

Need Satisfaction Mechanism Linking Volunteer Motivation and Life Satisfaction: A Mediation Study of Volunteers Subjective Well-Being

Yan Yuen Kwok · Wing Hong Chui · Lok Ping Wong

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Abstract A mediation model explaining volunteers' subjective well-being was tested in this paper. It examined the effect of intrinsic motivation on volunteers' life satisfaction, using the need satisfaction experienced through volunteering as an intervening variable. A questionnaire was administered to 443 participants, not all of whom had previous experience of volunteering. Mediation analysis suggested a path from intrinsic motivation to volunteers' life satisfaction through the need satisfaction experienced during volunteering. Neither volunteer participation per se nor extrinsic motivation was related to life satisfaction. The roles of motivation and need satisfaction in volunteers' life satisfaction were identified, with implications for future volunteer programs.

Keywords Volunteerism · Motivation · Life satisfaction · Mediation model · Hong Kong Chinese

1 Introduction

Volunteering is a unique form of helping behavior. Unlike any other prosocial behavior, it is non-spontaneous, since the helper actively seeks out the chance to help and maintains the assistance over time. It is also non-remunerative, though it requires a period of commitment from the helper despite them being under no obligation to assist (Clary and Snyder 1999; Clary et al. 1998; Omoto and Snyder 1995). Because of its deliberate, effortful, and continued nature, volunteering has given rise to a body of research examining the motivation of those who participate in it. This suggests that volunteer motivation functions as an antecedent to the

Y. Y. Kwok · W. H. Chui (✉) · L. P. Wong
Department of Social Work and Social Administration, The University of Hong Kong, Pokfulam Road,
Pokfulam, Hong Kong
e-mail: ericchui@hku.hk

Y. Y. Kwok
e-mail: pinky.kwok@gmail.com

L. P. Wong
e-mail: josephine_wong1@hotmail.com

entire process and could affect its occurrence and consequences (see, for example, Chacón et al. 2007; Davis et al. 2003; Omoto and Snyder 1995). However, this research has not focused on how volunteer motivation influences volunteers' own well-being.

Against this backdrop, the present research endeavors to extend existing work on volunteer motivation by considering its relationship with the volunteer's subjective well-being. Using self-determination theory as the conceptual framework, it also takes into account the need satisfaction experienced during volunteering in order to elucidate the possible relationships between these various aspects.

2 Literature Review

2.1 Volunteerism and Life Satisfaction

Life satisfaction means an individual's subjective judgment of his/her life against a self-selected standard (Shin and Johnson 1978). It is one of the three components of subjective well-being, representing the cognitive evaluation of one's current state of affairs, and is considered a key indicator in investigating individuals' overall quality of life (Pavot and Diener 2008; Rice et al. 1985).

A considerable number of studies confirmed the positive effect of volunteering on life satisfaction. Individuals who have performed volunteer work reported higher life satisfaction than non-volunteers (Duncan and Whitney 1990; Hunter and Linn 1980–1981; Stukas et al. 2008). People also consistently report an increased sense of life satisfaction and perceived improvement in quality of life after participation in volunteer programs (Fengler 1984; Harel and Lindenberg 1981; Morrow-Howell et al. 1999; Van Willigen 2000; Wheeler et al. 1998). More involvement in volunteering and membership of voluntary associations are also related to an increase in life satisfaction (Aquino et al. 1996; Thoits and Hewitt 2001; Van Willigen 2000).

There is also evidence that helping behavior per se is not a sufficient condition for bolstering an individual's well-being; it is the motives underlying the action that matter (Gebauer et al. 2008; Weinstein and Ryan 2010). Only volunteers who undertake community service for altruistic reasons experience this increased sense of well-being (Dulin et al. 2001).

There are a number of notable aspects of this work which are worthy of further investigation. Firstly, most of the aforementioned studies on volunteering and life satisfaction deal exclusively with the elderly, probably because volunteering is assumed to play a more crucial role in their lives than for other age groups (Wilson and Musick 1999). However, as the effects of volunteering might be different across different stages of life (Wilson and Musick 1999), the results from work with elderly volunteers cannot necessarily be generalized to other age groups. Although a handful of studies look at younger volunteers (see, for example, Benson et al. 1980), they are mostly descriptive and correlational, with only a few directly addressing the causal relationship between the two variables of interest. It is impossible to conclude from such a study design that volunteering predicts well-being.

Accordingly, the mechanism of how volunteering affects volunteers' subjective well-being remains unclear. Much of the existing research documenting the positive effect of volunteering on life satisfaction measures the former in terms of the absence or presence of volunteer participation or membership of voluntary organizations, or the degree of involvement in terms of hours of work undertaken. It does not consider the effects of individual attributes other than the volunteering behavior itself. When incorporating individual attributes, such as motivation, into such an investigation, behavior itself cannot

account for the variance in individual well-being experienced. It is therefore necessary to broaden the focus and to provide a more comprehensive scenario in order to elucidate the relationship between volunteering and life satisfaction more fully.

2.2 Self-Determination Theory and Helping Behavior

A core tenet of self-determination theory is that there are three innate basic psychological needs underlying all human motivations (Ryan and Deci 2000a, b). Different types of motivations can satisfy these needs, promoting optimal functioning and enhancing individual well-being to varying extents (Ryan and Deci 2000a, b). The three fundamental psychological needs are *autonomy* (the need for a free and volitional pursuit of behavior), *competence* (the sense of effectiveness and mastery), and *relatedness* (the need to connect with others).

Self-determination theory also addresses the issue of human motivation and posits a distinction between its intrinsic and extrinsic forms. The former is characterized by behavior undertaken because of the interest and enjoyment inherent in the task itself, and is the self-expression of an individual's inner values. It thus constitutes a propensity that facilitates the fulfillment of basic psychological needs. Meanwhile, extrinsically motivated behavior denotes the pursuit of an outcome external to the behavior itself, and is hence instrumental in nature (Ryan and Deci 2000a, b).

Self-determination theory has been used to address the link between motivation and the helper's well-being in a number of prosocial studies. Intrinsically-motivated helping behavior, but not action driven by extrinsic motivation, has a positive relationship with personal well-being (Gebauer et al. 2008). Prosocial behaviors prompted by controlled motives, like mandated volunteering, relate negatively to volunteer satisfaction, while helping behaviors driven by autonomous motivation result in a greater sense of well-being in the helper (Finkelstein et al. 2005; Weinstein and Ryan 2010). From these studies, it is apparent that people are motivated to help by a variety of reasons, not all of which are associated with improved well-being.

A model in which basic psychological need satisfaction is the mediator between helping motives and helper well-being outcomes has been established in research on prosocial behavior (Weinstein and Ryan 2010). According to self-determination theory, motivation is the "quality of experience that energizes behavior" (Weinstein and Ryan 2010: 223), while basic need satisfaction refers to the process of receiving psychological nutrients to facilitate growth and well-being. Well-being will improve when one's behaviors have the capacity to satisfy the three basic needs. Accordingly, giving intrinsically-motivated help is the prerequisite for satisfying each of the three basic psychological needs; the more a behavior is driven by intrinsic motivations, the greater its capacity to satisfy needs (Weinstein and Ryan 2010). Need satisfaction accounts for the relationship between prosocial behaviors and the well-being that results from them (Weinstein and Ryan 2010). However, whether such a mediation model is applicable to the field of volunteering needs further exploration.

2.3 Functional Approach to Volunteer Motivation

Functionalist theorizing is the most influential approach in studies of volunteer motivation. It proposes that different people can engage in the same action of volunteering in order to perform a wide array of functions, and similarly, an individual can volunteer to carry out multiple functions (see, for example, Clary and Snyder 1999; Clary et al. 1998; Omoto and

Snyder 1995, 2002). This theory has been used as the basis for developing the Volunteer Functions Inventory (VFI), and identifying six underlying motivations for volunteering (Clary et al. 1998). The *values* motive denotes the expression of personal values like altruism and humanitarianism. The *understanding* function refers to the seeking out of learning opportunities and the acquisition of knowledge and skills. The *enhancement* motive focuses on promoting a positive outlook through taking opportunities for personal growth. The *career* motive is associated with volunteering to help one's career. The *social* motive reflects a response to the normative influences of one's social network, and the *protective* motive functions as an approach to tackling personal problems or negative affect.

The volunteer functional approach is compatible with self-determination theory in providing an explanatory mechanism for volunteer motivation. For example, the functional theorists, who have long attempted to classify the six motives using a dichotomous approach, defined the *values* motive as altruistic and the remaining five motives as self-serving or egoistic (Clary and Snyder 1991). Only altruistic motivation is thought to be related to positive outcomes from the subsequent volunteering process such as longer period of service (Clary and Orenstein 1991). Finkelstein (2009) divides the six motives into internal and external categories, and demonstrates that the two types can lead to different consequences in terms of volunteer activities. These findings are akin to those generated by the work on prosocial behavior using self-determination theory. Consistent with the literature, the present study attempts to categorize the six functional motives using the intrinsic-extrinsic distinction. Motivations are labeled as intrinsic when they connote an expression of personal values inherent in the helping behavior itself (that is, altruism) whereas extrinsic motivations refer to the pursuit of any end external to the volunteering act. Factor analysis is conducted to provide statistical evidence.

2.4 Need Satisfaction Experienced in Volunteering

Volunteering has been repeatedly acknowledged as a process which empowers the participants (Wu et al. 2009). Firstly, it can promote a productive lifestyle and sense of efficacy, with volunteers able to enrich their own lives and exert a positive influence on the lives of others (Aday and Kehoe 2008; Caprara and Steca 2005; Wilson and Musick 1999). Research shows that volunteers perceived themselves as having enhanced self-efficacy (Wilson and Musick 1999), while older volunteers experience a higher sense of generativity after taking part (Morrow-Howell et al. 1999). In this way, volunteering can contribute to satisfying the need for *competence*.

Volunteering can also be seen as a form of social participation that fosters integration (Wilson and Musick 1999). It provides an opportunity for the volunteer, service recipient, and voluntary organization to establish mutually-rewarding relationships (Caprara and Steca 2005; Wilson and Musick 1999). Volunteers report an increased sense of socialization after volunteering (Morrow-Howell et al. 1999), which contributes to the satisfaction of the *relatedness* need. Last, but not least, volunteering can also meet the *autonomy* need because it is an intentional action that is dependent on the helper's decision to initiate help and continue to give it (Clary and Snyder 1999).

Given these research findings and the underlying conceptual logics, we are convinced that volunteering can be considered as a supportive context that can facilitate individuals to meet the three basic psychological needs. However, the concept of need satisfaction has never been measured in any study of volunteering. We therefore propose to use the multidimensional Volunteer Satisfaction Index (VSI) (Galindo-Kuhn and Guzley 2001) to measure this variable. This instrument has been developed especially for use in volunteering settings and

is thus better able to capture the features of such a distinct form of helping behavior. Furthermore, the identified dimensions of volunteer satisfaction are parallel to the three basic psychological needs proposed by self-determination theory. Most importantly, volunteer satisfaction is defined in terms of how the volunteer's needs are fulfilled (Galindo-Kuhn and Guzley 2001), which corresponds to the concept of need satisfaction. This study therefore set out to collect evidence for the VSI's construct validity in this setting.

2.5 Volunteering in Hong Kong

Research on volunteering in Hong Kong has generally been in line with the Western work (see, for example, Wong et al. 2011; Wu et al. 2009). When compared to individuals not participating, volunteers report better subjective well-being (including life satisfaction) and fewer psychological problems such as distress (Wu et al. 2005). Other work has explored the underlying motives for volunteering in the local context, for instance, factors influencing initial involvement and persistence in volunteer services (Cheung et al. 2006; Yiu et al. 2001). These studies contributed to promoting volunteering and facilitate local organizations' recruitment and retention of participants. However, they have produced only limited knowledge about the mechanism explaining volunteers' gains in well-being.

3 The Present Study

The present study set out to investigate a number of hypotheses concerning volunteering, volunteer motivation, need satisfaction, and life satisfaction. Firstly, we address the relationship between volunteering and the volunteer's well-being. We hypothesize that:

1. Previous volunteer experiences will not be related to life satisfaction, so there will be no group difference in life satisfaction between people who have and have not volunteered before.
- 2a. Intrinsic motivation will be related to both life and volunteer satisfaction; it will have a positive correlation with the former, and also with need satisfaction.
- 2b. Extrinsic motivation will not be related to either life or volunteer satisfaction. No significant correlations will be found between these variables.

The second set of hypotheses predicts the mediation model that explains the relationships between volunteer motivation, need satisfaction through volunteering, and life satisfaction. We hypothesize that:

- 3a. Intrinsic motivation will have a direct overall effect on life satisfaction, mediated by volunteer satisfaction.
- 3b. Extrinsic motivation will not predict life satisfaction, and thus will not be included in the mediation model.

4 Method

4.1 Participants

A total of 443 participants were recruited from 4 tertiary institutions and non-governmental organizations (NGOs), with a final response rate of 75 %. Participation was voluntary.

After obtaining consent, questionnaires were delivered to the participants either in hard copy during classes (for those in tertiary institutions) or electronically through the Internet (for NGO respondents). The mean age of participants was 24.9 (SD = 8.22). Most had previous volunteering experiences (82.4 %), were female (69.1 %), Chinese (98.4 %), students (58.9 %), single (85.3 %), and did not have children (90.3 %). The majority had been educated to tertiary level (72.0 %). Almost half had no religious background (46.5 %). To ensure that the form of questionnaire distribution would not affect the results, an independent *t* test was performed to compare the hard copy ($n = 344$) and the Internet ($n = 98$) group on all major measurement scores. No significant difference was found, so no statistical adjustment in the subsequent analysis was required.

4.2 Measures

The questionnaire collected data about the participants' volunteering-related experiences, volunteer motivation, need satisfaction experienced in volunteering, and life satisfaction. Demographic information was also captured. All of the scales were translated into Chinese.

4.2.1 Volunteering-Related Experiences

Participants were asked to indicate if they had volunteered before. If not, they were directed to skip the volunteering-related questions which followed. If they had, they were also asked about the number of target groups.

4.2.2 Volunteer Motivation

The VFI (Clary et al. 1998) consists of 30 items arranged along 6 subscales and measures the reasons behind volunteering. Each subscale contains five items that tap into one of the six volunteering motives, *values*, *understanding*, *social*, *career*, *protective*, and *enhancement*. Each item is measured using a 7-point Likert-type scale, ranging from 1 (*not at all important/accurate*) to 7 (*extremely important/accurate*). Sample items include: "I feel compassion toward people in need" (*values*) and "Volunteering increases my self-esteem" (*enhancement*). The VFI has been validated using a Chinese student sample (Wu et al. 2009) and demonstrated a satisfactory internal consistency, ranging from .70 to .91.

To test whether the six motivations captured in the volunteer functional approach correspond to the intrinsic-extrinsic categorization as proposed by self-determination theory, exploratory factor analysis (EFA) was conducted. The number of valid cases was 443. The Kaiser–Meyer–Olkin (KMO) test and Bartlett's Test of Sphericity were carried out, with the results showing the dataset to be appropriate for factor analysis.

All of the 30 items were then subjected to a principal component analysis with Varimax rotation. Two dimensions were found, each with an eigenvalue exceeding 1, based on the criterion of eigenvalues greater than 1 and the result of a scree plot test (Cattell 1966). The two-factor solution accounted for 55.8 % of the total variance, with the first accounting for 46.7 % and the second 9.1 %. The first factor consisted of four items from the original *values* motive and had a good coefficient alpha of .84. The remaining 26 items, including 1 item from the original *values* motive, were all self-serving in nature and comprised the second factor, which had an excellent Cronbach's alpha of .93. The two factors had a significant correlation of .53. As the factor analysis results supported the categorization of

Table 1 Results of exploratory factor analysis for the volunteer functions inventory

Items	Factor loadings	
	1	2
13. Volunteering increases my self-esteem	.736	
10. I can make new contacts that might help my business or career	.699	
30. I can explore my own strengths	.675	
21. Volunteering will help me to succeed in my chosen profession	.670	
23. Volunteering is an important activity to the people I know best	.665	
15. Volunteering allows me to explore different career options	.662	
26. Volunteering makes me feel needed	.662	
12. I can learn more about the cause for which I am working	.660	
05. Volunteering makes me feel important	.660	
22. I can do something for a cause that is important to me	.624	
27. Volunteering makes me feel better about myself	.622	
09. By volunteering I feel less lonely	.615	
06. People I know share an interest in community service	.611	
01. Volunteering can help me to get my foot in the door at a place where I would like to work	.601	
29. Volunteering is a way to make new friends	.596	
17. Others with whom I am close place a high value on community service	.580	
20. Volunteering helps me work through my own personal problems	.576	
07. No matter how bad I have been feeling, volunteering helps me to forget about it	.576	
25. I can learn how to deal with a variety of people	.567	
04. People I am close to want me to volunteer	.563	
18. Volunteering lets me learn things through	.551	
28. Volunteering experience will look good on my resume	.539	
02. My friends volunteer	.539	
11. Doing volunteer work relieves me of some of the guilt over being more fortunate than others	.537	
14. Volunteering allows me to gain a new perspective on things	.514	
24. Volunteering is a good escape from my own troubles	.446	
19. I feel it is important to help others		.535
08. I am genuinely concerned about the particular group I am serving		.496
16. I feel compassion towards people in need		.494
03. I am concerned about those less fortunate than myself		.377

motivations into intrinsic and extrinsic, this dichotomous approach was used in all succeeding analyses. The factor loadings are summarized in Table 1.

4.2.3 Need Satisfaction Through Volunteering

This variable was measured using the VSI (Galindo-Kuhn and Guzley 2001). It consists of 26 items, with responses captured using on a 7-point Likert-type scale, ranging from 1 (*strongly dissatisfied*) to 7 (*strongly satisfied*). The authors of the scale identify four dimensions of satisfaction; *organizational support*, *participation efficacy*, *empowerment*, and *group integration*. However, a validation study conducted in Hong Kong found three different

dimensions; *personal gain*, *relationship within organization*, and *relationship with peers*, with reliabilities ranging from .60 to .93 (Wong et al. 2011). Sample items include: “The amount of permission I need to get to do the things I need to do on this job,” “The progress that I have seen in the clientele served by my organization,” and “My relationship with other volunteers in the organization.” To provide psychometric evidence for the VSI as a valid measure of basic psychological need satisfaction, an independent sample of 56 participants was recruited to complete the VSI and the Basic Psychological Needs Scale (Ilardi et al. 1993). Factor analysis was firstly conducted for the VSI. The 26 items were subjected to a principal component analysis with Varimax rotation. A one-item solution was found based on the result of the scree plot test (Cattell 1966), accounting for 64.4 % of the total variance. An excellent overall Cronbach’s alpha of .98 was obtained. As the factor analysis results supported a one-factor solution, the overall score of this measure was used in all succeeding analyses.

To provide the construct validity of the measure, the VSI’s association with the Basic Psychological Needs Scale was also explored (Ilardi et al. 1993). The Scale measures the degree to which the participants experience the satisfaction of their needs for autonomy, competence, and relatedness. Responses are captured using a 7-point Likert-type scale ranging from 1 (*not at all true*) to 7 (*very much true*). Sample items include “In my daily life, I frequently have to do what I am told” (autonomy, reverse item); “Often, I do not feel very competent” (competence, reverse item); and “I get along with people I come into contact with” (relatedness). The VSI composite mean score was significantly correlated with the overall score of the Basic Psychological Needs Scale ($r = .67, p < 0.01$), and its autonomy ($r = .72, p < 0.01$), competence ($r = .61, p < 0.01$), and relatedness ($r = .70, p < 0.01$) subscales. This provided evidence for the VSI’s convergent validity as a measure of basic need satisfaction.

4.2.4 Life Satisfaction

This was measured using the Satisfaction with Life Scale (Diener et al. 1985). This one-dimensional scale consists of five items and was developed to measure general life satisfaction. Participants are asked to rate each item on a 7-point Likert-type scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). An example of an item is: “In most ways my life is close to my ideal.” It has been validated locally (Wang et al. 2009) with good internal consistency, as shown by the overall coefficient alpha of .88.

4.2.5 Demographic Variables

Relevant demographic characteristics including sex, age, marital status and religion were also collected.

5 Results

5.1 Preliminary Analyses

Preliminary analyses were carried out to examine the relationships between the demographic variables (including age and gender), participation in voluntary services, and the independent, mediation, and dependent variables of the study. The relationships among the study variables were also explored. Bivariate correlation analyses and independent samples t tests were used for continuous and categorical variables, respectively. As participants

who had no volunteer experience ($n = 78$) were not asked to complete the VFI or VSI, the relevant analyses reported here used data only from those participants with prior experiences.

Among the series of independent-samples t tests conducted, volunteer participation did not lead to any group difference in life satisfaction (mean = 4.99, 5.11, $t = -1.33$, $p = 0.17$). Bivariate correlations were also conducted to examine the relationships between the study variables. Intrinsic motivation was positively related to life satisfaction ($r = .16$, $p < 0.01$) and need satisfaction ($r = .49$, $p < 0.01$). On the other hand, need satisfaction was significantly correlated not only with life satisfaction ($r = .25$, $p < 0.01$) but also with extrinsic motivation ($r = .39$, $p < 0.01$). These findings confirm our hypotheses 1 and 2a, with intrinsic motivation encompassed in the mediation analysis. However, they give only partial support to hypothesis 2b.

Further preliminary analyses were also conducted to test whether any covariates needed to be included in our model. A significant gender difference was found in intrinsic volunteer motivation, volunteer satisfaction, and life satisfaction. Compared with males, females reported higher levels of intrinsic motivation (mean = 5.18, 5.49, $t = -3.19$, $p < 0.05$), need satisfaction (mean = 4.75, 5.01, $t = -3.04$, $p < 0.05$), and life satisfaction (mean = 4.99, 5.25, $t = -2.06$, $p < 0.05$). Pearson correlation analyses also showed that age had a significantly positive relationship with intrinsic volunteer motivation ($r = .13$, $p < 0.05$).

The results of the independent samples t tests are summarized in Tables 2 and 3, while Table 4 presents the Pearson's correlation coefficients of the demographic information (that is, age) with the study variables, and also among the study variables, together with their means and standard deviations.

5.2 Mediation Analyses

To demonstrate the mediating effect of volunteer satisfaction on the relationship between volunteer motivation and life satisfaction, the procedures proposed by Baron and Kenny (1986) were carried out. Four criteria had to be fulfilled: (1) variation in the independent variable is significantly related to variation in the dependent variable, (2) variation in the independent variable is significantly related to variation in the mediator variable, (3) variation in the mediator variable is significantly related to variation in the dependent variable, and (4) the relationship between the independent and dependent variables is significantly reduced after controlling for the effects of the mediator on the latter.

Hierarchical multiple regression analyses were conducted to examine the mediating effect. Intrinsic motivation was included as the predictor in the model, as extrinsic motivation was not significantly correlated with life satisfaction. Age and gender were also entered as the two covariates, but neither was significant in any of the following analyses.

Firstly, to establish the total effect of the predictor on the outcome variable, life satisfaction was regressed on intrinsic motivation (Condition 1), which predicted it

Table 2 Descriptive statistics and t test values of life satisfaction on volunteer participation

Scale	With volunteer participation M (SD)	Without volunteer participation M (SD)	t test value
Life satisfaction	5.11 (1.31)	4.99 (1.13)	n.s.

$N = 433$. Mean (SD) of life satisfaction for participants with and without volunteer participation: 5.08 (1.19)

Table 3 Descriptive statistics and *t* test values of volunteer motivation, need satisfaction, and life satisfaction on gender

Scale	Male M (SD)	Female M (SD)	<i>t</i> test value
Volunteer motivation			
Intrinsic	5.18 (0.92)	5.49 (0.66)	-3.19**
Extrinsic	4.09 (1.02)	4.24 (0.83)	n.s.
Need satisfaction	4.75 (0.81)	5.01 (0.72)	-3.04**
Life satisfaction	4.99 (1.22)	5.25 (1.07)	-2.06*

N = 365. ** $p < 0.01$, * $p < 0.05$

Table 4 Means, standard deviations, correlations of study variables, and demographic information of participants with volunteer experience

Variable	Correlations coefficients				Mean	SD
	Age	Life satisfaction	Volunteer motivation			
			Intrinsic	Extrinsic		
Age	-				25.48	8.68
Life satisfaction	n.s.	-			5.17	1.13
Intrinsic motivation	.13*	.16**	-		5.38	0.77
Extrinsic motivation	-.26**	n.s.	.53**	-	4.19	0.89
Volunteer satisfaction	n.s.	.25**	.49**	.39**	4.92	0.76

N = 365. ** $p < 0.01$, * $p < 0.05$

significantly ($\beta = .24$, $t = 2.90$, $p < 0.01$) beyond the effect of the demographic variables ($\Delta R^2 = .035$, $p < 0.01$). The more a volunteer was intrinsically motivated, the higher level of life satisfaction he/she experienced. The assumption that intrinsic motivation predicted volunteer satisfaction was then tested (Condition 2), and the results supported this association ($\beta = .48$, $t = 9.85$, $p < 0.01$) beyond the effect of age and gender ($\Delta R^2 = .50$, $p < 0.01$). Volunteers who reported higher intrinsic motivation experienced a stronger sense of need satisfaction through volunteering. To delineate the path between the intervening and dependent variables, volunteer satisfaction was regressed on life satisfaction, with the relationship demonstrated ($\beta = .35$, $t = 3.91$, $p < 0.01$) beyond the effect of the control variables ($\Delta R^2 = .062$, $p < 0.01$). The higher level of need satisfaction experienced through volunteering resulted in more life satisfaction.

Finally, we created an equation regressing intrinsic motivation and volunteer satisfaction simultaneously on life satisfaction. After controlling for the effect of volunteer satisfaction, the effect of intrinsic motivation on life satisfaction was no longer significant ($\beta = .07$, $p = 0.18$), $\Delta R^2 = .004$, $p = 0.18$. This provides evidence of full mediation for the model (Baron and Kenny 1986), implying no relationship between intrinsic motivation and life satisfaction when volunteer satisfaction is included. The regression coefficients of the sets of analyses are illustrated in Fig. 1, and the results of the regression analyses are summarized in Table 5.

To provide a formal test of the indirect effect in the model, the Sobel test was applied, using the normality assumption as well as the nonparametric bootstrapping procedure. The Sobel test is more powerful than Baron and Kenny's (1986) procedure because it directly addresses the change in total effect after incorporation of the mediator, instead of deducing

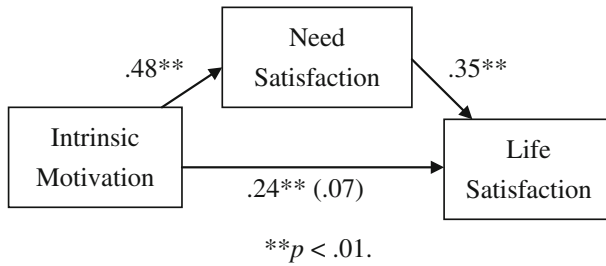


Fig. 1 Model of the mediational role of need satisfaction experienced in volunteering in the relationship between volunteer motivation and life satisfaction. Value in *parentheses* is the non-significant correlation coefficient when the mediator is present

Table 5 Means, standard deviations, correlations of study variables, and demographic information of participants with volunteer experience

Regression	<i>B</i>	SE	<i>t</i>	<i>p</i>
Total effect of intrinsic motivation on life satisfaction	.24	.08	2.90	0.004
Intrinsic motivation to need satisfaction	.48	.05	9.85	0.000
Need satisfaction to life satisfaction	.35	.09	3.91	0.000
Direct effect of intrinsic motivation on life satisfaction	.07	.09	0.77	0.439
Partial effect of control variables on life satisfaction				
Gender	.14	.13	1.11	0.27
Age	.01	.01	.74	0.46

N = 365

the conclusion from several stepwise hypothesis tests. Meanwhile, the bootstrapping procedure avoids any power problem induced by the nonnormal distribution by deriving a confidence interval from a bootstrapped sampling distribution (Preacher and Hayes 2004).

The indirect effect estimated by the formal two-tailed significance test was significant (Sobel $z = 3.56, p < 0.01$). The bootstrapping approach result further confirmed that the indirect effect was significantly different from zero, with the true indirect effect approximated to lie between .02 and .35, $p < 0.01$, after a request for 1,000 bootstrap samples. These results are critical evidence that volunteer satisfaction mediates the relationship between intrinsic motivation and life satisfaction, and thus support hypotheses 3a and 3b. The Sobel test and bootstrap results are summarized in Table 6.

6 Discussion

The contribution volunteering makes to the well-being of volunteers has not been the central focus of inquiry in previous research. No study before this has examined the mechanisms linking motivation to volunteers' well-being and explaining the relationship. This study has examined the connection between volunteering motivation and life satisfaction, and investigated the intervening effect of need satisfaction on this relationship. The results support the proposed model, suggesting that the need satisfaction experienced through volunteering plays a crucial intervening role in connecting volunteer motivation with life satisfaction.

Table 6 Results of indirect tests

	Value	SE	LL95CI	UL95CI	<i>z</i>	<i>p</i>
Sobel test for indirect effect and significance using normal distribution	.17	.05	.08	.26	3.56	0.00
	M	SE	LL99CI	UL99CI		
Bootstrap results for indirect effect	.17	.06	.02	.35		

N = 365. Unstandardized regression coefficients are reported. Bootstrap sample size = 1,000

LL lower limit, *CI* confidence interval, *UL* upper limit

The study firstly attempted to seek psychometric evidence for the use of the measures for volunteer motivation and need satisfaction. By using EFA, a dichotomous approach to categorizing the six functional volunteer motives was identified for the VFI. Four elements of the original *values* motive were identified as being linked to intrinsic motivation, with the remaining items associated with extrinsic motivation. This is reasonable, because all motivations except the expression of altruism should be considered as seeking ends extrinsic to the action of volunteering. For the VSI, a one-factor solution was obtained, and its convergent validity with basic need satisfaction established through correlation analysis. These results indicate that the VSI has sufficient construct validity to be used as a measure of need satisfaction through volunteering.

Participation in volunteering of itself did not, in our study, contribute to improved subjective well-being. People who had volunteered, compared with those who had never done so, did not judge themselves to have gained more life satisfaction. On the other hand, the impact of the two types of motivation on life satisfaction was different. Volunteers reported a higher life satisfaction when their participation was more intrinsically motivated, while no such relationship was found for extrinsic motivation. Our results confirm that volunteering motivation, or to be specific, *intrinsic* volunteering motivation, is the determinative factor in volunteers deriving greater life satisfaction from helping others. These findings are consistent with evidence presented in previous research on prosocial behavior, which shows that the underlying motivation, not the helping behavior itself, predicts the consequential impact of involvement on subjective well-being (see, for example, Weinstein and Ryan 2010).

The mediation analyses we performed extended these findings further. After the need satisfaction obtained through volunteering was taken into account, the direct effect of intrinsic volunteer motivation on life satisfaction no longer existed. This implies that intrinsically-motivated volunteers experienced more life satisfaction because their experience had enhanced the satisfaction of their basic needs. According to self-determination theory, intrinsic motivation could be a prerequisite for individuals to experience increased need satisfaction, explaining the relationship between motivation and well-being. The effects identified in our study are consistent with our theoretically-derived hypotheses. Such a mediation framework presents an account of the complex scenario depicting who can benefit from volunteering, and how such gains are derived. It may also suggest effective ways of developing and promoting future volunteering programs. In order to facilitate volunteers' well-being, such programs may need to focus more on helping them meet their needs for *competence*, *relatedness*, and *autonomy*.

An unexpected finding was that although extrinsic motivation had no association with life satisfaction, it was significantly linked to need satisfaction. The higher one's

motivation, the higher the level of need satisfaction experienced. While it did not matter for this purpose whether the motivation was intrinsic or extrinsic, the latter had relatively weaker association with need satisfaction. These findings seemed to contrast with the initial hypotheses. However, after reviewing findings from some previous studies, we identified a possible explanation.

Self-determination theory proposes that individuals have to demonstrate, throughout their lives, certain prescribed behaviors that are without intrinsic values (Deci and Ryan 2000; Ryan and Deci 2000a, b) but which are required in order to meet one's responsibilities. In this process, some non-intrinsic motivations will be internalized and integrated as personally-endorsed values (Ryan and Deci 2000a, b). It is proposed that when such non-intrinsic motivations have been strongly internalized, they will also result in the satisfaction of needs, but to a much lesser extent than for genuinely intrinsic motivations (Deci and Ryan 2000; Ryan and Deci 2000a, b). This proposition is consistent with our results.

Despite the merits of the present study, it has several limitations that require its findings to be treated with caution. Although support for the causality of our model has been provided by the mediation analysis, this analysis should not be considered as an approach to determining causation definitively (Pedhazur and Schmelkin 1991). Instead of adopting a cross-sectional design, future studies could use a longitudinal approach to explore further the development of need satisfaction and life satisfaction throughout the volunteering process, so that causal relationships among variables can be demonstrated.

Another limitation concerns the rationale of the "multiplicity of motives" (Clary and Snyder 1991) employed in the VFI. As the measurement we used enabled participants to cite multiple reasons for volunteering, all of them reported having both intrinsic and extrinsic motivations. Future studies may wish to investigate whether any interaction effects exist between the two types, so as to delineate their effects more precisely.

In conclusion, the mediation model tested here draws attention to the role of volunteer motivation and need satisfaction in improving volunteers' subjective well-being. The study also identifies the relationships between various variables involved in the volunteer process, and provides a new perspective in developing future volunteer programs.

References

- Aday, R. H., & Kehoe, G. (2008). Working in old age: Benefits of participation in the senior community service. *Journal of Workplace Behavioral Health, 23*, 125–145.
- Aquino, J. A., Russell, D. W., Cutrona, C. E., & Altmaier, E. M. (1996). Employment status, social support, and life satisfaction among the elderly. *Journal of Counseling Psychology, 43*, 480–489.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychology research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173–1182.
- Benson, P., Dehority, J., Garman, L., Hanson, E., Hochschwender, M., Lebold, C., et al. (1980). Intrapersonal correlates of nonspontaneous helping behavior. *The Journal of Social Psychology, 110*, 87–95.
- Caprara, G. V., & Steca, P. (2005). Self-efficacy beliefs as determinants of pro-social behavior conducive to life satisfaction across ages. *Journal of Social and Clinical Psychology, 24*, 191–217.
- Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate Behavioral Research, 1*, 245–276.
- Chacón, F., Vecina, M. L., & Dávila, M. C. (2007). The three-stage model of volunteers' duration of service. *Social Behavior and Personality, 35*, 627–642.
- Clary, E. G., & Orenstein, L. (1991). The amount and effectiveness of help: The relationship of motives and abilities to helping behavior. *Personality and Social Psychology Bulletin, 17*, 58–64.
- Clary, E. G., & Snyder, M. (1991). A functional analysis of altruism and pro-social behavior: The case of volunteerism. In M. Clark (Ed.), *Pro-social behavior: Review of personality and social psychology* (Vol. 12, pp. 119–148). Thousand Oaks, CA: Sage.

- Clary, E. G., & Snyder, M. (1999). The motivations to volunteer: Theoretical and practical considerations. *Current Directions in Psychological Sciences*, 8, 156–159.
- Clary, E. G., Snyder, M., Ridge, R., Copeland, J., Stukas, A., Haugen, J., et al. (1998). Understanding and assessing the motivations of volunteers: A functional approach. *Journal of Personality and Social Psychology*, 74, 1516–1530.
- Davis, M. H., Hall, J. A., & Meyer, M. (2003). The first year: Influences on the satisfaction, involvement, and persistence of new community. *Personality and Social Psychology Bulletin*, 29, 248–260.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and the “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227–268.
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49, 71–75.
- Dulin, P., Hill, R., Anderson, J., & Rasmussen, D. (2001). Altruism as a predictor of life satisfaction in a sample of low-income older adult service providers. *Journal of Mental Health and Aging*, 7, 349–360.
- Duncan, D. F., & Whitney, R. J. (1990). Work and the mental well-being of the elderly. *Psychological Reports*, 66, 882.
- Fengler, A. P. (1984). Life satisfaction of subpopulations of elderly: The comparative effects of volunteerism, employment, and meal site participation. *Research on Aging*, 6, 189–212.
- Finkelstein, M. (2009). Intrinsic vs. egoistic motivational orientations and volunteer process. *Personality and Individual Differences*, 46, 653–658.
- Finkelstein, M. A., Penner, L. A., & Brannick, M. T. (2005). An examination of role identity and motives among hospice volunteers. *Social Behavior and Personality*, 33, 403–418.
- Galindo-Kuhn, R., & Guzley, R. M. (2001). The volunteer satisfaction index: Construct definition, measurement, development, and validation. *Journal of Social Service Research*, 28, 45–68.
- Gebauer, J., Riketta, M., Broemer, P., & Maio, G. (2008). Pleasure and pressure based pro-social motivation: Divergent relations to subjective well-being. *Journal of Research in Personality*, 42, 399–420.
- Harel, Z., & Lindenberg, R. (1981). Community service opportunities and older Americans. *Journal of Sociology and Social Welfare*, 8, 111–121.
- Hunter, K., & Linn, M. (1980). Psychosocial differences between elderly volunteers and non-volunteers. *The International Journal of Aging and Human Development*, 12, 205–213.
- Ilardi, B. C., Leone, D., Kasser, R., & Ryan, R. M. (1993). Employee and supervisor ratings of motivation: Main effects and discrepancies associated with job satisfaction and adjustment in a factory setting. *Journal of Applied Social Psychology*, 23, 1789–1805.
- Morrow-Howell, N., Kinnevy, S., & Mann, M. (1999). The perceived benefits of participating in volunteer and educational activities. *Journal of Gerontological Social Work*, 32, 65–80.
- Omoto, A. M., & Snyder, M. (1995). Sustained helping without obligation: Motivation, longevity of service, and perceived attitude change among AIDS volunteers. *Journal of Personality and Social Psychology*, 68, 671–687.
- Omoto, A. M., & Snyder, M. (2002). Considerations of community: The context and process of volunteerism. *American Behavioral Scientist*, 45, 846–867.
- Pavot, W., & Diener, E. (2008). The satisfaction with life scale and the emerging construct of life. *The Journal of Positive Psychology*, 3, 137–152.
- Pedhazur, E. J., & Schmelkin, L. P. (1991). *Measurement, design, and analysis: An integrated approach*. Hillsdale, NJ: Erlbaum.
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, 36, 717–731.
- Rice, R. W., McFarlin, D. B., Hunt, R. G., & Near, J. P. (1985). Organizational work and the perceived quality of life: Toward a conceptual model. *Academy of Management Review*, 10, 296–310.
- Ryan, R., & Deci, E. (2000a). Self-determination theory and the facilitation of intrinsic motivation, social development and well being. *American Psychologist*, 55, 68–78.
- Ryan, R., & Deci, E. (2000b). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227–268.
- Shin, D. C., & Johnson, D. M. (1978). Avowed happiness as an overall assessment of the quality of life. *Social Indicators Research*, 5, 475–492.
- Stukas, A., Snyder, M., & Clary, E. (2008). The social marketing of volunteerism: A functional approach. In C. Haugtvedt, P. Herr, & F. Kardes (Eds.), *Handbook of consumer psychology. Marketing and consumer psychology series* (pp. 959–979). New York, NY: Taylor & Francis Group/Lawrence Erlbaum Associates.
- Thoits, P., & Hewitt, L. (2001). Volunteer work and well being. *Journal of Health and Social Behavior*, 42, 115–131.

- Van Willigen, M. (2000). Differential benefits of volunteering across the life course. *Journal of Gerontology: Social Sciences*, 55, S308–S318.
- Wang, K. T., Yuen, M., & Stanley, R. B. (2009). Perfectionism, depression, loneliness, and life satisfaction: A study of high school students in Hong Kong. *The Counseling Psychologist*, 37, 249–274.
- Weinstein, N., & Ryan, R. (2010). When helping helps autonomous motivation for pro-social behavior and its influence on well-being for the helper and recipient. *Journal of Personality and Social Psychology*, 98, 222–244.
- Wheeler, J. A., Gorey, K. M., & Greenblatt, B. (1998). The beneficial effects of volunteering for older volunteers and the people they serve: A meta-analysis. *International Journal of Aging and Human Development*, 47, 69–79.
- Wilson, J., & Musick, M. (1999). The effects of volunteering on volunteer. *Law and Contemporary Problems*, 62, 141–168.
- Wong, L. P., Chui, W. H., & Kwok, Y. Y. (2011). The volunteer satisfaction index: A validation study in the Chinese cultural context. *Social Indicators Journal*, 104, 19–32.
- Wu, J., Lo, T. W., & Liu, E. S. C. (2009). Psychometric properties of the volunteer functions inventory with Chinese students. *Journal of Community Psychology*, 37, 769–780.
- Wu, A. M. S., Tang, C. S. K., & Yan, E. C. W. (2005). Post-retirement voluntary work and psychological functioning among older Chinese in Hong Kong. *Journal of Cross-Cultural Gerontology*, 20, 27–45.
- Yiu, C., Au, W. T., & Tang, S. K. (2001). Burnout and duration of service among Chinese voluntary workers. *Asian Journal of Social Psychology*, 4, 103–111.