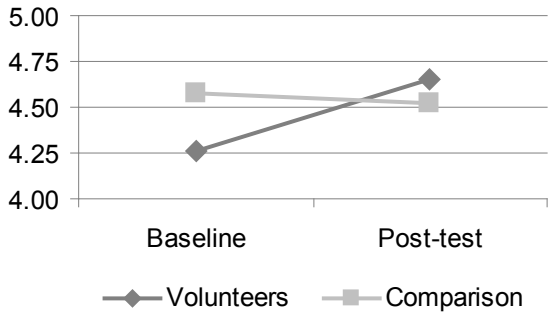
Figure 3: Perceived International Social Capital (N = 145 per group)



International Career Intentions

At baseline, volunteers and non-participants do not report significant differences in their career intentions. At post-test, volunteers report a significantly higher intention to pursue international or development-related careers while non-participants report a slightly lower intention. Consequently, volunteers' reported interests in international or development related careers are significantly higher than the non-participants over time. (See Figure 4.) Older volunteers rate their interests in internationally-related careers lower; the log of age in years is associated with a 1.90 point decrease on the scale used to measure international career intentions.

Figure 4: Perceived International Career Intentions (N = 145 per group)



Discussion

The results of this quasi-experimental study suggest that international volunteer service has a positive impact on international volunteers' perceived international awareness, international social capital, and international career intentions. However, compared to the non-participants, results suggest that international service does not have an impact on volunteers' perceived intercultural relations. In addition, several variables influence specific outcomes. These findings are discussed below with an aim to inform future research.

Study Limitations

These findings are generally confirmatory of hypothesized outcomes. However, a number of limitations temper conclusions about the identified relationships. First, this research uses survey data based on self-report and thus, respondents' perceptions regarding their interests and behaviors, which is known to have a number of methodological weaknesses and may yield results that are inconsistent with longitudinal and behavioral-based studies.[47] Related, given the self-report nature of the data, social desirability bias may be operating. The international volunteers have been exposed to the program and its expectations; they may think they should increase in these outcomes and thus report so. However, there is some evidence that suggests that social desirability does not play a major role. There are not overinflated averages on the scales for each outcome (i.e., the overall averages are in the middle range of the 1 to 7 scale) and not all outcomes increase significantly for the volunteers.

Second, the samples ultimately are self-selected in that they all expressed initial interest in international service by virtue of applying to volunteer in international service programs. Considering this self-selection bias, the results are generalizable only to those who already have the inclination to volunteer internationally in these two programs. The two programs selected for this study operate in organizations that are respected leaders in the field of international service, and are recognized for applying the best available evidence to guide programming. If the research design included different international service programs or different "types" of individuals, the perceived outcomes may have been different. Related, socio-demographic characteristics, volunteer motivations and other individual attributes undoubtedly influence the decision to volunteer. These types of factors may bias the results of any quasi-experimental analysis. For example, 85 percent of the sample had previous international experience, either working studying, or volunteering outside of their home countries. Furthermore, the sampling frame included a majority of respondents from the United States. Replicating these results with other programs and respondents around the world may produce different results.

Third, only about half of the baseline respondents completed the post-test. This response rates may introduce non-response bias in the analysis due to possible systematic differences between the respondents and the non-respondents. Although non-response analysis did not reveal statistically significant biases, we utilized data imputation to help reduce possible effects of non-response, although data imputation also has limitations.[48]

Fourth, it is not possible to control for all possible spurious and random effects. Other life events may have contributed to observed changes. The intention of utilizing a comparison group to measure counterfactuals is to help mitigate error arising from spurious effects. Because individuals

from the comparison group are highly similar to the volunteers, related life events may have affected outcomes. Moreover, lasting impacts likely evolve over time. Because the post-test survey was completed one week to one month following the end of service, a follow-up survey is needed to gauge longer-term outcomes. Therefore, a one-year follow-up is planned with the same panel of respondents to disentangle the immediate post-service effects from longer-term effects post-service.

Transformation across Time

As volunteers are immersed in different settings and cultures, the international volunteer service experience may expose them to varied historical, cultural, social, economic and political contexts.[40,49] Exposure may yield greater interest in other cultures and new relationships with host country members and other volunteers. These findings are reflected in the reported significant increase in international awareness and social capital among the volunteers. International volunteers in this study are also more likely to report internationally-related career intentions. For some, the service experience may be a chance to explore an interest in internationally-related careers. For example, international service may provide on-the-ground experience for individuals aspiring to work in fields such as international development, nonprofit management, or intercultural studies. This finding is consistent with previous research, which suggests that international service helps to inform volunteers' career intentions.[33,50] However, these are interim findings; it is unclear whether these outcomes will "stick" over time and become more nuanced and action oriented. In other words, do these perceptions and intentions become behaviors?

Stage theories of cultural growth and learning,[51-52] along with transformative learning theory,[53] identify phases of euphoria, disillusionment, adjustment and integration in the learning process.[54] Bennet's theory of intercultural sensitivity posits that shallow contact with cultures often results in naïve stereotyping, superficial statements of understanding and tolerance, and an inability to distinguish complexities of cultural differences, which has been examined in other studies.[39] According to this theory, as people have deeper contact with cultures and develop language skills that enable intercultural communication, they may progressively gain a more accurate understanding of the complexities of intercultural interactions, and recognize that all behavior exists in cultural context.[55-56] In fact, we find in this study that prior international experience (including living, working, studying or volunteering abroad) is a statistically significant predictor of increased international awareness, intercultural relations and international social capital. This suggests that more time abroad may lead to more significant changes. However, this may vary by type of exposure and international experience—factors that should be tested in future research.

Because the measures used in this study are based on self-perceptions, longitudinal research will seek to corroborate volunteers' perceived interests with more objective measures of knowledge and behaviors. Longitudinal research may also help capture lasting changes after returned volunteers have more time to reintegrate and act on their experiences. A time-lag is important as international volunteers often experience initial disorientation upon returning to their home country.[57] In our sample, 85 percent of returned volunteers who completed the IVIS reported some degree of difficulty reintegrating into their country of origin, with 25 percent of them considering reintegration "quite difficult." Returned volunteers often begin the orientation process anew as they reflect on how to integrate their new experiences. Consequently, volunteers may need more time to process the impacts of the service experience in their lives.

International Social Capital in Action

The benefits of international social capital can extend beyond friendship and association. A significant advantage of these relationships for host organizations and communities are the access and resources that these connections may provide.[8,31] Returned volunteers may use their connections for themselves, their home communities and their international service host communities.[31,58] In other research with alumni from the same programs in this study, volunteers reported using international networks to coordinate humanitarian aid projects, exchanges, research trips, internships, or to schedule return trips to the country.[32] Returned volunteers also can help host country students or friends travel to their home country to study or work, or may connect friends or other groups with host country contacts to facilitate future volunteer placements. Other volunteers may use community connections to refine language or intercultural competence skills.

As supported by findings in this report, these contacts may also encourage volunteers to give careers in the international arena more serious consideration. As one returned volunteer observed, "I was able to use program staff connections to learn about other national organizations...I now work for an organization recommended to me by program staff." Because international contacts are correlated with international career intentions,[16] linkages with international contacts may be an important method for finding and launching international careers. In addition, volunteers may use these contacts to contribute directly to development goals as they provide resources and linkages to their contacts in host communities and organizations. Future research should determine the scale, scope and utility of the international volunteers' networks developed from their service experience.

The Influence of Individual Characteristics

A number of individual characteristics—including age, race, occupational experience and previous international experience—are associated with perceived international service outcomes. Age, for example, is negatively associated with internationally-related career intentions. Older adult international volunteers may be less likely to have interests in international careers, in part because they may already have a steady career, may be retired or may otherwise not be seeking employment. Other volunteerism research has found that the "career function" is more important to younger volunteers than older ones.[59] Older adult volunteers are often more interested in applying their career skills and expertise than in developing them.[60]

There may be many reasons why younger people, non-Caucasians and those with greater occupational experience are more likely to report higher intercultural relations. While merely speculative, as American society has become more diverse, young people have greater exposure to people with different backgrounds and may be more open to developing intercultural friendships and relationships.[61] Likewise, people from other races and ethnic groups may have other avenues to form relationships and to interact with people from different cultural or ethnic backgrounds, and may be more open and receptive to talking with others about issues of diversity.[62-63] Finally, occupational experience may increase social networks overall, and bring people into greater contact with diverse peoples and cultures.[64]

Previous international experience is positively associated with three of the four international outcomes assessed in this study. These international experiences may include working, studying, volunteering and living in other countries. This indicates that the greater amount of time people

spend abroad, the more likely they are to develop their international perspectives resulting from international service. Future research should assess which types of international experiences lead to increased awareness and understanding, and whether the association between these outcomes and individual characteristics holds over time. In particular, it could be that certain types and amount of international exposure are needed prior to international service in order to gain the most from these experiences.

Future Research on International Volunteer Service

Future research will examine how specific institutional features affect identified outcomes. This line of inquiry has the most potential to inform the field. The reciprocal partnerships between hosting and sending countries, as well as institutional features—such as volunteer orientation, training, and supports—are features that can be altered to improve positive outcomes on volunteers, host organizations, and communities.[1,65-66] The effect of individual characteristics, such as host-country language capacity or prior international experience, should also be examined.

This report is part of a larger study on the impacts of international volunteer service. Forthcoming reports will compare data from international service organizations and beneficiaries to data from matched organizations and beneficiaries that do not host or interface with international volunteers. Research using an experimental design is also underway to assess the impact of international service on community health outcomes in villages in Uganda.[67] These studies will inform the use of international service as an instrument of international aid and development.

To increase the effectiveness of international service, more rigorous impact studies are needed.[9] The field will benefit from investing in an organizational infrastructure, such as a data clearinghouse, to collect and share impact data. It will further benefit by investing in comparative research across the globe to assess a range of innovative international service models.[7] Over the long-term, as programs engage in research and share results, comparative research across diverse models that comprise the international service field can inform empirically-based decisions for international service policy and practice.[68]

This report, along with future reports from the overall study, is an initial response to the call for research documenting the impacts of international volunteer service.[9,13-15] The interim findings reported here suggest that international service may have a role in promoting international perspectives, relationships and interests. These outcomes are important in an increasingly globalized world. Leaders in the United States emphasize that "international knowledge and skills are increasingly important to daily life and the United States' success in the global economy."[18,69-70] To the degree that international service enhances global-oriented perspectives, relationships, and interests, it may advance "smart power" diplomacy and development-based foreign policy.[2] Though, while international volunteer service appears to increase awareness, interest and international perspectives, does it actually generate skills, a commitment to international careers, and global leadership? Forthcoming research will focus on whether international volunteers maintain and act on these perspectives.

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Appendix A

Figure A.1: The Perceived Impacts of International Service on Volunteers: Quasi-Experimental Research Design Timeline (2008-2011)

	Time 1 Survey (one month before service) 2008-09	→	**Time 2 Survey** (one week to one month after service) 2009-10	→	**Time 3 Survey** (one year after service) 2010-11
Treatment Group (International Volunteer Participants)	Baseline test	→	Post-test (perceived changes in outcomes)	→	Longitudinal follow-up (perceived and behavioral changes)
Comparison Group (Non-International Volunteer Participants)	Baseline test	→	Post-test (perceived changes in outcomes)	→	Longitudinal follow-up (perceived and behavioral changes)

Figure A.2: The Perceived Impacts of International Service on Host Organizations and Their Beneficiaries: Cross-Sectional Research Design

Group	**Methods**
International Volunteer Hosting Organizations (*n*=10 organizations, 5 per program)	
Host Organization Staff	Interviews (*n*=30; 3 per organization)
Host Organization Beneficiaries	Focus Groups (*n*=77; average of 8 per organization)
Matched Non-International Volunteer Hosting Organizations (*n*=10 organizations, 5 per program)	
Comparison Organization Staff	Interviews (*n*=30, 3 per organization)
Comparison Organization Beneficiaries	Focus Groups (*n*=84; average of 8 per organization)

Note: This cross-sectional research allows for comparison across key outcomes such as perceived differences in capacity between organizations that host and do not host international volunteers. This comparative design also assesses perceived differences in international awareness, intercultural relationships and resources between the organizations' beneficiaries who interact with and those who do not interact with international volunteers. Analyses and reports are forthcoming from these methods.

Figure A.3: Development of the International Volunteer Impacts Survey

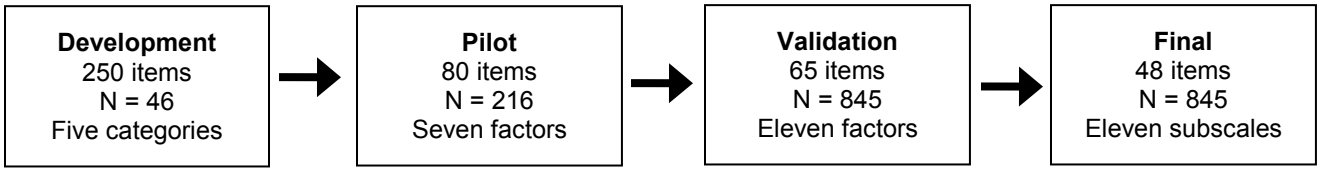

Table A.1: Measurement of Perceptions of International Interests (n = 290) [a]

International Awareness (*a =.80)* [b]

- I think a lot about the problems of nations outside my own and how they might be solved.
- I have a good understanding of the reasons for global poverty.
- I have a good understanding of how low-income countries can better develop their economies.
- International issues and affairs play an important role in my life.

Intercultural Relations (*a =.80)*

- I frequently interact with people from different cultural or ethnic backgrounds.
- Many of my friends are of different backgrounds from me (racial, cultural, ethnic, or language).
- I am highly interested in working or forming friendships with people of different cultural backgrounds.
- I am very comfortable talking about diversity with people of different cultures.

International Social Capital (*a =.84)*

- I have many friends, acquaintances, or contacts that live in other countries.
- I frequently write letters send emails or have other correspondence with people in other countries.
- I am closely connected with an organization(s) that works internationally.
- I have personally given money or other useful resources to contacts living in other countries.
- I have used my international contacts to link people or organizations to useful resources.
- I have used my connections to advocate for people or organizations internationally (e.g. lobbied for policy changes, wrote an email or newsletter, etc.).

International Career Intentions (*a =.77)*

- I plan to pursue a career related to social or economic development.
- I plan to pursue a career in an internationally-related field.

[a] The response set for each item was weighted from 1 (strongly disagree) to 7 (strongly agree). These items do not measure respondents' objective levels of knowledge or skill in an outcome category. A given outcome category is an additive variable across the respective items, which measure respondents perceptions regarding their interests, intentions, and behaviors. For more information

on how these measures were developed and tested please refer to the following working paper: http://csd.wustl.edu/Publications/Documents/WP09-31.pdf [16]

[b] Cronbach's *a* (alpha) increases as intercorrelations among individual test items increase, and is widely accepted as an indicator of the internal consistency or reliability of a construct. A high alpha score (> .70) indicates that individual test items reliably measure a single unidimensional construct.

Appendix B

Power Analysis

An effect-size of 0.25 on a 7-point scale was determined to be a practically significant change in most outcomes based on an estimated standard deviation of 0.75. A power analysis revealed that a sample size of 290 would be adequate to determine statistically significant effects with more than 80 percent confidence, assuming a standard error of the model estimated at 1.0. (Lenth, 2006). This determination was calculated assuming a regression with 12 predictors, and a two-tailed 95 percent confidence interval ($\alpha = 0.05$). This power analysis assumes orthogonal design (that all of the predictors are mutually uncorrelated). However, mild collinearity between variables may increase the sample size needed for adequate power to determine statistically significant differences between the pre and post test (Stevens, 1995).

Multiple Imputation

To reduce possible non-response bias and to replace missing data, multiple imputation procedures were completed using the Markov chain Monte Carlo (MCMC) method.[71] We included all variables that were potentially related to missingness to produce more accurate imputation estimates and to strengthen the validity of the dataset analysis.[72-73] We imputed five datasets and used the expectation-maximization algorithm to combine multiple datasets for final imputed estimates. Fit diagnostics and comparisons of the distributions between the imputed and observed data were nearly equal, indicating no unusual patterns or problems with imputation.

Non-Response Analysis

Given the overall response rate of 53 percent for the post-test, we completed a non-response analysis following imputation to determine systematic differences between respondents and non-respondents.[74] We employed a logistic regression to determine the influence of 11 characteristics (age, gender, race, citizenship status, marital status, educational level, occupational experience, individual and household income, and weeks spent overseas) on the likelihood that individuals would either respond or fail to respond. Among these covariates, females and those with a bachelor's degree or higher were the only groups more likely to complete the post-test ($b = -.47$, $\chi^2 = 4.9$, $p < .05$, and $b = .61$, $\chi^2 = 7.1$, $p < .05$ respectively), indicating no major issues with non-response bias.

Propensity Score Analysis

In quasi-experimental designs, meaningful differences can exist between those in the "treatment" and "comparison" groups. Propensity score matching is a technique that can reduce biases between the two groups that could increase or decrease the chance of detecting a difference in the outcome variables attributable to the international service.[75] To test for differences and predict propensity scores, we used a logistic regression with 16 predictors that may affect participation and post-volunteering outcomes. These variables include demographic characteristics and motivations for enrolling. Only two of the 16 variables were significant predictors of selection into the treatment group: higher individual income ($b = .07$, $\chi^2 = 5.2$, $p < .05$) and previous international volunteer experience ($b = .76$, $\chi^2 = 9.8$, $p < .01$).

Although these results indicated only moderate selection bias, we employed propensity score matching (PSM) to reduce observed biases.[76-77] Cases were randomly matched by program and the closest propensity score. PSM reduced the total sample size from 366 to 290 (n = 145 per group). To validate the propensity score model, we repeated the logistic regression using matched cases. In the validation model, no variables significantly predicted group membership (all $p > .40$), indicating that PSM achieved good balance across all covariates.

After non-matched cases were removed, the average age of the survey respondents was 27 years, and 52 percent reported incomes of less than $20,000 per year. The majority had a bachelor's degree (70 percent), were single (89 percent), White (79 percent), and female (82 percent). See Table 1 for a breakdown of differences between the treatment and comparison groups following PSM.

Confirmatory Factor Analysis

Each major outcome area in the IVIS is composed of multiple indicators (see Lough et al., 2009). To validate the reliability and validity of these constructs and their associated composite variables, we repeated confirmatory factor analysis and reliability analysis on each construct for both the baseline and post-test data separately and together. Manifest variables loading onto each construct all maintained Lambda coefficients higher than .50. Likewise, Cronbach's Alpha statistics for all five constructs exceeded .70—indicating internal consistency for each construct.[44]

Generalized Linear Mixed Modeling

We used generalized linear mixed regression models with an AR(1) covariance structure to determine significant differences in outcomes between treatment and comparison groups over time. As follow-up times were not uniform across all respondents due to differing durations of volunteer service, linear mixed modeling (LMM) was considered the most appropriate procedure.[78] An additional benefit of LMM is that it supports multilevel or nested data, and estimates of change are based on maximum likelihood for each subject rather than on analysis of variance.[79] Repeated observations were nested within subjects and the sending organization.

As mixed models, changes in the outcome variables were affected by both fixed and random effects. Fixed effects for these models included respondents' race, age, and sex, level of education, occupational experience, marital status, individual income, and time spent abroad in one's lifetime (living, volunteering, studying, or otherwise). The logit of the propensity score was included as a random effect to account for possible sampling bias. Although tests of statistical significance for the random effect variance parameters are provided, they are considered bounded and are therefore not directly interpreted.[80]

Prior to entering variables in the regression model, univariate analyses were completed to verify that assumptions of regression were met. In order to improve the accuracy of estimates, highly skewed or kurtotic variables were transformed. Three variables required transformation. Age was transformed by taking the natural log of each response. Total weeks of previous international and years of occupational experience were transformed by taking the square root of each response.