Examining the Volunteer Satisfaction Index – Chinese (VSI-C) in Chinese Adolescents in Hong Kong

ABSTRACT

Purpose: The purpose of this study was to validate an existing measure of The Volunteer Satisfaction Index – Chinese (VSI-C) using the sample of 1,046 secondary school students. *Method:* In this study, the factor structure of VSI-C was explored and reexamined with a sample of secondary school students in Hong Kong in order to ensure the scale to be psychometrically sound and applicable to diversified student populations. *Results:* The exploratory factor analysis revealed in this examination that a three-factor structure that differs from the model proposed by the scale developers and the version used in a number of previous studies. A revised 19-item scale was introduced after the confirmatory factor analysis was conducted. VSI-C would be a psychometrically sound measure in measuring volunteer satisfaction across different student populations. *Discussion:* Implications are discussed for assessing volunteer satisfaction, offering volunteer training and conducting future research on related topics.

Keywords: Volunteer Satisfaction Index, Validation, Secondary School, Volunteering, Chinese culture

Globally, various sectors such as social services, academic institutions, and schools highlight the importance of volunteering. In Hong Kong, more and more volunteering projects are gaining momentum (Pang, 2005). This has drawn attention from researchers. However, many volunteering-related youth studies in Hong Kong have focused on university students (Au, et al., 2012; Cheung, Lo, & Liu, 2015; Kwok, Chui, & Wong, 2013; Liu, Ching & Wu, 2017; Liu, Wu, & Hu, 2012; Wong, Chui, & Kwok, 2011; Wu, et al., 2011; and Wu, Liu, & Lo, 2009). Only a few have targeted secondary school students (Law & Shek, 2009; Law & Shek, 2011; and Ling, 2018). In Hong Kong, the government statistics reported that 568,084 (age 13-25) out of 1,314,719 (43.2%) registered volunteers were secondary school and university students. These data can be compared with those for other age groups (Age 12 or below: 112,406; Age 26-59: 472,051; and Age 60 or above: 162,178) (Central Office for Volunteer Service, Social Welfare Department, 2019). As the 13-25 age group is the largest group of volunteers, it is as important to study the volunteer-related behaviors of secondary school students as well as those of university students. This study, therefore, targeted

secondary school students.

Countries such as Australia (The Department of Education Western Australia, 2011), Singapore (Ministry of Education, Singapore, 2006), South Korea (Chu, Park, & Hoge, 1996) and Canada (Henderson, Brown & Pancer, 2007) have required students to undertake certain hours of community service before their graduation from secondary/ high school. Some studies have recognized the impacts of service requirements on students. For example, Cemalcilar (2009) expressed that the mandated civic participation, i.e. to volunteer on a socially responsible project, had positive effects, especially on students who had lower intentions to volunteer.

Based on the experiences of promoting volunteerism, a similar concept was adopted in secondary school education in Hong Kong. Under the new education reform adopted by the Hong Kong Education Bureau (Education Bureau, 2009), a new initiative titled "Other Learning Experiences" (OLE) was introduced into the secondary school curriculum. Specifically, students from Form Four to Form Six are required to perform community service – with the aim of developing their responsibility and increasing their exposure to different services targets (Secretary for Education, 2008). Students can choose their experiences from dimensions such as "Moral and Civic Education," "Community Service" and "Career-related Experiences," and are free to arrange their own service hours as long as they complete their allotted hours before graduation. In this study, we refer to community service performed under this initiative as OLE-related community service (Ling, 2018). The current study examined students with different community service experiences in Hong Kong. Research findings arising from Hong Kong will be also very relevant to other places (Post, 2003), particularly in other Asian regions.

Factors influencing volunteerism

There have been several factors identified as influencing volunteering behaviors, such as volunteer intention and responsibility (Ling & Chui, 2016), identity in volunteering and, volunteering time and role identity (Finkelstein, 2008a), and fulfillment of self-oriented motives (Cheung, Tang, & Yan, 2006). Volunteer satisfaction is one widely studied topic (such as Farrell, Johnston, & Twynam, 1998; Galindo-Kuhn and Guzley, 2001; Carla, Laurence, Christine, & Caet, 2006; Finkelstein, 2008a;

Macdonald, et al., 2009; Garner & Garner, 2011; Pauline, 2011; Warner, Newland, & Green, 2011; Wong & et. al., 2011; Lee, & et. al., 2014; Guntert, Neufeind, & Wehner, 2015; Ling & Chui 2018). One of the core objectives for volunteer managers and researchers was to understand the factors that can sustain volunteers to serve (Nencini, Romaioli, & Meneghini, 2016).

Volunteerism and Satisfaction

Satisfaction was one of the factors found to be related closely to volunteering intention, motivation, behaviors and retention. Volunteer satisfaction can be affected significantly by patriotism and intrinsic motivations (Lee & et. al., 2014). Volunteers have reported having greater satisfaction with their lives, and to have less psychological distress than non-volunteers (Hunter & Linn, 1981; Wheeler, Gorey, & Greenblatt, 1998). Vecina et. al. (2011) showed that different levels of engagement in volunteering could predict the degree of satisfaction. Ewert (1989) suggested that the past experience and satisfaction of participants can influence their attitudes, behaviors, and their participation. Satisfaction can be influenced by dispositional helping (Omoto & Snyder, 1995). Clary et al. (1998) found a positive association in older volunteers between satisfaction and intention to continue volunteering. Volunteers who had satisfaction and fulfilment from their volunteer activity were found to have received functionally relevant benefits. Those benefits included volunteers' motivational goals and the fulfilment of those goals. In addition, some motives such as values, protective and social motives could predict overall satisfaction with the service experience (Judith, Judith & Richard, 1999). The roles of volunteers, i.e. being participants, assistants, organizers and founders, have also been found to influence the level of volunteer satisfaction in a group of secondary school students (Ling & Chui, 2018).

Satisfaction and Sustained Volunteerism

It is important to study satisfaction because satisfaction is one of the factors that is related closely to sustainability of volunteerism according to previous literature. One study indicated predominantly long-term hospice volunteers were motivated to help because they had greater satisfaction from their experiences. Time spent volunteering can be predicted by satisfaction (Finkelstein, 2008b).

Impact and importance of volunteering on students

The effects and impacts of volunteering on secondary school students, university students and other groups have been pointed out widely in the literature formulated in the past decades. Generally speaking, in spite of some cross-cultural and intergroup differences, and some other factors such as the institutional arrangements and structures of the volunteering programmes, volunteering experiences have been found to be positive in relation to psychological, generic and interpersonal developments, as well as future intention to volunteer. Henderson, Brown and Pancer (2019) found that performing community service in secondary school was related to the likelihood of performing service in subsequent years. However, they found that service in secondary school was not sufficient to explain the patterns of subsequent volunteering experiences. Only those service experiences being perceived as satisfactory and/or that had lasted for at least a year were associated with a greater likelihood of future volunteering. Henderson et al. found that students' current attitudes toward community helping were correlated with satisfying placements in their secondary school service experiences. One special point noted by the authors was that students who were required to perform service in secondary school had volunteered at the same rate during the year prior to the study as those not subject to any such requirement.

Another area of interest is the quality of mandatory community service experiences. Gallant, Smale and Arai (2010) found, in a group of university students in Ontario, Canada, who had volunteering experiences during their secondary school years, that the quality of mandatory community service experience was a powerful predictor of their attitudes towards social responsibility. Ongoing volunteering was found to be influenced more significantly by school and community influences – notably their prior engagement in volunteering. They suggested that improving the quality of students' experiences, particularly for those with no prior volunteering experiences, could stimulate ongoing civic participation and social responsibility.

Other research has investigated cross-cultural differences. Hustinx, Handy and Cnaan (2012) found, in a sample of university students in China and Canada, that the Chinese students were less likely than their Canadian counterparts to be involved in ongoing volunteering. The country factor affected their perceptions of the benefits of volunteering; the Chinese students perceived greater collective benefits from volunteering while the Canadian students favoured more institution-driven private benefits from

their volunteer activities. On the other hand, there were no international differences with respect to the individual-level benefits gained from volunteering. In fact, volunteering can promote multiple benefits. For example, opportunities for participants to learn to use time productively develop a stronger sense of belonging to a community, learning opportunities, and an increased sense of self-worth and enjoyment (Townsend et al., 2014). Townsend et al. (2014) evaluated a "kitchen garden programme" in primary schools in Victoria, Australia, in which parents, community members and student volunteers were involved; they found that volunteers could help enhancing engagement between the school and the local community, and enabled school members to engage more effectively with hard-to-reach groups. Students can be given chances to relate to new people and to learn from others.

To sum up the previous research being reviewed, it is a common phenomenon across cultures and different service settings that volunteering experiences bring about a wide range of generic, social and psychological benefits to the volunteers, especially students who are still exploring their personal strengths and learning about the outside world. They can gain satisfaction from these benefits. Nevertheless, the mode of the volunteer work (i.e. mandatory or truly "voluntary") and the cultural settings (differences between East and West) regarding the perceived collective and individual level benefits should be taken into account when generalizing the research findings and discourses of the existing literature.

Volunteer Satisfaction Index - Chinese

Due to its good psychometric properties, the VSI Scale has been used widely when studying volunteer satisfaction in some empirical studies (Wong, Chui & Kwok, 2011; Chui & Cheng, 2013). Galindo-Kuhn and Guzley (2001) developed a Volunteer Satisfaction Index (VSI) that was used in various studies such as Pauline (2011), organizational commitment (Boezeman & Ellemers, 2008), volunteer and paid staff relationships (Netting et al., 2004), and fears of death and dying in residential hospice volunteers (Nissim, & et. al., 2016). Later, the Chinese version of the Volunteer Satisfaction Index (VSI-C) was validated by Wong, Chui and Kwok (2011) using the sample of 261 university students. The VSI-C has been used for purposes such as measuring volunteers' satisfaction and motivation with serving prisoners (Chui & Cheng, 2013).

The Chinese (VSI-C) measures four factors with 26 items. The factors are "Empowerment", "Organizational support", "Group integration" and "Participation efficacy" (Galindo-Kuhn and Guzley, 2001). A 7-point Likert scale is used with the range from "1=strongly dissatisfied" to "7=strongly satisfied". An example of an item for "Organizational support" is "the support I receive from people in the organization". An example of "Participation Efficacy" is "how worthwhile my contribution is". An example of "Group integration" is "my relationship with other volunteers in the organization". An example of "Empowerment" is "the progress that I have seen in the clientele served by my organization".

VSI-C was further developed by Wong, Chui and Kwok (2011) with a sample of 261 university students with previous volunteering experiences (76 male students and 185 female students) with ages ranging from 18 to 66 years. It was validated to be suitable in the Chinese context. They revised and proposed the VSI-C with a three-factor structure. The Cronbach Alpha of this version was 0.93 in a sample of university students (Wong, Chui & Kwok, 2011).

Since the VSI-C has, to date, only been validated with university students, the focus of the current study was to validate it for use with secondary school students, in order to explore and reexamine that is psychometrically sound. In addition, we wanted to compare the two samples, i.e. university and secondary school students, if possible.

Aims of the Study

The major aim of this study was to explore and reexamine the factor structure of the VSI-C by interviewing 1,046 Chinese adolescent students in Hong Kong.

METHOD

Sample

The data were collected by convenience sampling, using the method of snowball sampling. 1,046 Form 5 to 6 students (627 males and 408 females) from seven different secondary schools in Hong Kong completed the quantitative questionnaires. The average age of the participants was 16.83 years (SD: 0.67). 595 students were studying in Form 5 and 431 students were studying in Form 6 during July 2012 to October 2012.

Measures

In this study, the 24-item VSI-C with three factors proposed by Wong, Chui and Kwok (2011) was used. The instrument uses a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree) for measurement.

A total of 24 items were confirmed. The first factor was "Relationship with organization" and it consisted of 10 items. It was related to the satisfaction that the participants derived from their interactions with members of the volunteering organization. Some examples of items were: "The difference my volunteer work is making", "The chance I have to utilize my knowledge and skills in my volunteer work", and "The freedom I have in deciding how to carry out my volunteer assignment". The Cronbach's alpha for the "Relationship with organization" was 0.91. The second factor was "Personal Gain", consisting of 10 items. This was related to personal gains that involved autonomy, personal growth and the sense of satisfaction gained through making contributions. Examples included: "the amount of information I receive about what the organization is doing", "The amount of permission I need to get to do the things I need to do on this job", and "The degree of cohesiveness I experience within the organization". The Cronbach's alpha for the "Personal Gain" component of this study was 0.93. The final factor was "Relationship with peers", and it consisted of 4 items, which measured satisfaction by having relationships with peers during the voluntary services. Sample items included: "The amount of interaction I have with other volunteers in the organization" and "The friendships I have made while volunteering here". The Cronbach's alpha for the domain of "Relationship with peers" examined in that previous study was 0.89.

Procedures

After obtaining ethical approval from the Human Research Ethics Committee for Non-Clinical Faculties of University of Hong Kong, the questionnaires were distributed to the students with their consent. They completed the questionnaires during lessons. Data were entered into and analyzed by the statistical software package IBM SPSS Version 24 for Windows.

RESULT

As shown in Table 1, the Cronbach's αs of the subscales ranged from .66 to .68

for the present sample (Table 1). The lowest reliability estimate was found on the Relationship within organization subscale and the highest was found on Relationship with peers. Within domains, all inter-item correlations were positive and moderate (rs from .62 to .78), within the recommended range (Clark & Watson, 1995). At the same time, corrected item-total correlations were all positive and in a moderate-to-strong range for all domains (mean subscale rit ranged from 17.78 to 45.50). Preliminary analyses of responses to individual items indicated univariate normality (skewness -0.15 to 0.94, kurtosis to 0.42 to 13.28) (George & Mallery, 2013). Factorability of the data covariance matrix was supported by the Kaiser-Meyer-Olkin measure of sample adequacy (KMO=0.96) and Bartlett's test of sphericity (x=16854.49, df=276, p<.001).

Domain	Items	Cronbach's α	Corrected Item-total Correlation	Inter-item Correlation
			Range	Range
Personal Gain	10	.68	.61-.78	.66-.73
Relationship within organization	10	.66	.62-.78	.66-.75
Relationship with peers	4	.86	.50-.70	.66-.66

Table 1 VSI-C: Internal Consistency Reliability Coefficients and Items Statistics

As we could not confirm the factor structure with the same data, an exploratoration was conducted by randomly splitting the dataset into two halves in order to test the consistency of the belonging of the 24 VSI-C items to the three factors. Since we need to obtain the modification indices and the Standardized Root Mean Square Residual (SRMR) in the subsequent confirmatory factor analysis (CFA), we have deleted cases with missing values, which reduced the total sample size to 980. Hence, the further EFAs are based on this reduced sample without missing values.

As for the original EFA for the original dataset reported above, the three factors with the same items, namely the relationship with organization, personal gains, and relationship with peers, were extracted for the items (as highlighted below) (Table 2 and Table 3). Principal Component Analysis (PCA) was again adopted as the extraction method, and the rotation method was Oblimin with Kaiser Normalization. Consistent with the original EFA, it was suggested that Question 10 ("The freedom I have in

deciding how to carry out my volunteer assignment") and Question 20 ("The degree of cohesiveness I experience within the organization") be deleted as their respective factor loadings could not be allocated to any of the three factors. Consequently, only 22 items were used for CFA for the next step.

	Component		
	Relationship with Organi-zation	**Personal Gain**	**Relationship with Peers**
14 The way in which the agency provides me with performance feedback	0.83		
15 How often the organization acknowledges the work I do	0.81		
17 The degree to which the organization communicates its goals and objectives to volunteers	0.81		
11 The amount of information I receive about what the organization is doing	0.79		
16 My relationship with paid staff	0.78		
18 The support network that is in place for me when I have volunteer-related problems	0.78		
13 The support I receive from people in the organization	0.76		
12 The flow of communication coming to me from paid staff and board members	0.76		
10 The freedom I have in deciding how to carry out my volunteer assignment			
19 The amount of permission I need to get to do the things I need to do on this job	0.66		
3 My ability to do this job as well as anyone else		0.85	
6 The opportunities I have to learn new things		0.82	
4 How worthwhile my contribution is		0.81	
7 The fit of the volunteer work to my skills		0.79	
5 The amount of effort I put in as equaling the amount of change I influence		0.78	
2 The chance I have to utilize my knowledge and skills in my volunteer work		0.76	
8 The progress that I have seen in the clientele served by my organization		0.74	

9 The access I have to information concerning the organization	0.74	
1 The difference my volunteer work is making	0.69	
22 The friendships I have made while volunteering here		0.92
23 The amount of time spent with other volunteers in the organization		0.92
24 My relationship with other volunteers in the organization		0.91
21 The amount of interaction I have with other volunteers in the organization		0.81
20 The degree of cohesiveness I experience within the organization		

Table 2 Structural Matrix of Further Exploratory Factor Analysis for the first half of the VSI dataset (N=488)

	Component		
	Relationship with Organization	**Personal Gain**	**Relationship with Peers**
14 The way in which the agency provides me with performance feedback	0.84		
12 The flow of communication coming to me from paid staff and board members	0.82		
13 The support I receive from people in the organization	0.81		
15 How often the organization acknowledges the work I do	0.81		
17 The degree to which the organization communicates its goals and objectives to volunteers	0.79		
16 My relationship with paid staff	0.79		
11 The amount of information I receive about what the organization is doing	0.77		
18 The support network that is in place for me when I have volunteer-related problems	0.76		
10 The freedom I have in deciding how to carry out my volunteer assignment			
.9 The access I have to information concerning the organization		0.70	

19 The amount of permission I need to get to do the things I need to do on this job	0.69		
3 My ability to do this job as well as anyone else		0.85	
4 How worthwhile my contribution is		0.84	
6 The opportunities I have to learn new things		0.80	
5 The amount of effort I put in as equaling the amount of change I influence		0.79	
7 The fit of the volunteer work to my skills		0.78	
2 The chance I have to utilize my knowledge and skills in my volunteer work		0.76	
8 The progress that I have seen in the clientele served by my organization		0.74	
1 The difference my volunteer work is making		0.64	
23 The amount of time spent with other volunteers in the organization			0.89
22 The friendships I have made while volunteering here			0.88
24 My relationship with other volunteers in the organization			0.83
21 The amount of interaction I have with other volunteers in the			0.78
20 The degree of cohesiveness I experience within the organization			

Table 3 Structural Matrix of Further Exploratory Factor Analysis for the second half of the VSI dataset (N=492)

All three factors had good reliability in both halves of the sample for relationship with organization (9 items), the Cronbach's Alpha for the first half was 0.915 and 0.923 for the second half. The reliability of the items of personal gain (9 items) was 0.924 for the first half and 0.928 for the second half. The Cronbach's Alphas for the four items of the factor of relationship with peers was 0.919 (first half) and 0.876 (second half). We may thus infer that the VSI-C, even with the sample being divided into two halves, had a very good reliability.

To examine the possible factor structure underlying this measure, the proposed models were tested by confirmatory factor analysis via the computer software IBM AMOS (23.0).

Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) is a verification method conducted by creating a factor model with parameter restrictions (Blunch, 2013). In CFA, the observed variables (or manifest variables) are connected with a number of pre-specified latent variables. Every observed variable is an indicator for one latent variable. The parameters may be constrained to certain values or to have the same values as other parameters.

By using SPSS AMOS 23 as the analytical tool, the CFA of the three domains of VSI-C (a total of 22 items) was conducted based on approximately 50 per cent of the sample with cases randomly selected (N=488) (Figure 1), and also the three latent variables indicating the three factors or domains, namely relationship with organization, personal gain and relationship with peers, were correlated with each other. The initial indicators showed that this model did not fit. The Chi-square value was not significant (999.338; p=<.000) and the relative chi-square (chi-square/degree of freedom) was also quite high (4.851). The other fit indices, the comparative fit index (CFI), the Tucker-Lewis Index (TLI), the normed fix index (NFI), and root-mean-square error of approximation (RMSEA), were also taken into consideration. The indices were not very satisfactory for determining model fit (CFI=.899, TLI=.887, NFI=.877, RMSEA=0.089). All of them were below 0.90, which is conventionally adopted as an acceptable cut-off level. The RMSEA was too high for confirming model fit since anything equal to or lower than 0.08 would indicate a reasonable error of approximation (Arbuckle, 2010). Hence, this model could not be accepted. There was a need to improve its fit level by making adjustments to the number of items.

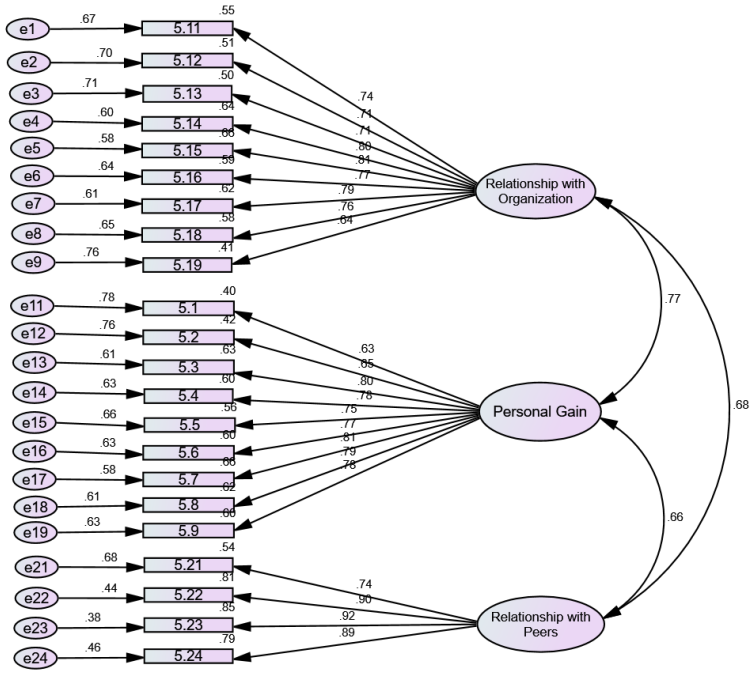

Figure 1: The path model of the initial Confirmatory Factor Analysis for the three factors of VSI (N=488)

Figure 1 shows that there were three items (Question 1 – "The difference my volunteer work is making", 2 – "The chance I have to utilize my knowledge and skills in my volunteer work", and 19 – "The amount of permission I need to get to do the things I need to do on this job") on which the variances explained (R^2) lower than 0.50 (ranging from 0.4 to 0.42); these factors might have lowered the fit levels of the model. Therefore we decided to remove these indicators from the model and to conduct a new CFA without them (Figure 2). The meaning and implications of Question 1 were similar to those of Question 5 ("The amount of effort I put in as equaling the amount of change I influence"), with both of them are referring to how much change the volunteer had been able to bring to the organization and clients. Question 2 was also similar to Question 5, asking about concepts related to satisfaction in utilizing one's skills in volunteering, therefore Question 5 could be a suitable substitute for Question 1 and Question 2 after these were deleted. Question 19 and Question 12 ("The flow of communication coming to me from paid staff and board members") had similar content and meanings as both of these were asking about the respondent's satisfaction with communications with the staff in carrying out volunteer tasks. The removal of these three items thus would not have affected the comprehensiveness of those domains and the VSI as a whole. The two factors with less indicators still had good reliability (relationship with organization: Alpha=.917; personal gain: Alpha=.917).

After the deletion of those three items with only 19 items in the model, the results of CFA for the revised model were still not a fit. The chi-square was still significant (718.645) and the relative chi-square was still high (4.823), though it was slightly lower than that of the initial analysis. The fit indices had improved slightly (CFI=.918, TLI=.906, NFI=.899, RMSEA=.089), but not all of them had reached the cut-offs for model fit. The RMSEA is a particularly critical index of model fit, but it was still greater than the cut-off point of 0.08, meaning that it was not an acceptable fit (Arbuckle, 2010). In view of the result of this round of CFA, it was necessary to check out the modification indices suggested by AMOS to consider adding covariances between certain error terms.

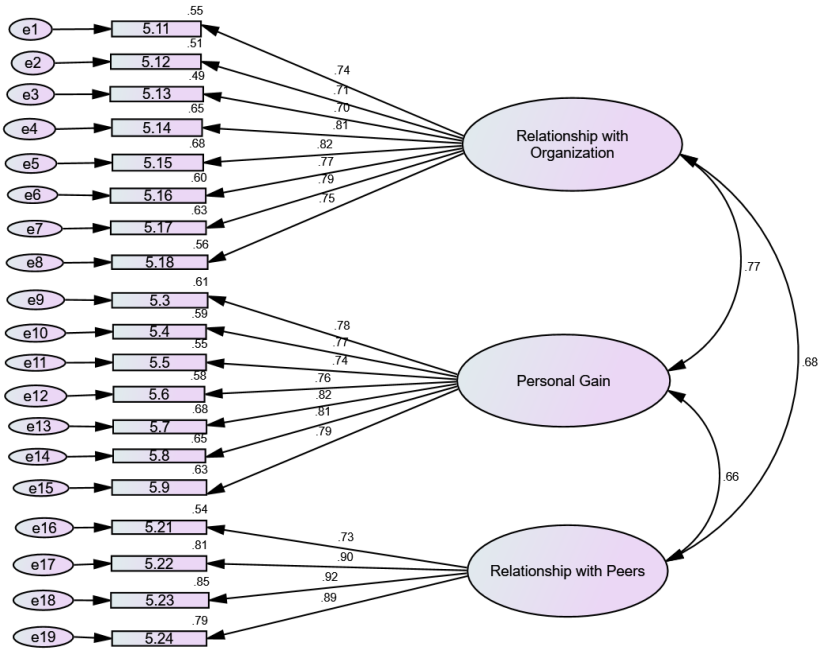

Figure 2 The path model of Confirmatory Factor Analysis for the revised VSI measurement models (N=488)

Figure 3 presents the second revised CFA for the reduced VSI-C with the same 19 items, but a number of covariances had been added between certain error terms of the items. Besides checking the loadings provided by the modification indices suggested by AMOS, the major reason for adding the covariances was to assess the relatedness of a pair of items with regard to their content and wording. As for the correlation between e1 and e2, both Questions 11 (“The amount of information I receive about what the

organization is doing") and 12 ("The flow of communication coming to me from paid staff and board members") of the VSI-C referred to volunteers' satisfaction with the extent of communication with the organization or paid staff, which was necessary for them to carry out their volunteer tasks smoothly. Both of these questions focused on the interactions between two sides. The correlation between e4 (Question 14 – "The way in which the agency provides me with performance feedback") and e5 (Question 15 – "How often the organization acknowledges the work I do") should be valid since these two questions were both asking about how the organization responded to the respondent's volunteer work, like giving feedback and acknowledgement. Question 17 – "The degree to which the organization communicates its goals and objectives to volunteers" (e7) and Question 18 - "The support network that is in place for me when I have volunteer-related problems" (e8), on the other hand, were both about the volunteers' satisfaction with the amount of concern shown them by the organization, for example through informing them about the organization's beliefs, and the support available for them in the face of volunteer-related problems. These two questions should hence be correlated to each other.

Two covariances were added to the items in the domain of personal gain. It was hypothesized that Question 3 ("My ability to do this job as well as anyone else") (e9) and Question 4 ("How worthwhile my contribution is") (e10) would be correlated given their similar contents and meanings. They were both self-evaluations by the volunteers in assessing their own ability as volunteers. The covariance between e11 (Question 5 – "The amount of effort I put in as equaling the amount of change I influence") and e14 (Question 8 – "The progress that I have seen in the clientele served by my organization") were both referring to the impact of one's volunteer work on either the organization or clients, which is important to the volunteer's confidence and sense of achievement. Therefore, these two items should be associated with each other. Furthermore, in the domain of relationship with peers, a covariance was added between e16 (Question 21 – "The amount of interaction I have with other volunteers in the organization") and e18 (Question 23 – "The amount of time spent with other volunteers"). These two questions should have been associated with each other because their contents were very similar, mainly asking about quality of the respondent's relationships with other volunteers. These assumptions were supported by the ultimate results of the revised CFA (Figure 3), with all of these correlations being high ($p=<.001$).

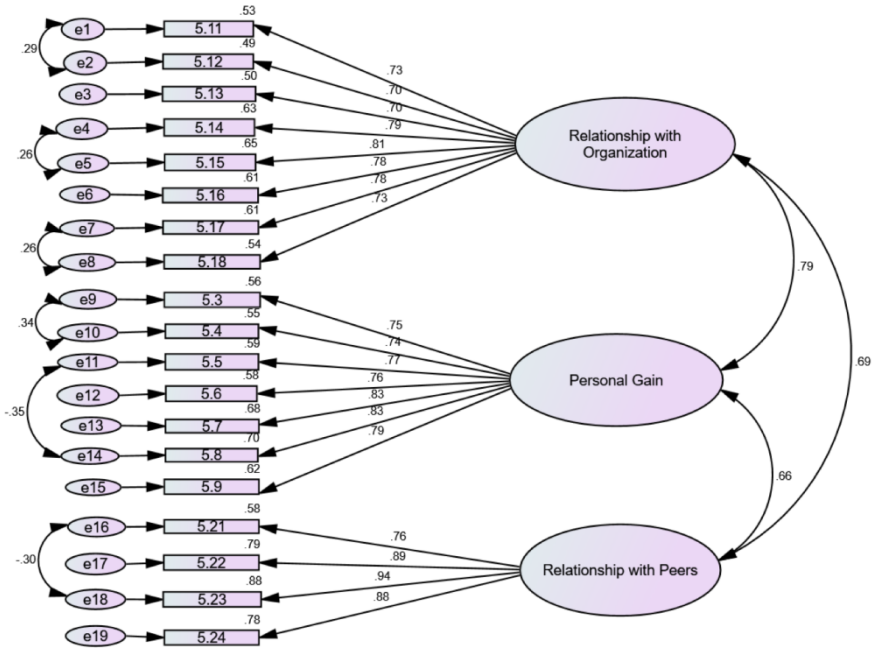

Figure 3 The path model of Confirmatory Factor Analysis for the second revised VSI measurement models (N=488)

The results of the CFA for the second revised model were much improved as compared with the first revised model after adding the covariances explained above. In addition to the specified error terms mentioned above, the three latent variables were also highly correlated with each other in the model (p=<.001). Although the chi-square was still significant (520.165, p=<.001), the relative chi-square (chi-square/degree of freedom) was much lower now (3.638, within the conventional margin of 2.0-5.0 for model fit) (Hooper, Coughlan & Mullen, 2008). The model chi-square is widely understood to be sensitive to a larger sample size, thus it may not be an accurate indicator to determine model fit. However, the other fit indices were also within their ranges of acceptable model fit (CFI=.946, TLI=.935, NFI=.927). All of these were greater than 0.9 and even close to 0.95, the cut-off for "good fit". The RMSEA of this revised model was 0.074, indicating that it was within the range of confirming model fit. The 90% confidence interval of RMSEA (.067-.080) did not exceed 0.08, therefore the model fit as indicated by RMSEA was ensured. The SRMR of this revised model was 0.0481, which was much smaller than 0.05, a common cut-off point for good fit (Hooper, Coughlan & Mullen, 2008).

Our results showed that after this renewed validation with new combinations of indicators for the three domains, the VSI-C still has very strong internal consistency. First, the reliability coefficients of all of the subscales were greater than 0.89. According to the literature, an alpha score of 0.6 is generally acceptable (Moss et al., 1998, Haher et al., 1999; Morgan et al., 2004). Some have even set 0.7 as acceptable range (Nunnally, 1978; Sturmey et al., 2005). Thus, the revised VSI-C has very good internal reliability.

Discussion

Generally speaking, the fit indices of the second revised measurement model presented above are satisfactory, but we also need to take note of the relationships between the items of which the error terms are linked by covariances, which appear to be particularly stronger amongst the indicators within each of the factors. Future uses and development of VSI-C should take note of these correlations, in other words the potential "special relationships" between those indicators. For example, future researchers may consider developing a number of new domains in addition to the exiting three dimensions in accordance with what the covariances have indicated about the possible correlations between certain indicators. As well, researchers may consider conducting new rounds of data collection from other sample groups in a Chinese society with these 19 items to further confirm the validity of this version of VSI.

This study adapted, explored and reexamined the Volunteer Satisfaction Index – Chinese (VSI-C) with secondary school students. The validation of VSI-C for this sample makes an important contribution to the growing literature on volunteer satisfaction, especially in the Chinese context. Standardized instruments are needed to permit cross-program or cross-territorial comparisons over time within schools, and to understand the implications of satisfaction with volunteering in secondary school students and other groups in Chinese societies.

In addition, only 19 of the 24 VSI-C items used by Wong, Chui, and Kwok (2011) in their sample of university students were selected in this study for inclusion in the final instrument. This may have been due to different levels of understanding of the wordings in the items due to the different education levels and exposure to volunteering experiences between university and secondary school students. Consequently it can be

concluded that the instrument is psychometrically sound to be adopted for use in different contexts, such as volunteer training, programme evaluations and further research.

The results of the CFAs indicated that the indicators of each factor, as extracted by EFA, were correlated with their respective factors and closely bonded with each other after the modifications had been made, with the missing values deleted. The goodness-of-fit indices have shown that these measurement models were a reasonable fit after making modifications. It appears that the factors could only have been formed with the additional correlations between certain indicators in the measurement models. It is therefore suggested that there are special relationships between certain questions, although they belong to the same domains.

The current study is important as it provides support to the enhancement of volunteer commitment and satisfaction through training (Carla, Laurence, Christine, & Caet, 2006). The revalidation of VSI-C could be used for designing and evaluating the training for volunteers.

However, this study had some limitations. First, random sampling was not used, so the results may not reflect the whole picture of volunteer satisfaction which is proportional to the general secondary school student population in Hong Kong. Second, this study was a cross-sectional one without the use of longitudinal approaches or further tracking studies. A cross-sectional study cannot measure the impact of different service training programs and services on students' satisfaction in volunteering as well as a longitudinal one can. Third, we were unable to understand the students' satisfaction in depth from quantitative data only. Further research with a quantitative and longitudinal design using random sampling may be needed. Regardless of the above limitations, given its representative sample size with good psychometric properties, the VSI-C should be a justified instrument and contributive to the enrichment of the literature of this field of study as well as for practical purposes.

To conclude, the present study has explored and reexamined the Volunteer Satisfaction Scale – Chinese with the sample of secondary school students in Hong Kong. This scale had reliable scale scores with a hypothesized factor structure. Due to this scale validation, the revised 19-item VSI-C will be a useful scientific tool for

assessment, research, volunteer training, and volunteer retention, especially in the Chinese context for both secondary school students (i.e. this study) and university students (Wong, Chui, & Kwok, 2011). The scale should continue to be used over time across different programs and populations as this study has reconfirmed that it is a psychometrically sound instrument with good reliability. In the foreseeable future, it is hoped that more researchers will produce more academic output to utilize and this revised scale and refine it further.

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