JICA Research Institute

JICA-RI Working Paper

An Interdisciplinary Study of Japan Overseas Cooperation Volunteers (JOCV)

Measuring the Competencies of International Volunteers: Key Competencies of the Japan Overseas Cooperation Volunteers and their Perceived Achievements and Outcomes

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No. 164

March 2018

JICA Research Institute

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Measuring the Competencies of International Volunteers: Key Competencies of the Japan Overseas Cooperation Volunteers and their Perceived Achievements and Outcomes

Mayuko Onuki*

Abstract

International volunteers (IVs) are promoted as catalysts for change in development cooperation. However, little is known about what makes them successful in generating positive changes in developing communities. The present study proposed an affective measure of competencies for IVs and longitudinally examined the relationship between their competencies and volunteer performance such as perceived achievement and outcomes for counterpart organizations. Using panel survey data on the Japan Overseas Cooperation Volunteers (JOCV), a series of exploratory and confirmatory factor analyses identified three distinct correlated factors which correspond to each of the predicted key competencies, *initiative for challenge*, *intercultural negotiation*, and *project management under stress*. Tests of longitudinal measurement invariance on these measures established partial scalar invariance, indicating that their factor structure is mostly stable over three measurement times: *before*, *during* and *after* volunteering. A series of hierarchical linear regression analyses showed that all three competencies predicted perceived volunteer achievement and/or outcomes for counterpart organizations but at different stages of volunteering. The study also found that these competencies declined toward the end of the first year overall, and then increased toward the end of the volunteer service. Implications for practice are discussed.

Keywords: Japan Overseas Cooperation Volunteers (JOCV), competency, international volunteers, volunteer outcomes, measurement, non-cognitive skills

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This paper draws on a research project of the JICA Research Institute entitled *An Interdisciplinary Study of Japan Overseas Cooperation Volunteers (JOCV)*, led by Prof. Yasunobu Okabe at Tohoku University. I would like to thank Yasunobu Okabe and Mine Sato for their advice on the research, and Eriko Sakamaki for coordinating the program of research. I would like to also thank Chieko Tamura and Makoto Nakamoto for assisting in the preparation of this paper.

Introduction

International volunteers (IVs) are promoted by international volunteer-sending organizations as catalysts for change in stimulating and empowering local people to seek the creation of new values for strengthening the resilience of vulnerable communities (UNV 2016). As catalysts for change, they must undergo significant adaptation themselves to work in a foreign developing community that may have living conditions harsher than their own and engage in trial-and-error in the application of their knowledge and skills to solve novel problems in a new cultural environment. To inspire local people to realize their own potential and capacity they exert social influence through working and living with them side by side. The current study attempts to uncover the key competencies of IVs that enable such processes of innovation and capacity building in developing communities to occur.

International volunteering has its own uniqueness and strength among the set of development actors. It is generally defined as: participation is of one's free will, is not for personal financial reward, and is for the benefit of a country other than their own (see Ellis Paine and Rochester 2010; Leigh et al. 2011). According to self-determination theory (Ryan and Deci 2000), a lack of reward and punishment is a basis for exploratory, playful, and curiosity-driven behavior that fosters intrinsic motivation, high-quality learning, and creativity (Ryan and Stiller 1991; White 1959). These in turn affect performance, persistence, and wellbeing in satisfying innate psychological needs of competence, relatedness, and autonomy. Therefore, volunteering, by definition, should serve to satisfy those psychological needs through intrinsically valuable activities, activities which bring us joy, and that are part of the process of learning and boosting performance. Building on this theory, the current study looks at affective appraisal of competencies to understand volunteer efficacy in achieving their goals and generating outcomes in host communities. Herein, competencies are conceptualized as phenomenological

experiences in affective states, and action tendencies which drive performance and outcomes in the context of international volunteering.

The paper first reviews research on competencies in general, followed by that on the competencies of volunteers and international volunteers more specifically, and then discusses gaps in the current literature and the aims of the current study. Next is the study method section, followed by a discussion of the results and major findings. In conclusion, study implications and limitations, the direction of future studies, and policy implications of the findings are discussed.

Competencies

The term competence gained popularity when McClelland (1973) promoted "Testing Competence Rather Than 'Intelligence'" by skeptically reviewing evidence for the validity of intelligence and aptitude tests in predicting occupational success and other important life outcomes such as health and well-being. General intelligence is often considered to be largely determined by heredity and its development appears to stop around the age of 16 years (Garlick 2002). In contrast, competency develops through real work and life experiences throughout a life time and is much more dynamic and malleable in respect of change. Taking on McClelland's advocacy in testing competence, many researchers as well as business practitioners have adopted the concept of competence to predict job performance and to recruit suitable human resources (e.g., Athey and Orth 1999; Boyatzis 1982; Losey 1999; Lucia and Lepsinger 1999; Spencer and Spencer 2008). The most quoted definition of a competency is "an underlying characteristic of an individual that is casually related to criterion-referenced effective and/or superior performance in a job or situation" (Spencer and Spencer 2008, 9). Herein, 'criterion-referenced' means that a competency predicts specific performance on a given criterion (e.g., number of cars sold by a car sales representative).

The definition of competence is fairly well agreed (see Weinert 2001 for a review of the concept); whereas the types of competency under study as well as the assessment practices used vary considerably. Boyatzis (1982) classified competencies into three types: traits and motives (unobservable), self-image and social roles (perceptions), and skills (observable in behavior). Some organizations only look at readily available observable behaviors to identify skills. However, knowing whether one has a set of particular skills as manifested in observable behavior cannot explain how, when, or how long those skills are or will be applied in various work settings. Thus, unobservable and perceptual aspects of competence, such as confidence, motivation for the task, and meta-learning, should not be dismissed just because they are complex and difficult to measure.

Competency has also gained popularity among policy makers. Similar buzzwords, such as generic skills, employability skills, key skills, and transferable skills, are used in various policy discourses in education and employability. The National Centre for Vocational Education Research (NCVER 2003) reviewed the perceptions and advocacies of a competency-like concept in Australia called 'generic skills,' and compared these to those in the United Kingdom, the United States, and Canada. There are six common elements of competencies identified across these countries: basic/fundamental skills (literacy, numeracy, and technology), people-related skills (e.g., communication, teamwork, and customer-service skills), conceptual/thinking skills (e.g., problem-solving, planning and organizing, and innovation), personal attributes (e.g., being responsible, resourceful, and self-esteem), business skills (e.g., enterprise and innovation), and community skills (e.g., civic or citizenship knowledge).

The Japanese Ministry of Economy, Trade, and Industry (METI 2006) also proposed a similar concept, called "Fundamental Competencies for Working Persons (FCWP)," *Syakaijin-kisoryoku* in Japanese, which is defined as "the basic abilities required when working together with various people in the workplace and in the local communities" (METI 2006, 4). FCWP is considered as a set of necessary abilities which enable an individual's cognitive

abilities and area-specific knowledge in real work settings. It consists of the ability to step forward (action), the ability to think through (thinking), and the ability to work in a team (teamwork). These competencies are promoted nationally, permeating through the public sector and private industry. Many educational programs are funded by the government to promote those competencies (e.g., competency competitions in seminar coursework pedagogy among colleges), while some private companies interview and/or administer tests for those competencies to potential employees. Furthermore, there are many human resource management companies in Japan which develop and sell competency assessment tools today (e.g., Research and Solution Co., Nikkei HR Inc., and RIASEC, Inc.). Accordingly, it is critical for any formal and non-formal education programs to promote those competencies to attract funds and thrive in the society.

The Competencies of International Volunteers

Thomas (2001) provided qualitative evidence that international volunteering is a way to develop higher order skills, such as global awareness, adaptability, and interpersonal skills, in which returned volunteers fill the skills gap in traditional models of education and learning. Many other studies also report that international volunteering has an impact on 'personal' competencies such as self-confidence, problem solving, adaptability, and autonomy as well as 'social' competencies such as citizenship participation and responsibility, leadership, interpersonal skills, intercultural competence, and teamwork (e.g., Cook and Jackson 2006; Kelly and Case 2007; Jones 2004, 2005; Kiilakoski 2015; Machin 2008; Sherraden, Lough, and McBride 2008; Stiehr and Raschdorf 2015). For instance, Cook and Jackson (2006) surveyed returned business and management international volunteers who had completed a two-year placement overseas and found that they perceived that, through volunteering, they had developed people skills as well as specific management skills, such as working with different cultures, communication,

problem-solving, managing change, influencing and persuading, conflict management, and coaching and mentoring.

Among those competencies, intercultural competence, interchangeably defined as cross-cultural or multicultural competence, intercultural effectiveness, intercultural communication competence, or intercultural understanding (e.g., Johnson, Lenartowicz, and Apud 2006), is a unique asset of IVs on which there is more research. It is broadly defined as "the general ability to transcend ethnocentrism, appreciate other cultures, and generate appropriate behavior in one or more different cultures" (Bennett, Bennett, and Allen 1999, 13) or "the ability to communicate effectively and appropriately in intercultural situations based on one's intercultural knowledge, skills, and attitudes" (Deardorff 2008, 33). Lough et al. (2009, 3) further elaborated on Deardorff's definition and proposed that intercultural competence "consists of knowledge of international affairs, intercultural practices, and self-awareness of one's own cultural identity; skills such as the ability to listen and relate to others; and attitudes such as open-mindedness, curiosity, and a respect towards different cultures and practices."

The majority of the earlier studies in this field are based on case or cross-sectional studies (Powell and Bratovic 2007), whereas recent studies use more rigorous research method such as longitudinal design with a comparison group. For example, Yashima (2010) found that college students who participated in a two-to-three week international volunteering program increased their tendency to approach people of other cultures, their interest in international affairs, their perceived interpersonal communication skills, and their self-efficacy and decreased ethnocentric tendencies, in comparison to students in the same college who did not participate in the international volunteering program. McBride, Lough, and Sherraden (2010) examined long-term (10 to 12 months of service) IV programs in the United States and found that IVs had greater perceived international awareness, international contacts, and international career intensions than people who applied for the same international volunteering program but had not yet participated. Furthermore, Lough, McBride, Sherraden, and Xiang (2014) note that

international competencies, specifically international concern and international social capital, continue to grow even after returning from the service.

Gaps in the Past Studies and the Present Study

The competency literature developed partly in response to the needs of human resource managers when they were identifying, recruiting, and nurturing competent employees to maximize organizational outcomes. When it comes to the competencies of volunteers, however, management issues take priority. These include retaining more participants by promoting the benefits of participating in a volunteer service program rather than recruiting ideal candidates or nurturing competencies that lead to better volunteer outcomes. Indeed, lack of the skills required to be an effective volunteer is not seen as a major barrier to the recruitment of willing volunteers (Caro and Bass 1995). The recent review paper on the management of volunteers (Alfes, Antunes, and Shantz 2017), both local and international, also reveals that studies in the field have rarely examined performance outcomes of volunteers beyond satisfaction and commitment (e.g., hours of volunteering). Therefore, as a field, there is a lack of evidence and understanding about what the competencies of successful volunteers and their implications to managing volunteers for better development outcomes are.

Competencies as Predictors of Successful International Volunteering

More specifically, existing quantitative studies also focus on confirming the evidence on competencies as outcomes of international volunteering, and little is discussed about the competencies needed for successful international volunteering. According to research in the field of organizational psychology, there are three conditions for newcomers to influence innovation: 1) newcomers' motivation to introduce change into the organization; 2) newcomers'

ability to convince old-timers to accept their ideas; and 3) newcomers' ability to generate ideas that can enhance the performance of the organization (Levine, Choi, and Moreland 2003).

In the case of IVs, to the extent to which their volunteer activity is open-ended and conducive to change, their initiative and persistent effort seem to be the driver for change and positive outcomes because no direct compensation or punishment is contingent upon their performance. Furthermore, they are often put in a situation where they first assess local situations to initiate an actionable plan themselves while having their ideas consulted and supported by their counterparts and people in the community. Therefore, it would be critical to have an ability to negotiate those ideas with and convince others who may have different opinions, values, and cultural backgrounds from their own. Moreover, in the context of developing communities that are often struggling with many vulnerability factors (e.g., poverty, poor public health, political instability, and security issues), it is critical for IVs to be able to handle the stress associated with those vulnerability factors, respond adaptively to changing situations, and manage their project appropriately. Accordingly, the present study focuses on 1) personal competencies related to motivation such as initiative for challenge and persistence; 2) social competencies such as persuasiveness, managing conflicts, and coordination with others; and 3) the strategic aspects of competencies such as analyzing problems to generate solutions, planning operations, managing stress, and adaptability. These competencies were tested to see if they predict volunteer goal achievement and outcomes for the host community.

Affective Appraisals as Indicators of Competency

Many of the studies on the competencies of both local and international volunteers rely on self-reporting; asking for comments on the impact of the volunteering experience on their competencies (i.e., how much ex-volunteers think their volunteering experience increased their competency) or perceived competencies (e.g., Powell and Bratovic 2007; Stahl and Cerdin 2004; Lough et al. 2014). These methods are susceptible to demand characteristics and social

desirability and may lead us to overestimate the positive outcomes of volunteering, giving an overall increase in ratings on competencies where this might not be warranted. Measurement is one of the challenges in research on international volunteering because volunteer activities and goal setting are socio-culturally dynamic as well as highly variable across individual cases (unlike technical workers in a silo). This heterogeneity makes objective and standardized measures of competency difficult.

To reconcile these issues, the present study proposes a new method which uses an affective feedback as a measure of competency. According to the control-value theory (Pekrun 2006; Pekrun, Frenzel, Goetz, and Perry 2007), emotions felt during achievement related activities are preceded by one's perceptions of controllability and intrinsic values of the activities while emotions felt after the activities are preceded by one's perceptions of feedbacks from various sources of evaluations including self-reflection, evaluations from others (e.g., teachers, colleagues, and supervisors), and performance outcomes. These two emotions combined make up the category "achievement emotions" (Pekrun 2006) and reflect competencies that are phenomenologically experienced by performers. Accordingly, the present study asked IVs how much they '*enjoy*' doing certain kinds of tasks which map onto the different types of competency that are hypothesized to be crucial for successful international development volunteering.

This method captures IVs' perceptions of their competency in the reality of day-to-day activities which may have many layers and sources of evaluation feedback evolving over time. These may include: how well their activities are regarded by their counterparts, colleagues, host organizations, and local people, as well as their own assessment of how well they are doing in reaching their volunteer goals. This framework is particularly useful for measuring the competencies of IVs because affective feedback stands as a barometer of the self-regulatory mechanism for associated elements in learning situations that are complex and highly variable across individual cases of international volunteering. Furthermore, reporting on degrees of joy

would be less susceptible to demand characteristics and social desirability in comparison to reporting on one's own capability.

Structural Validity of the Affective Measure of Competencies

In the social and behavioral sciences we must often rely on multiple questions to get at an underlying phenomenon or outcome of interest that is not directly observable. Theoretically, a well-validated measure would provide a set of questions which capture the same construct across different groups of people at different times. However, in practice, this assumption can be invalidated as the meaning of a construct may change over time or across different populations. Therefore, in order to adequately compare and sensibly interpret composite scores across different time points, the present study first examined the structural properties of a competency measure, tested its longitudinal measurement invariance (i.e., whether the measure taps into the same underlying meaning and relationships among constructs under study across different measurement times), and explored those aspects that might change over time.

Changes in Competencies during Volunteering

Existing quantitative studies of the competencies of IVs have only looked at these before and after volunteering, assuming a linear development of these skills in the process of international volunteering. However, field research by Fee and Gray (2013) suggests that learning through international volunteering is rather complex, non-linear, and qualitatively different from the local volunteering that takes place in the volunteers' familiar home country. They analyzed the episodes of learning experience reported by returned IVs and found that learning triggers such as making errors, misinterpreting situations, and copying with insufficient resources, are present in the process of competency development. Sekine (2016) also highlighted a violation of expectations, experienced as disappointment, as a prominent aspect of the personal growth of IVs and argued that cultural immersion or blending via sharing of emotions with local people are

pivotal in the activities of IVs for that growth. Furthermore, McBride et al. (2010) suggested that some competencies may take longer than one year to develop, varying by amount of individual experience and prior experience. Therefore, it is likely that the development of IV competencies is not quite linear, especially for those IVs who serve long term (e.g., longer than 1 year). Accordingly, the present study assessed competencies over three specific time periods: 1) before 2) during, and 3) after a two-year international volunteering program, to examine whether they change in the process of volunteering, and if so, whether the change was linear or curvilinear.

Methods

Participating Program

The study participants were drawn from the JOCV program, a government funded international volunteering program which the Japan International Cooperation Agency (JICA) runs under supervision of the Ministry of Foreign Affairs. Eligible JOCVs were Japanese citizens between the age of 20 and 39 dispatched to one of the 88 host countries for a period of two years. Areas of their volunteer activities were highly diverse, ranging across about 120 categories under the overarching sectors such as agriculture, forestry and fisheries, fabrication, civil engineering, sanitation, education and culture, sports as well as planning and administration. They are recruited, in principle, to match the needs and requests of counterparts in developing countries. Within their first 6 months of stay, volunteers discuss, negotiate, and form an agreement with their counterpart on a concrete volunteer action plan and goals, and work on them for the rest of their service duration to meet their volunteer goals.

Participants and Data

The present study uses data from a series of questionnaire surveys with the JOCVs conducted by the JICA Research Institute between 2011 and 2015. JOCVs who were dispatched between the

summer of 2011 and the winter of 2014 were asked to complete a paper-based or web-based survey during their pre-departure training. Those who were dispatched between the fall of 2010 and the fall of 2013 were asked to complete an online survey approximately 1 year after their dispatch at their nearest JICA office or Volunteer's Dormitory[1] where internet access was available. Those who were dispatched between the summer of 2009 and the winter of 2012 were asked to complete a paper-based survey when they returned to Japan from their service. Their responses were provided voluntarily and there was no compensation for their participation.

The current study is based on the responses from volunteers who were dispatched between the summer of 2011 and the winter of 2012 used as panel data. This resulted in 1330 valid responses (785 females, 534 males, and 11 unknown) provided in least one of the three survey periods; *before* (called *time 1* hereafter), *during* (called *time 2* hereafter), and *after* the volunteer service (called *time 3* hereafter). The average age of the participants was 30.24 (*SD* = 4.13) years old when they returned to Japan.

Measures

Competencies. To assess the competency of IVs, items were adopted from a human resource assessment tool, Harrison Assessments,[2] which was translated into Japanese for the purpose of assessing the Fundamental Competencies for Working Persons (FCWP) by a Japanese human resource management company, Research and Solution. As introduced earlier, FCWP consists of three dimensions of competencies, "action", "thinking", and "teamwork", and these dimensions are further broken down into twelve elements. The first dimension "action" includes three elements: the ability to take initiatives (e.g., find things to do on their own and

[1] This place serves various functions such as a place for volunteers to stay during emergencies, a meeting place, and an information gathering station (free access to library and internet).

[2] Harrison Assessments have been translated into 23 languages and used by 5000+ organizations across the world for talent acquisition, employee development, and employee engagement, http://www.harrisonassessments.com/

take action without waiting for an order), to exercise leadership by involving others for the cause, and to take action without being afraid of failure and persist with this. The second dimension, "thinking," includes three elements: the ability to analyze the situation to discover problems, to find a process of problem solving to prepare for them, and to discover innovative solutions to the problems. The third dimension, "teamwork," consists of six elements: the ability to explain their own ideas, to listen, to understand differences in positions and stance, to understand one's role within a team, to obey rules and keep promises, and to manage stress.

For survey administration fourteen items from this assessment tool were chosen to measure the hypothesized competencies of successful IVs: 1) personal competencies related to motivation such as initiative for challenge and persistence; 2) social competencies such as persuasiveness, managing conflicts, and coordination with others; and 3) strategic aspect of competencies such as analyzing problems to generate solutions, planning operations, managing stress and adaptability. The responses were provided on 4-point Likert-type scales (1= Very applicable to 4 = Not at all applicable). The scale was administered at all three measurement times.

Perceived Goal Achievement. The perceived achievement of volunteer goal was assessed by asking the degree to which volunteers had achieved the volunteer goals that they had agreed with their counterpart in the beginning of their service. This question was asked at *time 2* and *time 3* using a 4-point Likert-type scale (1= Not at all achieved to 4 = Achieved very much).

Perceived Outcomes on Counterparts. There were four dichotomous questions (yes or no) in which volunteers were asked whether they observed that: 1) existing services expanded in their counterpart organization; 2) new services started in their counterpart organization; 3) the skills of their counterpart staff improved; and 4) the work attitudes of their counterpart staff improved.

Control Variables. According to Sherraden et al. (2008), there are many personal and institutional attributes that influence the outcomes of international volunteering. To account for

the potential influences of such variables, additional questionnaire items available in the series of questionnaire items were included in the analyses as control variables. For IVs personal attributes, standard demographic information such as age, gender, education, and volunteer sector as well as the presence of prior experience in cultural exchange or foreign aid programs, skills-oriented preparation (e.g., brushing up language and technical skills), and information-oriented preparation (e.g., gathering information about the community and learning from former JOCVs) were included. For placement attributes, dispatch type (whether IVs were dispatched as an individual assignment or a group assignment), frequencies of visits by volunteer coordinators, distance to JICA office, and needs mismatches were included. And for IVs psycho-social process variables, effort to assimilate, cultural immersion upon one year of placement, and degree of stress were included.

Education consists of five categories: 1) less than 4-year college degree; 2) a Bachelor degree; 3) a Graduate degree; 4) an International bachelor degree; and 5) an International graduate degree. The volunteer sector consists of five domains: 1) human capital (e.g., teacher); 2) administration (e.g., community developer); 3) agricultural/forestry/fisheries; 4) industrial/manufacturing (e.g., technicians); and 5) public health (e.g., nurse). Stress was scaled as the mean of nine scores on items which asked whether IVs experienced stress in various domains such as volunteer activities, living conditions and security, health, interpersonal relationships, their skills and future, using a 7-point Likert-type scale (1= Not at all feeling stressed to 7 = Feeling stressed greatly). Needs mismatch was the sum of three scores on items which asked whether IVs experienced unexpected any change or mismatch of needs by local counterpart from the initial volunteer assignment.

Statistical Analyses

Overall, there are three parts to the analysis. The first was to examine factor structures and the longitudinal measurement invariance of the proposed measure of competency. The second to

examine the relationship between perceived volunteer achievement and outcomes on counterparts (dependent variables) and competencies (independent variables), and the third to examine changes in competencies over time by treating them as dependent variables and time as an independent variable. Details of the statistical procedures are below. Initially, univariate analysis was used to describe the distributions of all the items included in the model and descriptive statistics are provided in the Appendix.

Tests of Factor Structure and Longitudinal Measurement Invariance. The whole sample was split into half with random assignment, comprising two sub-samples; sub-sample A and sub-sample B. The sub-sample A was used for exploring the model based on exploratory factor analysis (EFA) using maximum likelihood estimation with Promax rotation for correlated factors by retaining factors having eigenvalues greater than one. To minimize bias due to sample-specific variation, replication analysis proposed by Osborne and Fitzpatrick (2012) was conducted to assess replicability of the basic factor structure. The other half of the sample, the sub-sample B, was then used for validating the models explored with EFA based on confirmatory factor analysis (CFA) using structural equation modeling framework with the maximum likelihood estimation. This cross-validation method attempts to minimize sensitivity to sample-specific variation. Based on the replicability and acceptability of factor structures, the most plausible model was identified. These steps were repeated for items measuring competencies at time 1, time 2, and time 3 respectively.

For the results of each CFA, goodness of model fit was evaluated using the following indices: the goodness of fit chi-square (acceptable: chi-square/df < 5, Wheaton, Muthen, Alwin, and Summers 1977 or chi-square/df < 5, Tabachnick and Fidell 2007), Root mean square error of approximation (RMSEA: good < .06 and poor/reject the model > .10, Steiger 2007;), Comparative Fit Index (CFI: good > .95 and adequate > .90, Hu and Bentler 1999), and Akaike (AIC, the smaller the more parsimonious, Akaike 1974). Modification indices (MI) were also examined for parameter misfit. This index shows how much the overall model chi-square would

decrease (i.e., improve) if a constrained parameter was freely estimated. The internal consistency of each subscale was measured using the Cronbach's alpha measure of reliability across the three time points.

In the next step, the validated model was examined for longitudinal measurement invariance using full sample to examine whether the scales measure identical constructs over time so that means, variances, and covariances can be compared longitudinally. To do so, a series of nested models were fitted sequentially with added restrictions and each model was compared against the less-constrained model to see the wisdom of adding these restrictions (Cheung and Rensvold 1999; Little, Preacher, Selig, and Card 2007; Widaman, Ferrer, and Conger 2010). First, the unconstrained model (*configural invariance*) was fitted, wherein the pattern of item-to-construct relations is expected to be the same across the three time points. Second, above and beyond the previous model, *metric invariance* was tested wherein factor loadings of the same constructs were set to be equivalent over the three time periods. This is to examine whether the meaning of each construct holds equivalent over time. Third, *structural invariance* was tested wherein factor variances were set to be equal across time, above and beyond the previously added constraints. This is to examine whether people use the equivalent ranges of each construct, and the relationships among the constructs stay the same over time. Fourth, *scalar invariance* was tested, wherein item intercepts of the same constructs are set to be equivalent over time above and beyond all the previous model's constraints in place.

Partial invariance was examined whenever complete invariance did not hold for a model by relaxing the equivalence constraint for non-invariant items. To detect measurement invariance a general cutoff value of .002 for ΔCFI was used instead of χ^2-test because the sample size (N = 1330) is too large for $\Delta\chi^2$ to be insignificant for negligible changes in alternative fit indices (Meade, Johnson, and Braddy 2008).

Competencies as Predictors of Perceived Volunteer Achievement and Outcomes on Counterparts. Relationships between perceived volunteer achievement at time 2 and time 3

(dependent variables) and competencies (predictors) were examined using a series of hierarchical linear regression analyses. In addition to competencies, additional variables available in the dataset that are known to influence outcomes of international volunteering (Lough 2010; see Sherraden et al. 2008 for a review) were added as control variables in the model.

Firstly, perceived achievement at time 2 was regressed on the following steps. Prior to baseline competencies measured at time 1 (Step 2), other volunteer attributes including age, gender, education, sector, preparation and prior experience were controlled first in Step 1. Step 3 included placement attributes including assignment type (individual vs. group), frequencies of visits by volunteer coordinator, distance to JICA office, and volunteer needs mismatch as well as volunteers' psycho-social processes measured at time 2 such as degree of effort put into assimilating, cultural immersion, and stress. Step 4 finally included competencies measured at time 2.

Next, perceived achievement at time 3 was regressed on the same steps which were then followed by additional steps. Step 5 included stressed measured at time 3, and finally Step 6 included competencies measured at time 3. Furthermore, to examine the impacts of competencies on achievement made between time 2 and 3 regardless of how much the IVs achieved their goal at the mid-point in their 2-year volunteer service, the model was repeated with the change in achievement as the dependent variable wherein the conceptual baseline achievement, achievement measured at time 2, was included as an additional covariate. For perceived volunteer outcomes that are dichotomous variables, a series of logistic regression analyses were conducted with the same hierarchical models in steps.

Changes in Competencies over time. A series of linear mixed effects model analyses were conducted to examine changes in each of the competencies across the three measurement times, before, during, and after volunteering. Treating measurement time as a repeated-measure, fixed-effects included the same set of control variables as the analyses on perceived achievement

in addition to measurement time. A random effect of intercept was also included, taking into consideration that random variables not included in the model may influence levels of competency scores.[3]

Statistical Software. Analyses were conducted in the lavaan 0.5-23 package of R for CFAs, AMOS 22 for longitudinal measurement invariance, and SPSS version 19 or 22 for the rest of the statistical analyses.

Results

EFAs followed by CFAs Across Three Time Points

Using the sub-sample A, EFAs on all the 14 items of competencies revealed that one item regarding orderliness has few communalities (< .10) with the rest of the items at all three times, and thus was dropped from further analysis. At all three time points a three-factor solution was obtained with the total Eigenvalue greater than 1, accounting for 42.53% (time 1), 47.09% (time 2), and 47.10% (time 3) of the variance respectively. Based on the factor analysis, the items with factor loadings larger than .35 are interpreted (see Table 1 for the factor loadings). The first factor consists of items regarding taking initiatives, making an effort, and overcoming obstacles in achieving a challenging goal, and is therefore named "*Initiative for Challenge.*" The second factor consists of items regarding managing conflicts, persuasion and coordinating with others to gain support. Given the context of international volunteering, this factor is named "*Intercultural Negotiation.*" The third factor consists of items regarding analyzing, strategizing, and planning a project, managing stress, and adapting to new environment, and is named "*Project Management under Stress.*"

[3] Inclusion of measurement time as an additional random effect did not improve the model fit based on Akaike's Information Criterion nor change the findings of fixed-effects, and thus was eliminated in the reported final model.

[Insert Table 1 here]

Overall, similar loading patterns are found across the three measurement times and each factor is distinct and interpretable. However, the item e ("I enjoy trying various new methods to improve and implement something.") and the item h ("I enjoy convincing others who have different opinions and facilitating consensus as a leader.") loaded across two factors at time 2 and 3. To test for the stability of these results, the internal replicability analysis proposed by Osborne and Fitzpatrick (2012) was repeated ten times wherein half the sample was split randomly and examined for the stability of factor solutions. It was confirmed that a three-factor solution was consistently found; however, the structural replicability (i.e., which factor has the strongest loading for each item) failed mainly due to the same two items, item e and h, cross-loading on the two factors. Therefore, these items e and h were tested for potential exclusion in CFAs in the next step.

Using sub-sample B, a series of confirmatory factor analyses (CFAs) was conducted with maximum likelihood estimations on the competency items to examine the acceptability of factor structures separately for each measurement time point. Three models with three correlated factors varying in loading items were tested. The first model, Model 1, includes all the 13 items which mirrors the factor solutions extracted in the earlier EFA. Model 2 excluded the items e and h from the first model as suggested by the internal replicability analysis. The last model, Model 3, tested the modified structure based on the performance of the second model. Table 2 presents fit indices of these tested models.

[Insert Table 2 here]

As expected from the EFA outcomes, Model 1 had an overall poor model fit and some unacceptable fit indices, while Model 2 substantially improved fit indices over those of Model 1. However, fit indices for Model 2 are still only adequate and not considered to be good ($.90 < CFIs < .95$, $.06 < RMSEAs < .10$). To improve the fit of Model 2, modification indices were

examined to identify reasons for the lack of model adequacy. The modification indices showed that adding an error measurement correlation between the item g (persuade others) and the item i (coordinate/ gain support) would decrease the model's chi-square by 14.813, 13.41, and 21.55, with an expected parameter change (EPC) of -.09, -.09, and -.10 for time 1, time 2, and time 3 respectively. Model 3, therefore, added the error correlation between these items and results in slightly improved model indices across all the measurement times. Most of the fit indices are still not ideal and only adequate however; further alternations of the Model based on the modification indices based on Model 3 did not improve the model fit consistently across the measurement times nor improve the interpretability of the factor loadings. Therefore, Model 3 was chosen for the final model.[4] A graphical presentation of the final model is shown in Figure 1.

[Insert Figure 1 here]

The results of testing the final CFA model are shown in Table 3. Internal reliability assessed with Cronbach's alpha for *Project Management under Stress* construct is low across the three measurement points (αs > .63). Looking at the individual items of *Project Management under Stress* closely, two items directly ask about project-oriented management whereas the other two ask about personal management (i.e., k. managing stress and l. adapting to changes). The latter two items had relatively low factor loadings (.42 < λs <.52) across the three measurement times.

[Insert Table 3 here]

Longitudinal Measurement Invariance of the Revised Competence Measure

The results of the longitudinal measurement invariance test are provided in Table 4. The full information maximum likelihood (FIML) estimation was used for replacing missing values,

[4] There is no clear consensus on the thresholds for goodness of fit indices in CFAs (Hooper, Coughlan, and Mullen 2008).

thereby including all individuals who responded in any of the three measurement points (N = 1330). First, the configural invariance model (M1) indicated an adequate model fit, $\chi^2(423) = 1218.527$, $p < .0001$ (Table 4, first line),[5] and thus the initial configural model was established. Measurement invariance tests in the steps found that when parameter constraints were placed on factor loadings (Model 2) and factor variances (Model 3), the fitness of the model changed little, supporting its metric as well as structural invariances over time. This means that the variance and covariance of the scales can be adequately compared across the three measurement points. When all the intercepts were constrained, however, the model fit significantly dropped (ΔCFI = .005), rejecting the full scalar invariance (Model 4). This means that means of the scales based on the model may change due to reasons other than the true changes in the levels of these constructs.

To examine which items contributed to the lack of the full scalar invariance, unstandardized differences in estimates of item intercepts were examined. It was evident that the item l ("adapt to new and changes") and item c ("work hard for challenge") contributed two of the largest changes in their intercepts over time. Therefore, a partial scalar invariance model which freely estimates intercepts for both the item l and item c (M4.1), another partial scalar invariance model which freely estimates an intercept for only the item l (M4.2), and another partial scalar invariance model which freely estimates an intercept for only the item c (M4.3) were also tested. As result, the partial scalar invariance with two freely estimated intercepts (M4.1) was supported (ΔCFI = .001).

[Insert Table 4 here]

To examine which specific measurement points the partial scalar invariance occurs between, the same analysis of the longitudinal measurement invariance was repeated for each

[5] The primary parameter estimates obtained from the configural invariance are available upon request.

pair of measurement points, *time 1–time 2* (Table 5), *time 2–time 3* (Table 6), and *time 1–time 3* (Table 7). The results show that a similar pattern of partial scalar invariance was supported across *time 1–time 2* as well as *time 1–time 3*, whereas the full scalar invariance was supported across *time 2–time 3* (ΔCFI = .001 for the full scalar invariance). An intercept of the item c ("work hard for challenge") was found to be relatively more invariant across *time 1–time 2* (ΔCFI = .005 for M4.3 in Table 5), while those of both the item c and the item l ("adapt to new and changes") are relatively more invariant across *time 1–time 3* (ΔCFIs > .002, Table 7).

[Insert Table 5, 6, 7 here]

In summary, the results of the longitudinal measurement invariance tests indicate that: 1) items composed of and their relative importance for each competency (i.e., meaning of each of the three competencies) stay the same over time; 2) any changes in mean competency scores reflect changes in latent competencies overtime, particularly *during* and *after* volunteering; and 3) mean competence scores measured *before* the volunteering service may be partly characterized by different ways in which people answer the particular questions regarding "adapt to new and changes" and/or "work hard for challenge" over time. This warrants the use of composite scores for comparisons of competencies over time.

Competencies as Predictors of Perceived Volunteer Achievement

The results of the hierarchical regression analyses are shown in Table 8. Greater achievement at time 2 was predicted by *Initiative for Challenge* at time 2 (b = .15, t = 2.34, p = .02) above and beyond significant impacts of the volunteers' sector (human capital: b = .19, t = 2.50, p = .01), frequencies of visits by volunteer coordinator (b = .06, t = 2.12, p = .03), volunteer needs mismatch (b = -.08, t = -2.50, p = .01) as well as IV cultural immersion (b = .15, t = 2.26, p = .02) and stress (b = -. 17, t = -5.79, p = .00) at time 2. Greater achievement at time 3 was predicted by *Intercultural Negotiation* at time 2 (b = .18, t = 3.16, p = .01) above and beyond significant

impacts of volunteer needs mismatch (b = -.09, t = -2.66, p = .01) as well as IVs' cultural immersion (b = .21, t = 2.46, p = .01) and stress (b = -.07, t = -2.41, p = .02) at time 2. Furthermore, stress at time 3 was a significant predictor of greater achievement at time 3 (b = -.10, t = -2.55, p = .01).

Subtracting the baseline achievement score at time 2 from achievement score at time 3 resulted in negative value, suggesting that perceived achievement overall decreased from time 2 to time 3. The regression coefficient for the control of achievement at time 2 is negative, indicating that the less achieved at time 2, the less decline in achievement thereafter (b = -.63, t = -16.11, p = .00). The less decline in achievement from time 2 to time 3 was predicted by *Project Management under Stress* at time 3 (b = .14, t = 2.32, p = .02) above and beyond a significant impact of stress at time 3 (b = -.11, t = -3.01, p = .00).

[Insert Table 8 here]

Competencies as Predictors of Perceived Volunteer Outcomes

There are four dichotomous (yes or no) questions about the different kinds of changes or outcomes that volunteers observed in their host community at the end of the volunteer service. A hierarchical logistic regression was conducted on the presence of each outcome using the same hierarchical model that was used for the previous one to analyze perceived achievement at time 3 (Table 8). The analysis was conducted separately for the four questions.

Overall, the results show statistically significant impacts of competencies on new service development and attitude change in counterpart.[6] The results of the logistic regression analyses are provided in Table 9. Odds ratios indicate how many times more likely that IVs observed these outcomes when one unit of scores increased in the predictors. Likelihood of new service development was predicted by baseline *Initiative for Challenge* (b = .49, Odds ratio =

[6] No statistically significant impacts of competencies were found on the other two perceived impacts and thus results on these outcomes are not reported.

1.626, *p* = .03), *Project Management under Stress* at time 2 (*b* = .58, Odds ratio = 1.790, *p* = .02) and *Initiative for Challenge* at time 3 (*b* = .92, Odds ratio = 2.502, *p* = .00) above and beyond any significant impact of volunteer sectors (industrial/manufacturing: *b* = -1.15, Odds ratio = .318, *p* = .02) and IVs' prior experience in international volunteering (*b* = .67, Odds ratio = 1.962, *p* = .00).

Likelihood of attitude change was predicted by the baseline *Initiative for Challenge* (*b* = .51, Odds ratio = 1.657, *p* = .013) above and beyond the significant predictors of age (*b* = -.05, Odds ratio = .995, *p* = .04) and volunteer sector (administration: *b* = -.834, Odds ratio = .434, *p* = .01; industrial/manufacturing: *b* = -.97, Odds ratio = .380, *p* = .028). In addition, volunteer needs mismatch (*b* = -.23, Odds ratio = .794, *p* = .04) and IVs' effort to assimilate (*b* = .50, Odds ratio = 1.640, *p* = .01) were significant predictors.

[Insert Table 9 here]

Changes in the Key Competencies Over Time

Changes in each of the competencies over the three measurement time periods were examined in the mixed regression model, with the other variables known to influence volunteer outcomes in the model used as control variables (Table 10). An overall effect of time is significant across all three competencies, *Initiative for Challenge*: $F(2, 957) = 24.35$, *Intercultural Negotiation*: $F(2, 834) = 25.93$, and *Project Management under Stress*: $F(2, 904) = 8.01$, *ps* < .001 respectively. More specifically, a pairwise comparisons show that *Initiative for Challenge*, *Intercultural Negotiation*, and *Project Management under Stress* all declined from time 1 to time 2 at .16, .11, and .09 points, *ps* < .000, and increased from time 2 to time 3 at .08, .18, and .04 points, *ps* < .055. From time 1 to time 3, *Initiative for Challenge* and *Project Management under Stress* declined at .08 and .05 points, *ps* < .05, whereas *Intercultural Negotiation* increased at the .06 point, *p* < .05.

Ten out of fourteen control variables were also associated with these competencies at time 3.[7] First, older IVs reported lower scores on *Intercultural Negotiation* (*b* = -.01, *p* =.01). Second, male IVs reported generally higher scores than female IVs across all three competencies (at .19, .18, and .11 points, *ps* < .01). Third, there was an overall effect of volunteer sector on *Intercultural Negotiation* and *Project Management under Stress*, $F(4, 544) = 3.06$ and $F(4, 545) = 3.95$, *ps* < .05, respectively. For *Intercultural Negotiation*, IVs in the administration sector reported higher scores than those in the human capital and public health sectors, at .11 and .13 points, *ps* < .05. The latter sectors showed scores higher than those in industrial/manufacturing sector at .22 and .20 points, *ps* < .05. For *Project Management under Stress*, IVs in the administration sector reported higher scores than those in the human capital, agriculture, and public health sectors at .13, .20, and .21 points respectively, *ps* < .05. Fourth, the more IVs had prepared for their technical skills before departure, the higher the scores reported for *Initiative for Challenge* and *Project Management under Stress* (*bs* = .04 and .03, *ts* = 2.17 and 2.06, *ps* < .05). Fifth, the more IVs had prior experience in international volunteering, the higher were the scores reported for *Initiative for Challenge* and *Intercultural Negotiation* (*bs* = .12 and .10, *ts* = 3.03 and 2.32, *ps* < .05). Sixth, when IVs were dispatched as a group rather than on an individual assignment, their *Intercultural Negotiation* scores were .14 point lower, *p* = 02. Seventh, the more a volunteer coordinator visited their placement, the lower the score reported on *Initiative for Challenge* (*b* = -.04, *t* = 02.16, *p* = .03). Eighth, the more IVs put their effort into assimilation to local culture, the higher were the scores reported on all three competencies (*bs* = .14, .19, and .13, *ts* = 3.69, 4.87, and 4.00, *ps* < .001). Ninth, IVs who experienced cultural immersion before 1 year into their volunteer service reported a .17 higher score on *Initiative for Challenge* than those who did not, *p* = .00. Lastly, stress was related to all the competencies, wherein higher stress was associated with lower scores on *Initiative for Challenge*, *Intercultural Negotiation*,

[7] Time 3 was the reference group.

and *Project Management under Stress* (*bs* = -.06, -.05, and -.09, *ps* < .05). The remaining variables, such as education, preparation in information gathering, distance to JICA office and volunteer needs mismatch had no statistically significant association with any of the competency scores at time 3.

Discussion

The present study showed that initiative for challenge, intercultural negotiation, and project management under stress, all predicted perceived volunteer achievement and outcomes on counterpart at different stages of volunteering by using the affective measure of competencies and the sample of Japanese IVs (i.e., JOCVs) between the age of 20 and 39 who were dispatched to one of the 88 developing countries for a period of two years. The affective measure of these competencies demonstrated adequate stability and structural validity over time, but they first declined toward the end of the first year, and then increased toward the end of the volunteer service overall. Details of these findings are further discussed below, followed by limitations and implications for practice.

Competencies as Predictors of Perceived Volunteer Achievement and Outcomes

IVs who reported higher levels of initiative for challenge perceived greater achievement around the end of the first year, while those who reported higher levels of intercultural negotiation perceived greater achievement at the end of their volunteering service. Although majority of the IVs declined their perception of achievement during their second year of volunteering, its decline was reduced for those who reported higher levels of project management under stress. When it comes to perceived outcomes on counterpart, baseline initiative for challenge was predictive of the likelihoods of new service development and attitudes change among local staffs,

and project management under stress in the first year and initiative for challenge again in the last year further added explanation for the new service development.

These findings generally support three conditions of innovation by new comers proposed by Levin, Choi, and Moreland (2003), and further demonstrate which competency is critical at different stages of long-term international volunteering. First, initiative for challenge played the role as a driver for success and innovation at all stages by achieving the initial goal in the middle of the service duration, as well as generating new service and attitude changes in host community at the end. It seems that success is fundamentally driven by IV motivation throughout the volunteering period.

Second, intercultural negotiation played a more critical role in the middle toward the end of the service. This may be related to cultural immersion that is known to be associated with intercultural competencies (Lough 2010). In the current survey, 84% of the respondents reported that they had experienced cultural immersion by the end of the first year. Convincing people with different cultural background requires understanding of the differences in the first place. Accordingly, competence in intercultural negotiation may occur after the initial cultural immersion has been achieved.

Third, the current study incorporated an aspect of “management of stress” in addition to a general ability to manage projects into one of the key competencies of IVs, project management under stress. As predicted, this competence seems to play the initially role in generation actionable ideas for new services in developing communities. Moreover, it buffers against the decline in achievement after the mid-point, which is about the time when IVs may start to lose track of their original plan and initial impetus in achieving goals.

Changes in the Key Competencies Over Time

In support of the notion that IV learning involves negative experiences such as failure and disappointment (Fee and Gray 2013; Sekine 2016), the present study also found that all the key

competencies overall declined in the first year and increased in the latter half of the year, forming a V-shape curve. The initial decline in their competencies seems inevitable as they must first acclimate to a completely new cultural environment and establish a basic rapport with their local counterpart before they start anything new. As explained earlier, JOCVs are required to first come up with their own activity plan in alignment with their commission and reach an agreement with their counterpart within the first six months. Although they receive intensive language training prior to departure, many of their local language proficiency may not be high enough to handle complicated conversations beyond that needed for basic survival. Indeed, 42% of the survey respondents reported that they were “worried” or “very worried” about the language (6 and 7 out of a 7-point Likert-type scale) prior to departure.

After one year, about the time majority of the IVs experienced cultural immersion, these competencies increased more or less, and in particular, intercultural negotiation exceeded the level before volunteering. This further lends support for the impact of international volunteering in intercultural competencies (e.g., Jones 2005; Kelly and Case 2007; Yashima 2013; Lough 2010; Lough et al. 2014; McBride et al. 2010). In contrast, initiative for challenge and project management under stress did not reach the levels reported before volunteering. Initiative for challenge could have declined for many reasons. At the end of volunteering, IVs had to face the reality of what international volunteering could do by participation, and unfulfilled aspirations and concerns may remain. For example, Sekine (2016) found that many of the JOCVs in the Pacific Islands region faced an unanticipated reality of “apathetic” or “perfunctory” local people about development of their communities. Often expressed by ex JOCVs is their concern for sustainability of their achievement after they have left the community, especially when there has been no volunteer assigned after their placement. These are remaining questions to be examined by future research.

The decline of project management under stress seem to be reasonable given that it was first rated in the context of their home country before volunteering (i.e., the Japanese work place),

and in the context of a foreign developing community for rating during and at the end of volunteering. This may simply indicate that two years of foreign experience is not sufficient to manage projects under stress as efficaciously as one could do at a familiar workplace in a home country.

Other Predictors of IVS Outcomes

Based on the conceptual model for predictors of international volunteering service outcomes by Sherraden et al. (2008), the current study included additional variables as statistical control in regard to personal attributes (age, gender, education, sector, skills preparation, information gathering, and prior experience), placement attributes (assignment type, frequencies of visits by volunteer coordinator, distance to JICA office, and volunteer needs mismatch), and psycho-social processes (effort to assimilate, cultural immersion, and stress). Out of these fourteen variables, most of the variables were associated with either the perceived achievement, new service development, attitude change in counterpart, or IV competencies.

Among personal attributes, age had differing impacts depending on the outcomes. Younger IVs were more likely to induce attitude change but less likely to generate new services in host community compared to older IVs. Age is a universal indicator of social status which is known to facilitate persuading old-timers to accept new ideas (Levin and Kaarbo 2001; Moreland and Levine 1989) and may add to IVs' assets in bringing about new projects in host communities. On the other hand, younger IVs may have different strengths. According to Shimoda (2013), youth plays a role in connecting vertical social relationships in intercultural work place by building non-work relationships and creating spaces for cultural exchange. Attitude change often occurs outside of one's awareness (Wilson and Brekke 1994) and may naturally occur when pleasant moments are shared between IVs and counterpart during such non-work social interactions.

Furthermore, volunteer sector was associated with all of the outcomes. Those in the human capital sector experienced relatively high achievement within the first year; those in industrial/manufacturing sector were less likely to innovate new service nor induce attitude change, and reported low values in intercultural negotiation; those in administration sector were the highest on intercultural negotiation and project management under stress while less likely to induce attitude change. Nature of activities and tasks involved may be qualitatively different and scope of contributions by IVs may be bounded by sectors, which may explain some of these differences. Furthermore, prior experience in international volunteering had an impact on new service development as well as IV competencies, particularly the initiative for challenge and intercultural negotiation. Although skills preparation and information gathering did not directly impact achievement outcomes, skills preparation was associated with both the competencies of initiative for challenge and project management under stress.

In regard to placement attributes, volunteer needs mismatch had negative impacts on both perceived achievement as well as attitude change in counterpart. For IVs' psycho-social processes, in support of Sherraden et al. (2008), effort to assimilate was associated with attitude changes as well as all of the competencies at the end of volunteer service while cultural immersion was associated with achievement throughout the service period as well as initiative for challenge. Moreover, stress was associated with all of the outcomes except new service development.

The present study was not specifically designed to test these predictors, and therefore presence of the significant predictors may be affected by factors other than the true nature of their relationships. Future research is needed to analyze mechanisms which explain the influences of those predictors.

The Affective Measure of Competency and its Structural Validity

The present study proposed an affective measure of competencies based on control-value theory (Pekrun 2006; Pekrun, Frenzel, Goetz, and Perry 2007), which considers emotions as one of the feedback mechanisms for evaluative systems in the context of learning and achievement tasks. Consistent with the theory, the current study found that competencies measured by levels of "joy" associated with each of the key competencies are associated with perceived achievement in the context of international volunteering. Furthermore, adopting questionnaire items from the survey which purposes to assess the Fundamental Competencies for Working Persons (FCWP), the current study suggests that initiative for challenge, intercultural negotiation, and project management under stress are particular aspects of the FCWP that are transferable from JOCVs to the globalizing Japanese work environment.

This measure was also cross-validated for its structure with three factors (i.e., initiative for challenge, intercultural negotiation, and project management under stress) that are distinct but correlated with each other. However, the internal reliability of *Project Management under Stress* was relatively low across all three measurement points ($\alpha s < .70$) and needs to be improved in future studies.

The present study further examined the longitudinal invariance of this measure. Partial scalar invariance was confirmed wherein factor loadings and item intercepts for each of the competencies (except for a few items, hence "partial") were constant, with minor exceptions, across the three measurement points. That is, overall meanings of these key competencies did not change over time and therefore average scores can be reasonably compared across these three measurement times. However, minor occasions of variant items appeared in the initiative for challenge and project management under stress as measured before volunteering. Therefore, one may carefully interpret these scores measured before volunteering by allowing for the fact that they were rated in a different context, most likely the IVs' previous work place in Japan.

Nonetheless, the current findings suggest that this measure may be a useful tool for tracking how well IVs are performing over the course of long-term volunteering.

Limitations

There are several limitations to the present study. First, volunteer goal achievement and outcomes are based on self-report and not cross-validated by counterpart, host community members or a neutral third party. Therefore, perceived achievement and outcomes may be influenced by a combination of various factors such as social desirability, expectation of achievement, and situational difficulties. A similar issue applies to other variables, such as degrees of cultural immersion and preparation in skills and information gathering.

Second, the present study sampled the Japanese IVs (JOCVs) who were dispatched between 2011 and 2015. Therefore, the findings may not generalize to different cohorts of JOCVs or other types of international volunteers. Furthermore, the proposed affective measure of competencies is inevitably constrained not only by the nature of the sample but also by the selection of survey items. The current measure needs to be further improved and tested with different samples, especially with different types of international volunteers, for its replicability and generalizability.

Third, the present study has no comparison group and does not assess the impact of volunteering itself on competencies. That said, the study looks at associations among the characteristics of IVs, including their competencies, and perceived volunteer outcomes over time.

Policy Implications

There are several implications for practice based on the present research findings. First, in order to maintain and facilitate IVs' initiative for challenge throughout a volunteering period, their accomplishments should be acknowledged whenever possible and flexible attitudes about

volunteer goals should be fostered, especially among those who struggle. Since there are many vulnerability factors in developing world, one cannot plan everything well in advance and expect things to go as scheduled. This would be in striking contrast to a structured and formal work place in Japan (Hofstede 1984; Hofstede 1993). Such cultural gaps can cause stress (Kristof 1996), and IV initiatives for challenge may wane if IVs are not able to cope with the stress and adjust their plans and expectations to the changing environment.

Second, instances in which IVs had to change their activity plans due to vulnerability factors in the local community may be informative for future volunteers when they need to mentally prepare for similar unexpected events and plan alternative strategies to cope with the vulnerabilities. As the current research showed, the ability to manage projects under stress is an important aspect of successful international volunteering for development. Flexible and agile project management should be promoted in the work of international volunteering.

Third, pre-departure training on intercultural negotiation may be helpful for IVs to better leverage their assets and prevent interpersonal conflicts and stress due to cultural and socio-economic differences. General tactics in dealing with uncertain situations due to cultural differences and strategies not to aggravate potentially hostile situations could benefit all IVs across different sectors and communities.

Compared to other development workers, IVs arrive in developing communities with less leverage due to a lack of sufficient resources and clear plans or expertise in development cooperation. Therefore, understanding of power dynamics in the community may be critical in successful negotiations. Culture affects power dynamics and information flows not only in dyadic relationships but also groups and social networks (Gelfand and Cai 2004). These complex cultural systems are often shared among members of a culture embedded in its structures and hardly accessible to complete outsiders. Tacit knowledge may include an organization's coordination mechanisms and organizational routines that play significant roles in technological innovation and organizational learning (e.g., Senker 1995; Howells 1996; Nonaka

and Takeuchi 1995). Because tacit knowledge is not stated or spoken explicitly and is contextualized and personalized in networks of human relations, one needs to be embedded within an organization as part of the system through practical experience and it takes time to acquire this knowledge. Thus, learning from experienced IVs would be beneficial.

This may be accomplished by connecting former and current volunteers in the same community and counterpart, if available, as well as connecting with other international and local volunteers in the area to facilitate the knowledge exchange. Tacit knowledge is highly contextualized and too personalized to summarize or document. Thus, it may be the best to simply provide an open space, physical or virtual, for active and former volunteers in the area to freely connect and share information to support each other on an individual basis.

Fourth, IV competencies are constantly evolving through overcoming struggles rather than suddenly emerging as a result of completing the volunteering program. Monitoring and understanding the environment in which volunteers increase versus decrease their competencies would inform program managers and volunteer coordinators to strategize how to intervene in securing enabling environment for the IVs. In doing so, volunteer programs may administer the measure of competencies along with asking volunteers to report on actual instances which correspond to their answers to the questions. In this way, program managers/coordinators can immediately access instances in which interventions are needed by running queries for low competency scores in the data base. Furthermore, these instances may be accessed by future volunteers to understand how similar themes may appear across different volunteer contexts and what various ways there are to manage different problems. Moreover, the volunteers who fill out the survey and report those instances themselves can benefit from this practice as well. For example, they gain better understanding of their competencies at work and can prepare themselves for a competency-based interview in which employees ask for real examples of concrete situations and behavioral descriptions of their competencies.

Lastly, the present study also found that one of the obstacles beyond the volunteers' competencies is the initial assignment mismatch due to the rapidly changing needs of local counterparts. One obvious solution is for volunteer programs to monitor needs of counterpart organizations more closely and speed up the process of volunteer recruitment. However, this approach may not be feasible or cost effective. A simple cost-effective change that can be made would be to promote termination of volunteering in the face of the apparent lack of counterparts' involvement. Off course, the "lack of counterparts' involvement" needs to be objectively assessed, not by relying on volunteers' self-reports. Volunteer coordinators may intervene and assess the situation.

Conclusions

This is the first study that I know of that has examined the direct relationship between the competencies of IVs and their volunteer performance by treating competencies as predictors rather than as outcomes. The three competencies, initiative for challenge, intercultural negotiation, and project management under stress were significant predictors even after controlling for many theoretically important variables, promising that these competencies play important roles in successful volunteering. The present study also took the first step in quantitatively demonstrating that the competencies of IVs fluctuate over time during the service. The V-shape learning curve over the two-year period of international volunteering may still be an over simplification, yet, it is a step forward in uncovering the dynamic process of learning and achievement through international volunteering.

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Table 1.

Factor Structure after Promax Rotation for Competencies Before, During, and After Volunteering Based on sub-sample A

	Before (n = 521)			During (n = 427)			After (n = 506)		
	Ⅰ	Ⅱ	Ⅲ	Ⅰ	Ⅱ	Ⅲ	Ⅰ	Ⅱ	Ⅲ
a. I enjoy situations in which I can take actions in achieving an organizational goal.	**.73**	.07	-.03	**.81**	-.01	-.04	**.59**	.15	.02
b. I enjoy taking an initiative to achieve the challenging goal.	**.66**	.25	-.13	**.78**	.17	-.18	**.80**	.21	-.20
c. I enjoy making an effort to achieve a challenging goal.	**.54**	.00	.15	**.62**	-.08	.23	**.61**	-.04	.16
d. I enjoy working when it requires overcoming many and various kinds of obstacles.	**.58**	-.12	.17	.34	.08	.31	**.45**	-.04	.30
e. I enjoy trying various new methods to improve and implement something.	**.46**	-.12	.33	**.49**	-.15	**.46**	**.49**	-.19	**.42**
f. I enjoy understanding others' feelings and persuade them effectively to manage conflicts.	.00	**.73**	.04	-.18	**.78**	.18	-.18	**.62**	.40
g. I enjoy persuading others.	-.18	**.76**	.18	.14	**.69**	-.06	.04	**.67**	.00
h. I enjoy convincing others who have different opinions and facilitating consensus as a leader.	.32	**.53**	-.10	**.38**	**.57**	-.20	**.35**	**.58**	-.11
i. I enjoy coordinating with people to gain support from them.	.32	**.41**	-.10	-.04	**.57**	.26	.07	**.49**	.29
j. I enjoy analyzing underlying issues and pitfalls from strategic or logistical perspectives.	-.11	.22	**.55**	.00	.22	.32	.01	.13	**.44**
k. I can manage stress and work steadily.	.03	.00	**.39**	-.09	.02	**.45**	-.12	.17	**.47**
l. I enjoy changes and adapt to new environment.	.27	-.11	**.40**	-.01	.05	**.59**	.23	-.06	**.49**
m. I enjoy planning how to operationalize a work project.	.31	.11	**.40**	.23	.17	.32	.28	.03	**.49**

Factor loadings more than absolute values of .35 are bolded.

Table 2.

Fit indices for the three measurement models across three measurement times on sub-sample B

Model	χ^2	df	χ^2/df	CFI	RMSEA	AIC
Before (n=524)						
1. Full-item Model	271.513	62	4.379	.892	.080	13672.084
2. Reduced-item Model	153.557	41	3.745	.922	.072	11691.327
3. Modified Reduced-item Model	137.726	40	3.443	.932	.068	11677.495
During (n=431)						
1. Full-item Model	235.263	62	3.795	.903	.081	11339.492
2. Reduced-item Model	140.715	41	3.432	.927	.075	9758.337
3. Modified Reduced-item Model	126.04	40	3.151	.937	.071	9745.662
After (n=511)						
1. Full-item Model	330.983	62	5.338	.88	.092	12800.32
2. Reduced-item Model	188.087	41	4.587	.913	.084	10976.172
3. Modified Reduced-item Model	164.248	40	4.106	.927	.078	10954.333

Figure 1. Revised measurement model for key competencies of international volunteers.

Note: Initiative= Initiative for Challenge; Negotiation = Intercultural Negotiation; Project Management = Project Management under Stress

Table 3.

Standardized loadings[a] *(λ_i), measurement errors (δ_i), Cronbach's alpha (α_i), and factor correlations (Φ_{ij}) from the final model of the competencies of IVs on sub-sample B*

Items of constructs	Before (n=524)		During (n=431)		After (n=511)	
	λi	*δi*	*λi*	*δi*	*λi*	*δi*
Initiative						
a. I enjoy situations in which I take the initiative in achieving an organizational goal.	0.72	0.48	0.75	0.44	0.79	0.38
b. I enjoy taking the initiative to achieve a challenging goal.	0.74	0.45	0.79	0.38	0.79	0.38
c. I enjoy making an effort to achieve a challenging goal.	0.56	0.68	0.67	0.55	0.65	0.58
d. I enjoy working when it requires overcoming many and various kinds of obstacles.	0.53	0.72	0.53	0.72	0.57	0.68
*Cronbach's alpha for **Initiative***	*0.73*		*0.78*		*0.79*	
Negotiation						
f. I enjoy understanding others' feelings and persuade them effectively to manage conflicts.	0.76	0.42	0.71	0.50	0.69	0.52
g. I enjoy persuading others.	0.67	0.55	0.77	0.41	0.66	0.56
i. I enjoy coordinating with people to gain support from them.	0.76	0.43	0.77	0.41	0.80	0.35
*Cronbach's alpha for **Negotiation***	*0.74*		*0.75*		*0.72*	
Management						
j. I enjoy analyzing underlying issues and pitfalls from strategic or logistical perspectives.	0.59	0.65	0.64	0.59	0.57	0.68
k. I can manage stress and work steadily.	0.42	0.82	0.42	0.83	0.44	0.81
l. I enjoy changes and adapt to new environment.	0.49	0.76	0.44	0.80	0.52	0.73
m. I enjoy planning how to operationalize a work project. (Th)	0.68	0.54	0.76	0.42	0.72	0.48
*Cronbach's alpha for **Management***	*0.63*		*0.66*		*0.66*	
Factor correlations (*Φij*)						
Φ_{12} (Initiative, Negotiation)	0.64		0.62		0.67	
Φ_{23} (Negotiation, Management)	0.61		0.53		0.64	
Φ_{13} (Initiative, Management)	0.69		0.67		0.75	

[a] Completely standardized solutions are reported where both latent and observed variables are standardized.

Table 4.

Longitudinal measurement invariance tests of competencies over time (N = 1330)

Model	χ^2	df	$\Delta\chi^2$	Δdf	CFI	ΔCFI	RMSEA
1 configural invariance (M1)	1218.527	423	-	-	.933	-	.038
2 metric invariance (M2) vs. M1	1238.027	439	19.5	16	.933	.000	.037
3 structural invariance (M3) vs. M2	1248.942	445	10.915	6	.933	.000	.037
4 full scalar invariance (M4) vs. M3	1324.485	461	75.543	16	.928	.005	.038
4.1 partial scalar invariance 1 (M4.1) vs. M3	1269.488	457	20.546	12	.932	.001	.037
4.2 partial scalar invariance 2 (M4.2) vs. M3	1290.477	459	41.535	14	.930	.003	.037
4.3 partial scalar invariance 3 (M4.3) vs. M3	1303.501	459	54.559	14	.929	.004	.037

Table 5.

Longitudinal measurement invariance tests of competencies across time 1 and time 2 (N = 1330)

Model	χ^2	df	$\Delta\chi^2$	Δdf	CFI	ΔCFI	RMSEA
1 configural invariance (M1)	577.649	181	-	-	.941	-	.041
2 metric invariance (M2) vs. M1	588.282	189	10.633	8	.941	.000	.040
3 structural invariance (M3) vs. M2	596.167	192	7.885	3	.940	.001	.040
4 full scalar invariance (M4) vs. M3	645.305	200	49.138	8	.934	.006	.041
4.1 partial scalar invariance 1 (M4.1) vs. M3	604.344	198	8.177	6	.940	.000	.039
4.2 partial scalar invariance 2 (M4.2) vs. M3	612.509	199	16.342	7	.939	.001	.040
4.3 partial scalar invariance 3 (M4.3) vs. M3	637.153	199	40.986	7	.935	.005	.041

Table 6.

Longitudinal measurement invariance tests of competencies across time 2 and time 3 (N = 1330)

Model	χ^2	df	$\Delta\chi^2$	Δdf	CFI	ΔCFI	RMSEA
1 configural invariance (M1)	701.475	181	-	-	.929	-	.047
2 metric invariance (M2) vs. M1	711.574	189	10.099	8	.929	.000	.046
3 structural invariance (M3) vs. M2	717.368	192	5.794	3	.928	.001	.045
4 full scalar invariance (M4) vs. M3	735.484	200	18.116	8	.927	.001	.045
4.1 partial scalar invariance 1 (M4.1) vs. M3	725.256	198	129.089	6	.928	.000	.045
4.2 partial scalar invariance 2 (M4.2) vs. M3	727.417	199	131.25	7	.928	.000	.045
4.3 partial scalar invariance 3 (M4.3) vs. M3	733.323	199	137.156	7	.927	.001	.045

Table 7.

Longitudinal measurement invariance tests of competencies across time 1 and time 3 (N = 1330)

Model	χ^2	df	$\Delta\chi^2$	Δdf	CFI	ΔCFI	RMSEA
1 configural invariance (M1)	791.775	181	-	-	.919	-	.050
2 metric invariance (M2) vs. M1	801.288	189	9.513	8	.919	.000	.049
3 structural invariance (M3) vs. M2	804.276	192	2.988	3	.919	.000	.049
4 full scalar invariance (M4) vs. M3	849.03	200	44.754	8	.914	.005	.049
4.1 partial scalar invariance 1 (M4.1) vs. M3	818.799	198	222.632	6	.917	.002	.049
4.2 partial scalar invariance 2 (M4.2) vs. M3	839.072	199	242.905	7	.915	.004	.049
4.3 partial scalar invariance 3 (M4.3) vs. M3	828.76	199	232.593	7	.916	.003	.049

Table 8.
Hierarchical regression on volunteer goal achievement at time 2, time 3, and its change (n = 595)

		Achievement at T2		Achievement at T3		Change in Achievement	
Steps	Predictors	R^2	B	R^2	B	R^2	B
0	Achievement T2					.35***	**-0.63*** **
1	Age		-0.01		0.00		0.01
	Gender (female)		0.07		0.12		0.10
	Education (below BA)		0.10		0.05		0.04
	Education (Grad)		0.10		0.13		0.10
	Education (International BA)		0.17		0.21		0.14
	Education (International Grad)		0.15		0.27		0.21
	Sector (human capital)		**0.19***		0.10		0.05
	Sector (administration)		0.03		0.04		0.04
	Sector (agricultural/)		0.16		-0.05		-0.05
	Sector (industrial/)		-0.15		-0.12		-0.08
	Skills preparation		0.03		0.05*		0.04
	Informational preparation		0.02		0.01		0.00
	Prior experience	.04*	0.05	.04	0.06	.02	0.05
2	Initiative T1		0.09		0.08		
	Negotiation T1		0.09		0.08		
	Management T1	.02*	0.01	.01	-0.01		
3	Assignment type (individual)		0.07		0.07		0.09
	Coordinator visits		0.06*		0.04		0.02
	Distance to JICA office		-0.01		0.03		0.02
	Needs Mismatch		**-0.08***		**-0.09****		-0.07
	Effort		0.05		-0.02		-0.01
	Cultural immersion		**0.15***		**0.21***		0.11
	Stress T2	.10**	**-0.17****	.05 **	**-0.07***	.01	-0.01
4	Initiative T2		**0.15***		-0.06		
	Negotiation T2		0.04		**0.18****		
	Management T2	.02*	0.06	.03**	0.10		
5	Stress T3			.01 *	**-0.10***	.01**	**-0.11****
6	Initiative T3				0.03		0.02
	Negotiation T3				0.01		0.04
	Management T3			.01	0.12	.02 **	**0.14***

* p < .05 ** p < .01 *** p < .001

Table 9. Logistic regression analyses of New Service and Attitude Change (n = 554)

		New Service		Work Attitudes	
		$\chi^2\Delta$ | $R^2\Delta^b$	Exp(B)	$\chi^2\Delta$ | $R^2\Delta^a$	Exp(B)
1	Age		1.051*		.955*
	Gender (female)		.682		.834
	Education (below BA)		1.288		1.021
	Education (Grad)		1.204		.894
	Education (International BA)		0.648		0.585
	Education (International Grad)		1.391		1.392
	Sector (human capital)		.677		.635
	Sector (administration)		.869		.434**
	Sector (agricultural)		.785		.523
	Sector (industrial)		.318*		.380*
	Skills preparation		1.044		1.010
	Informational preparation		.975		1.134
	Prior experience	24.909* | .064	1.962**	22.346* | .055	1.224
2	Initiative T1		1.626*		1.657*
	Negotiation T1		.882		1.149
	Management T1	9.494* | .087	1.288	9.231* | .077	.763
3	Assignment type (individual)		2.048*		1.507
	Coordinator visits		.853		1.058
	Distance to JICA office		.986		.962
	Needs Mismatch		1.148		.794*
	Effort		1.146		1.640**
	Cultural immersion		1.045		.955
	Stress T2	10.662 | .113	1.013	17.045* | .116	.933
4	Initiative T2		.636		1.030
	Negotiation T2		1.345		1.174
	Management T2	10.148* | .135	1.790*	1.309 | 119	.815
5	Stress T3	1.187 | .140	.857	.014 | .119	1.016
6	Initiative T3		2.502**		1.220
	Negotiation T3		.701		1.249
	Management T3	11.895** | .168	.741	3.960 | .128	1.105

[b] Nagelkerke R^2 is reported

Table 10. Estimates of Fixed Effects *(n* = 553)

	Initiative			Negotiation			Management		
	Est	SE	p	Est	SE	p	Est	SE	p
Intercept	2.64	.26	.00	3.06	.28	.00	2.69	.23	.00
Time 1[a]	**0.08**	.02	.00	**-0.06**	.03	.02	**0.05**	.02	.04
Time 2[a]	**-0.08**	.02	.00	**-0.18**	.03	.00	-0.04	.02	.06
Age	-0.01	.00	.24	**-0.01**	.01	.01	0.01	.00	.23
Gender (male)	**0.19**	.04	.00	**0.18**	.04	.00	**0.11**	.04	.00
Education (below BA)[b]	-0.01	.13	.92	-0.24	.14	.09	-0.04	.12	.76
Education (BA)[b]	0.08	.12	.52	-0.18	.13	.18	0.02	.11	.89
Education (graduate)[b]	0.13	.13	.33	-0.26	.14	.06	0.10	.11	.36
Education (international BA)[b]	0.17	.20	.40	-0.21	.21	.31	0.17	.17	.32
Sector (human capital)[c]	**0.15**	.05	.00	0.02	.06	.73	0.08	.05	.08
Sector (administration)[c]	**0.15**	.06	.02	**0.13**	.07	.05	**0.21**	.06	.00
Sector (agricultural)[c]	0.07	.09	.43	-0.03	.10	.75	0.01	.08	.90
Sector (industrial)[c]	0.06	.09	.48	**-0.20**	.10	.04	0.06	.08	.43
Skills preparation	**0.04**	.02	.03	0.01	.02	.53	**0.03**	.01	.04
Informational preparation	0.02	.01	.11	0.01	.02	.45	0.01	.01	.59
Prior experience	**0.12**	.04	.00	**0.10**	.04	.02	0.02	.04	.64
Assignment type (individual)	0.01	.06	.81	**-0.14**	.06	.02	-0.04	.05	.37
Coordinator visits	**-0.04**	.02	.03	-0.02	.02	.33	-0.03	.02	.06
Distance to JICA office	-0.03	.02	.10	-0.03	.02	.06	-0.01	.01	.54
Needs Mismatch	0.03	.02	.24	0.01	.02	.74	0.00	.02	.81
Effort	**0.14**	.04	.00	**0.19**	.04	.00	**0.13**	.03	.00
Cultural immersion	**0.17**	.04	.00	0.06	.05	.24	0.06	.04	.15
Stress	**-0.06**	.02	.00	**-0.05**	.02	.02	**-0.09**	.02	.00
-2 Log Likelihood	2434.18			2761.23			2298.22		

[a] Predicts the difference from Time 3

[b] Estimated in comparison to international graduate

[c] Estimated in comparison to public health

Significant estimates are in bold.

Appendix 1

	N	Mean	SD	Min	Max
Perceive Volunteer Goal Achievement					
Achievement T2	863	2.78	0.70	1	4
Achievement T3	994	2.74	0.65	1	4
Perceived Impacts on Counterpart					
Service Expansion	976	0.38	0.49	0	1
New Service	977	0.33	0.47	0	1
Skills	975	0.48	0.50	0	1
Attitude Change	975	0.48	0.50	0	1
Competencies					
Initiative T1	1045	3.09	0.57	1	4
Negotiation T1	1045	2.78	0.63	1	4
Management T1	1045	3.04	0.52	1	4
Initiative T2	858	2.94	0.61	1	4
Negotiation T2	858	2.66	0.65	1	4
Management T3	858	2.95	0.54	1	4
Initiative T1	1018	3.02	0.57	1	4
Negotiation T2	1017	2.81	0.61	1	4
Management T3	1017	2.98	0.53	1	4
IVs Attributes					
Education (below BA)	204	15.3%			
Education (BA)	700	52.6%			
Education (graduate)	179	13.5%			
Education (international BA)	22	1.7%			
Education (international graduate)	27	2.0%			
Sector (human capital)	577	43.4%			
Sector (administration)	276	20.8%			
Sector (agricultural)	83	6.2%			
Sector (industrial)	72	5.4%			
Sector (public health)	297	22.3%			
Skills preparation	1048	2.07	1.24	0	4
Informational preparation	1048	1.76	1.38	0	4
Prior experience	1028	0.52	0.50	0	1
Placement Attributes					
Assignment type (1= group, 2=individual)	1312	1.87	0.33	1	2
Coordinator visits*	1030	3.93	0.93	1	5
Distance to JICA office**	1022	2.81	1.13	1	4
Needs Mismatch	866	0.70	0.87	0	3
IVs Psycho-social processes					
Effort	863	3.10	0.55	1.33	4.00
Cultural immersion	876	0.76	0.43	0	1
Stress time2	861	3.31	0.95	1	7
Stress time3	1013	3.60	0.92	1.00	6.11

* 1 = never, 2 = 1 time, 3 = 2 times, 4 = 3~4 times, 5 = 5 or above

** 1 = less than 10 km, 2 = 10~99 km, 3 = 100~299 km, 4 = 300 km or above

Percentages are reported for nominal variables instead of means

Abstract (in Japanese)

要約

先行研究では、国際ボランティアに従事することで、さまざまな能力−個人的、社会的、文化的−が醸成されると示している。その一方で、「どういった能力がボランティア活動の達成や配属先における成果の発揮に繋がるか」という見地での研究はいまだに希少である。本研究では、派遣前、派遣中、帰国時に JICA 研究所が実施した青年海外協力隊への意識調査データをもとに、何が協力隊活動の成功のカギとなるコンピテンシーであるかを分析。同時に、それらが時系列に従って、どのように変化するかを分析した。また、従来の能力測定における自己評価とは異なるアプローチをとり、感情指標によるコンピテンシーの測定を提唱した。今回、合計 1330 人の回答者からなるパネルデータを基に、コンピテンシー測定項目における因子分析と因子的不変性分析等の尺度検定を行った。その結果、3 時点において近似の因子構造からなる「挑戦的自発性」、「異文化交渉力」、「抗ストレスプロジェクトマネージメント力」の 3 つの潜在因子が抽出された。

全体的に見ると、これらのコンピテンシーは派遣中に一度下がり、帰国時までに（再び）上昇する傾向にあった。これらのコンピテンシーはいずれもボランティア活動の達成度に影響しており、それが各コンピテンシーによって派遣期間中どの時期であるかによって影響の仕方が違うことが明らかになった。派遣前から「挑戦的自発性」が高く、活動前半に「抗ストレスプロジェクトマネージメント力」が高く、活動後半に「挑戦的自発性」が高かった隊員は、配属先に新規サービス・活動をもたらす場合が多い。また、派遣前から「挑戦的自発性」が高い隊員はその後のコンピテンシーの変化に関係なく、より現地のスタッフの働き方に影響を及ぼしていることが明らかになった。

これらの結果の解釈には、隊員の自己報告に基づく分析である点、「抗ストレスプロジェクトマネージメント力」指標の信頼性が低い点、また分析枠組みの限界などの留意点を踏まえる必要性を考慮に入れている。隊員がこれらの３つのコンピテンシーを発揮し、よりボランティア活動の成果を上げるためには、どのような実務的な取り組みが考えられるのか。本研究結果を踏まえ、議論した。

キーワード：青年海外協力隊(JOCV)、コンピテンシー、国際ボランティア、ボランティア成果、非認知能力尺度

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