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Volunteer Functions Inventory: A systematic review

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Abstract

The objective of this research study was to conduct a systematic review of the research on volunteers using Clary et al.'s VFI (1998). A total of 48 research studies including 67 independent samples met eligibility criteria. The total sample of the studies analyzed ranged from 20375 to 21988 participants, depending on the motivation analyzed. The results show that the Values factor obtained the highest mean score, both overall and in each type of volunteering, whereas the lowest scores were for the Career and Enhancement factors. Studies conducted with samples with a mean age under 40 years obtain higher scores on Career and Understanding scales when compared to studies in older samples. The group of studies with less than 50% women yield higher mean scores on the Social scale than studies with more than 50% women in the sample. All the scales show reliability coefficients between .78 and .84. Only eight of the articles provide data on the reliability of the scale with a mean value of .90. Of the 26 studies that performed factor analysis, 18 confirmed the original structure of six factors.

Keywords: Volunteering, motivations, VFI.

Resumen

El inventario de funciones del voluntariado: una revisión sistemática. **Antecedentes:** las motivaciones son variables clave para comprender el comportamiento de los voluntarios. El objetivo de esta investigación es realizar una revisión sistemática de las investigaciones sobre voluntariado que hayan usado el VFI de Clary et al. (1998). **Método:** 48 investigaciones, con 67 muestras independientes, cumplían los criterios de elegibilidad. El total de la muestra de los estudios oscila entre 20.375 y 21.988 participantes, según el motivo analizado. **Resultados:** el factor Valores obtiene la mayor puntuación media en general y en cada tipo de voluntariado, las puntuaciones más bajas corresponden a los factores Mejora del Curriculum y Defensa del Yo. Los estudios realizados con muestras menores de 40 años de edad media obtienen puntuaciones mayores en las escalas de Mejora del Curriculum y Conocimiento. Los estudios con menos del 50 % de mujeres arrojan medias más altas en la escala Social que los estudios con más del 50 % de mujeres en la muestra. Todas las escalas muestran coeficientes de fiabilidad entre .78 y .84. Solo ocho artículos aportan datos sobre la fiabilidad de la escala total con una media de .90. De los 26 estudios que realizaron un análisis factorial, 18 confirman la estructura de seis factores original.

Palabras clave: voluntariado, motivaciones, VFI.

Volunteering may be defined as a planned, nonobligatory helping behavior that is sustained over time, benefits strangers and takes place in organizational contexts (Penner, 2002). Researchers have studied multiple factors that affect the behavior of volunteers: willingness to help, social support, integration in the organization, engagement, organizational conflict, satisfaction, etc. But, without a doubt, one of the most studied variables is volunteer motivation.

The research conducted has revealed the special relevance of motivations as the key factor in both the initiation and duration of volunteer service (Chacón, Vecina, & Dávila, 2007; Omoto & Snyder, 1995). Numerous studies in different cultures and different volunteer settings show the relationship between volunteer motivations and variables as important as: satisfaction, organization commitment, integration in the organization,

intention to continue or quit volunteer activity, length of volunteer service, involvement, hours or days devoted to volunteer service (Bang, Ross, & Reio, 2013; Caldarella, Gomm, Shatzer, & Wall, 2010; Francis & Jones, 2012; Jansen, 2010; Longenecker, Beard, & Scazzero, 2012; Marta, Guglielmetti, & Pozzi, 2006).

Different methods, both quantitative and qualitative, have been used to assess volunteer motivations. Among the most important quantitative methods are questionnaires such as the "Volunteer Functions Inventory" (VFI) (Clary et al., 1998), the "Attitudes toward Helping Others Scale" (Webb, Green, & Brashear, 2000), the "Helping Attitudes Scale" (Nickell, 1998), "Bales Volunteerism-Activism Scale" (Bales, 1996), and the "Helping Power Motivation Scale" (Frieze & Boneva, 2001).

Volunteer motivations are a key factor in both volunteer recruitment and continuation of volunteer activity. The objective of this study is to conduct a systematic review of the research on volunteer motivations.

Although a general analysis of volunteer motivations could be meaningful, due to the diversity of assessment methods and to facilitate comparability, we have focused in this article on the VFI,

because it is the most widely used instrument. As stated by Gage and Thapa (2012), the VFI has become "... the standard instrument to assess volunteer motivation" (p. 413). The widespread use of VFI can be explained, among other factors, by its well-grounded theoretical basis and its good psychometric properties. Other relevant characteristics of the VFI is that it has been applied in multiple volunteer settings, including online volunteering, and has been adapted to various languages including, among others, Spanish (Chacón & Dávila, 2005), Italian (Marta et al., 2006), Portuguese (Ferreira, Proença, & Proença, 2011), German (Oostlander, Guentert, Van Schie, & Wehner, 2014), and Chinese (Wu, Wing Lo, & Liu, 2009).

The VFI was originally developed by Clary, Snyder, and Ridge in 1992. In 1998 its authors published the psychometric data of the inventory (Clary et al., 1998). The purpose of the VFI is to assess the motivations driving volunteers. For this purpose, they used the functional approach to attitudes as a basis, adapting it to volunteers (Clary & Snyder, 1991; Omoto & Snyder, 1995). According to this perspective, although a specific volunteer activity may seem identical in all individuals, the motivations for doing it may be very different. On the other hand, a volunteer may be motivated by different motivations simultaneously, and these motivations may change over time.

Following the factor analyses performed by its authors, the VFI was configured as a 30-item questionnaire divided into 6 scales of 5 items each, which are scored using a 7-point Likert-type scale (where 1 is *totally disagree* and 7 is *totally agree*). The six motivations assessed are:

- **Values:** refers to the expression of values related to altruistic and humanitarian concerns.
- **Understanding:** motivations oriented to acquiring and/or improving knowledge, skills, experiences, etc.
- **Social:** motivations related to what are called social adjustment and adaptation functions by Smith, Bruner, and White (1956).
- **Career:** motivation to enhance knowledge in a specific area related to professional and academic development.
- **Protective:** motivations oriented to protecting the *ego* or escaping from problems.
- **Enhancement:** motivations centered on self-knowledge, self-development and, in general, feeling better about oneself.

The psychometric properties of the VFI obtained by Clary et al. (1998) are shown in Table 1. As can be seen, the scales have a high reliability between .80 to .89. The mean interscale correlation was .34.

Sample	Factors	Mean	Reliability (α)
N:467 subjects (mean age 40.9, SD: 13.38)	Values	5.82	.80
	Understanding	4.91	.81
	Social	2.59	.83
	Career	2.74	.89
	Protective	2.61	.81
	Enhancement	4.27	.84

This study aims to conduct a systemic analysis of the VFI that includes its psychometric characteristics, the main results obtained with this inventory since its creation up to 2014, and to explore the limits of generalization of the results obtained in a sample.

The literature review on the VFI allows us to propose the hypotheses presented below. Some of them are directly related to the results of previous studies, and others are proposed to attempt to resolve some of the apparent contradictions found in the literature on volunteer motivations.

The vast majority of studies show that volunteers prefer to see themselves as primarily motivated by "altruistic" other-oriented motives, with these motivations obtaining the highest scores. In the case of the VFI, the Values scale is the one that obtains the highest mean scores in practically all research studies, regardless of volunteer age, gender, or volunteer setting. The second scale with the highest mean scores is Understanding. In contrast, the Social and Protective scales usually obtain the lowest scores (Caldarella et al., 2010; Dávila & Díaz-Morales, 2009; Fletcher & Major, 2004; Hsieh, 2000; Jansen, 2010; Konrath, Fuhrel-Forbis, Lou, & Brown, 2012).

These results allow us to formulate the first hypotheses:

Hypothesis 1:

Hypothesis 1a: The Values scale of the VFI will be the scale with the highest mean scores, regardless of the age group, gender or volunteer setting.

Hypothesis 1b: The Understanding scale will be the scale with the second highest mean scores, and the Social and Protective scales will be the scales with the lowest mean scores.

Research studies examining the relationship between volunteer motivations and age agree in finding that as volunteer age increased, the importance of career motivation decreased (Caldarella et al., 2010; Clary & Snyder, 1991; Francis & Jones, 2012; Hsieh, 2000). Therefore, we formulated the following hypothesis:

Hypothesis 2: Mean scores on the Career scale in samples of older volunteers will be significantly lower than the scores of samples of younger volunteers.

Regarding the variable gender, the studies appear to show the order of motivations assessed by the VFI is the same in men and women (Fletcher & Major, 2004).

Hypothesis 3: The order of motivations assessed by the VFI will be the same in men and women.

Although the mean scale on the Values scale is usually the highest, some studies found the "selfish" or self-oriented motives are the best predictors of longevity of service of volunteers in organizations (Omoto & Snyder, 1995). This apparent contradiction could be due to a statistical effect: if a large percentage of volunteers score high on the Values scale, it will tend to have lower variability, which could limit its predictive capacity and reduce its reliability. We therefore suppose:

Hypothesis 4: The Values factor will have lower variability and lower reliability coefficient than the other factors.

We expect the results of the systematic review will support the results obtained by Clary et al. (1998) regarding the reliability of the VFI and its factor structure

Hypothesis 5:

Hypothesis 5a: Overall reliability and the Subscale reliabilities will be good.

Hypothesis 5b: The studies will confirm the factor structure of six factors found in the study by Clary et al. (1998).

Method

Sample studies

Two search criteria were used to conduct this systematic review: “VFI” and “Volunteer Functions Inventory”. Two searches were made, one using ProQuest including all databases in the “Social Sciences” category, and the other in Google Academic. Two groups of two judges were formed who independently coded the variables and the final decisions were taken by consensus. The comprehensive review provided 48 studies with 67 independent samples that met all inclusion criteria (see table 2).

Studies Search: Inclusion Criteria

The time limits set for the search were from 1998, the year of the main publication of the VFI (Clary et al., 1998), to December 31, 2014. Both articles published in scientific journals and research papers (PhD, Master’s and Bachelor’s theses) were included to avoid publication bias (Schmidt & Hunter, 2014).

From the resulting studies, we selected those using the complete VFI, or one or more of its scales; studies written in Spanish, English, Portuguese, or Italian; studies that were free access; those using a 7-point Likert scale like the original version; and studies containing at least the following data: sample size, mean and/or standard deviations and/or reliability of VFI factors.

Some studies modified the content and/or the number of items in the scales. In these cases, studies were excluded if they modified the writing of the item or added items and were only selected if they reduced the number of items of the original scale. However, in the latter case, only the data for the mean and reliability were used.

The searches yielded an initial result of 666 research studies that made reference to the VFI. Analysis of the full texts revealed that only 147 used the VFI. Of these studies, only 48 met the eligibility criteria.

As some of these research studies included more than one study with different independent samples (e.g., Gillath et al., 2005), each of them was analyzed separately, obtaining a total of 67 different samples in which the VFI was applied (see figure 1).

Not all studies included all the data on means, standard deviations and reliability of all the scales. Consequently, the number of studies used in the analyses of the data for each scale and variable differs, but were generally numerous. The number of studies used for the statistical analyses of each of the VFI scales and the total samples used in each case are shown in Table 3.

In addition, data were collected such as the volunteer setting, nature of volunteering: permanent or sporadic, percentage of women, mean age of samples, whether factor analysis was included or not, type of research (article, research report, PhD, Master’s and Bachelor’s theses), country and language.

Data analysis

For statistical analysis and comparison of the main hypotheses of this study, the weighted means, weight standard deviations and average Cronbach alpha indices for all the studies selected in each of the VFI scales.

To check for possible significant differences in some of the sociodemographic variables in any of the factors related to our

hypotheses, the variable gender (studies with more than 50% women in the sample - studies with less than 50%) and the variable age (mean age under 40 years - mean age over 40 years) were categorized, and Student’s t-test for independent samples was applied. To check if there were differences in motivations according to volunteer setting, the ANOVA could not be applied due to the small number of studies in each category. However, descriptive data are provided further on. Finally, the means obtained in published and unpublished research studies were compared using Student’s t-test.

Data analyses were performed with the computer software SPSS 22 for Windows.

Results

Table 3 shows the results obtained in each of the scales. The total sample of the studies analyzed ranges from 16,413 to 21,988 subjects depending on the statistic and scale used.

Regarding the weighted means, the Values factor shows the highest score ($M = 5.21$), followed by the Understanding ($M = 4.26$). The lowest weighted means correspond to the Career ($M = 2.89$) and Protective ($M = 2.82$) factors. Other-oriented factors (Values) obtain higher scores than self-oriented factors.

Table 4 shows the descriptive data of the scores obtained on each of the factors in the different volunteer settings. The Values motivation has the highest mean scores in all settings. The lowest scored motivation in the Health, Social and Environment settings is Career. In the settings of Education, Sports, and Civil Defense, however, the lowest rated motivation is Protective.

The results of Table 5 show that studies with volunteers with mean ages under 40 years obtain significantly higher scores in Career ($p = .001$) than studies using volunteer samples over 40 years of age. With regard to age, a nearly significant result ($p = .062$) was found for the Understanding scale. In this latter case, to determine more precisely if there were significant differences, the t statistic was calculated again from the means and standard deviations weighted by sample size. After this analysis, significant differences ($p = .01$) were indeed found in the Understanding scale between the group under 40 years of age and the group over 40 years of age. In both cases, the mean scores in the first group were significantly higher than in the second group.

On splitting the studies by the percentage of women in the sample, significant differences ($p = .029$) were found in the Social variable. The group of studies with less than 50% women offered significantly higher mean scores on the Social scale than the studies with more than 50% women in the sample.

The Values scale is the scale with the lowest reliability coefficient (see Table 3). Regarding the standard deviations, the highest is for Enhancement ($SD = 1.63$) and the lowest correspond to Career ($SD = 1.23$) and Values ($SD = 1.35$).

Only 8 articles provide data on the Cronbach alpha index of the total scale with a mean of .90, and a range between .83 (Boettger, 2007) and .94 (Hsieh, 2000), though it should be clarified that the latter study slightly modified the VFI, eliminating item 20 from the Protective scale. The scales show reliability coefficients between .78 and .84. (see Table 3)

In relation with the 26 studies that performed factor analysis, 17 confirmed the original structure of six factors. To these 17 studies, 3 more could be added. In two of them, not all the inventory factors were used, but they confirmed the factors of the VFI that were

Table 2
Articles and samples included in the review

Nº	Authors	Title	Publication	Year	Country	Language	Type ngo	Sample
1	Agostinho, D., & Paço, A.	Analysis of the motivations, generativity and demographics of the food bank volunteer	International Journal of Nonprofit and Voluntary Sector Marketing, 17(3), 249-261	2012	Portugal	English	Social	193
2	Allison, L. D., Okun, M. A., & Dutridge, K. S.	Assessing volunteer motives: A comparison of an open-ended probe and Likert rating scales	Journal of Community & Applied Social Psychology, 12(4), 243-255	2002	Australia	English	Social	129
3	Ambiee, J. P.	Examining physicians' motivations to volunteer: An applied visual anthropological approach	(Published master's thesis). University of South Florida	2007	EEUU	English	Health	30
4	Bang, H., Ross, S., & Reio, T. G.	From motivation to organizational commitment of volunteers in non-profit sport organizations: The role of job satisfaction	Journal of Management, 32, 96-112	2013	EEUU	English	Sports	214
5	Boettger, J. K.	Elite athletes' motivations to volunteer and interpersonal communication motives: Identifying volunteers' interaction position	(Unpublished master's thesis). Liberty University, Lynchburg, VA	2007	EEUU	English	Sports	32
6							Sports	63
7	Caldarella, P., Gomm, R. J., Shatzer, R. H., & Wall, D. G.	School-Based Mentoring: A Study of Volunteer Motivations and Benefits	Online Submission, 2(2), 199-216	2010	EEUU	English	Education	31
8	Carlo, G., Okun, M. A., Knight, G. P., & De Guzman, M. R. T.	The interplay of traits and motives on volunteering: Agreeableness, extraversion and prosocial value motivation	Personality and Individual Differences, 38(6), 1293-1305	2005	EEUU	English	Leisure	796
9	Carlson, J. S.	The call to serve: a survey study exploring the motives of volunteers in higher education	(Unpublished doctoral dissertation). Liberty University, Lynchburg, VA	2013	EEUU	English	Education	304
10	Cheung, C. H.	Determinants of sustained volunteerism in Hong Kong	(Unpublished doctoral dissertation) University of Hong Kong, Pokfulam, Hong Kong	2009	China	English	Sports	401
11							Various	466
12							Various	325
13	Chui, W. H., & Cheng, K. K. Y.	Effects of volunteering experiences and motivations on attitudes toward prisoners	Asian Journal of Criminology, 8(2), 103-114	2013	China	English	Social	54
14							Others	146
15	Dávila, M.C.	La incidencia diferencial de los factores psicosociales en distintos tipos de voluntariado [The differential incidence of psychosocial factors in different types of volunteering]	(Unpublished doctoral dissertation), Universidad Complutense de Madrid, Madrid, España	2002	España	Spanish	Various	419
16							Environmental	186

Nº	Authors	Title	Publication	Year	Country	Language	Type ngo	Sample
17							Others	233
18	Dávila, M. C., & Díaz-Morales, J. F.	Age and motives for volunteering: Further evidence	European Journal of Psychology, 5(2), 82-95	2009	España	English	Social	78
19							Social	40
20							Social	26
21							Social	31
22							Social	19
23							Social	20
24	Do Paço, A., & Agostinho, D.	Does the kind of bond matter? The case of food bank volunteer	International Review on Public and Nonprofit Marketing, 9(2), 105-118	2012	Portugal	English	Social	193
25	Do Paco, A., & Nave, A. C.	Corporate volunteering: A case study centred on the motivations, satisfaction and happiness of company employees	Employee Relations 35(5) 547-559	2013	Portugal	English	Others	222
26	Eppler, M. A., Ironsmith, M., Dingle, S. H., & Erickson, M. A.	Benefits of Service-Learning for Freshmen College Students and Elementary School Children	Journal of the Scholarship of Teaching and Learning, 11(4), 102-115	2010	EEUU	English	Education	18
27	Ferreira, C. P. S.	Motivações do universitário voluntário: relação com o bem-estar psicologico, qualidade de vida e personalidade	(Unpublished master's thesis). Universidade de Aveiro, Aveiro. Portugal	2013	Portugal	Portuguese	Education	31
28	Ferreira, M. R., Proença, T., & Proença, J. F.	An empirical analysis about motivations among hospital volunteers	In 10th International Congress of the International Association on Public and Nonprofit Marketing. FEP Working Papers, 418.	2011	Portugal	English	Health	304
29	Finkelstein, M. A.	Individualism/ Collectivism: implication for the volunteer Process	Social Behavior and Personality, 38 (4) 445-452	2010	Australia	English	Not specify	194
30	Fletcher, T. D., & Major, D. A.	Medical Students' Motivations to Volunteer: An Examination of the Nature of Gender Differences	Sex Roles, 51(1-2), 109-114	2004	EEUU	English	Not specify	25
31							Not specify	24
32	Francis, J. E., & Jones, M.	Emergency service volunteers: a comparison of age, motives and values	The Australian Journal of Emergency Management, 27(4), 23-28	2012	Australia	English	Civil Defense	153
33							Civil Defense	99
34	Gillath, O., Shaver, P. R., Mikulincer, M., Nitzberg, R. E., Erez, A., & Ijzendoorn, M. H.	Attachment, caregiving and volunteering: Placing volunteerism in an attachment theoretical framework.	Personal Relationships, 12(4), 425-446	2005	EEUU	English	Not specify	129
35					Alemania		Not specify	141
36					Israel		Not specify	104
37					EEUU		Not specify	106

Nº	Authors	Title	Publication	Year	Country	Language	Type ngo	Sample
38					Alemania		Not specify	140
39					Israel		Not specify	100
40	Gossen, L. A.	A study of the membership of the national FFA alumni association: volunteering, loyalty, and benefits	(Unpublished doctoral dissertation). Kansas. State University, Manhattan, KS	2011	EEUU	English	Education	399
41	Greenlade, J. H., & White, K. M.	The Prediction of Above-Average Participation in Volunteerism: A Test of the Theory of Planned Behavior and the Volunteers Functions Inventory in Older Australian Adults	The Journal of Social Psychology, 145(2), 155-172	2005	Australia	English	Not specify	385
42	Griffin, M. M., Mello, M. P., Samples, K. A., Carter, E. W., & Hodapp, R. M.	Ambassadors of Change: Experiences of Peer Mentors Supporting Students with Intellectual Disability at College	Poster		EEUU	English	Education	16
43	Ho, Y. W., You, J., & Fung, H. H.	The moderating role of age in the relationship between volunteering motives and well-being	European Journal of Ageing, 9(4), 319-327	2012	China	English	Not specify	174
44	Hsieh, C. L.	The organizational commitment of ohio state adult 4-H volunteers	(Unpublished doctoral dissertation). Ohio State University, Columbus, OH	2000	EEUU	English	Not specify	171
45	Jansen, K. L.	Coping, Stress, and Burnout Factors in Long-Term Volunteering	(Unpublished doctoral dissertation). Universidad de Toledo, Toledo, España	2010	EEUU	English	Not specify	44
46	Jiranek, P., Kals, E., Humm, J. S., Strubel, I. T., & Wehner, T.	Volunteering as a means to an equal end? The impact of a social justice function on intention to volunteer	The Journal of Social Psychology, 153(5), 520-541	2013	Suecia	English	Not specify	513
47	Jones, C.	Motivation of Public Garden Volunteers	(Unpublished doctoral dissertation).University of Delaware, Newark, DE	2004	EEUU	English	Environmental	1538
48	Keyser, B.	After-school Program Mentors'	(Unpublished doctoral dissertation). The University of Alabama, Tuscaloosa, AL	2011	EEUU	English	Education	144
49	Kim, M., Zhang, J. J., & Connaughton, D. (2010).	Modification of the Volunteer Functions Inventory for application in youth sports	Sport Management Review, 13(1), 25-38	2010	EEUU	English	Sports	515
50	Konrath, S., Fuhrel-Forbis, A., Lou, A., & Brown, S.	Motives for volunteering are associated with mortality risk in older adults	Health Psychology, 31(1), 87-96	2012	EEUU	English	Not specify	10317
51	Kortge, R.	The motivational and demographic predictors of social engagement by Australian University Students	(Unpublished degree's thesis). University of Cambera, Cambera, Australia	2006	Australia	English	Education	270
52	Lambha, M.	Volunteer-child interaction training	(Unpublished doctoral dissertation). Auburn University, Auburn, AL	2010	EEUU	English	Social	20
53	Marta, E., Guglielmetti, C., & Pozzi, M.	Volunteerism during young adulthood: An Italian investigation into motivational patterns	Voluntas: International Journal of Voluntary and Nonprofit Organizations, 17(3), 221-232	2006	Italia	English	Not specify	461

Nº	Authors	Title	Publication	Year	Country	Language	Type ngo	Sample
54	McCabe, T. L., White, K. M., & Obst, P. L.	The importance of volunteering functions to university students	Australian journal of volunteering, 12(2), 50-58	2007	Australia	English	Sports	121
55	Moreno-Jiménez, M. P., & Villodres, M.	Prediction of burnout in volunteers	Journal of Applied Social Psychology, 40(7), 1798-1818	2010	España	English	Social	309
56	Okun, M. A., Barr, A., & Herzog, A. R	Motivation to volunteer by older adults: A test of competing measurement models	Psychology and Aging, 13(4), 608-621	1998	EEUU	English	Health	409
57	Okun, M. A.; Barr, A., & Herzog, A. R	Motivation to volunteer by older adults: A test of competing measurement models	Psychology and Aging, 13(4), 608-621	1998	EEUU	English	Others	362
58	Pierce, D., Johnson, J., Felver, N., Wanless, E., & Judge, L.	Influence of Volunteer Motivations on Satisfaction for Undergraduate Sport Management Students	Global Sport Business Journal, 2, 63-72	2014	EEUU	English	Sports	103
59	Planalp, S., & Trost, M.	Motivations of hospice volunteers	American Journal of Hospice & Palliative Medicine, 26 (3), 188-192	2009	EEUU	English	Social	351
60	Schrock, D. S., Meyer, M., Ascher, P., & Snyder, M.	Reasons for becoming involved as a Master Gardener	Hort Technology, 10(3), 626-630	2000	EEUU	English	Not specify	417
61	Treuren, G.	Some speculations on the origins and role of the Associative-Supportive motivation to volunteer	(Unpublished doctoral dissertation). University of South Australia, Adelaide, Australia	2013	Australia	English	Social	195
62	Trogdon, S. E.	A study of parks and recreation citizen board members in North Carolina and their motivation for participation	(Unpublished doctoral dissertation). North Carolina State University, Raleigh, NC	2005	EEUU	English	Environmental	291
63	United Way of Westmorland County.	The value of faith in action	Report	2011	EEUU	English	Social	115
64	Vocino, A., & Polonsky, M. J.	Volunteering for research	International journal of public opinion research, 23(4), 508-521	2011	China	English	Not specify	128
65	Willis-Jones, T. W.	Motivations for volunteering in a faith-based mentoring program	(Unpublished doctoral dissertation). Walden University, Minneapolis, MN	2014	EEUU	English	Education	112
66	Whitt, W. N.	Age-related differences in public library volunteers' motivations for volunteering	(Unpublished master's thesis). University of North Carolina, Chapel Hill, NC	2006	EEUU	English	Culture	14
67	Wong, C. M., & Foo, K. H.	Motivational functions, gender, age and religiosity influences on volunteerism	Journal of Tropical Psychology, 1(1), 31-44	2012	China	English	Not specify	128

used: five factors in the case of Jiranek, Kals, Humm, Strubel, and Wehner (2013), and four in the study by Bang et al. (2013). In the third study (Trauntvein, 2011), five items were added to the VFI to assess other motivations, obtaining a total of eight factors, but the first six factors found corresponded to the original factors of the VFI.

Of the remaining six studies, three support the structure of four factors of the VFI. Two of them correspond to adaptations of the VFI to Portuguese (Ferreira et al., 2011) and Italian (Marta et al., 2006), and the third (Planalp & Trost, 2009) eliminates twelve items and merges the Values and Understanding factors into a one factor, and the Protective and Enhancement factors into another.

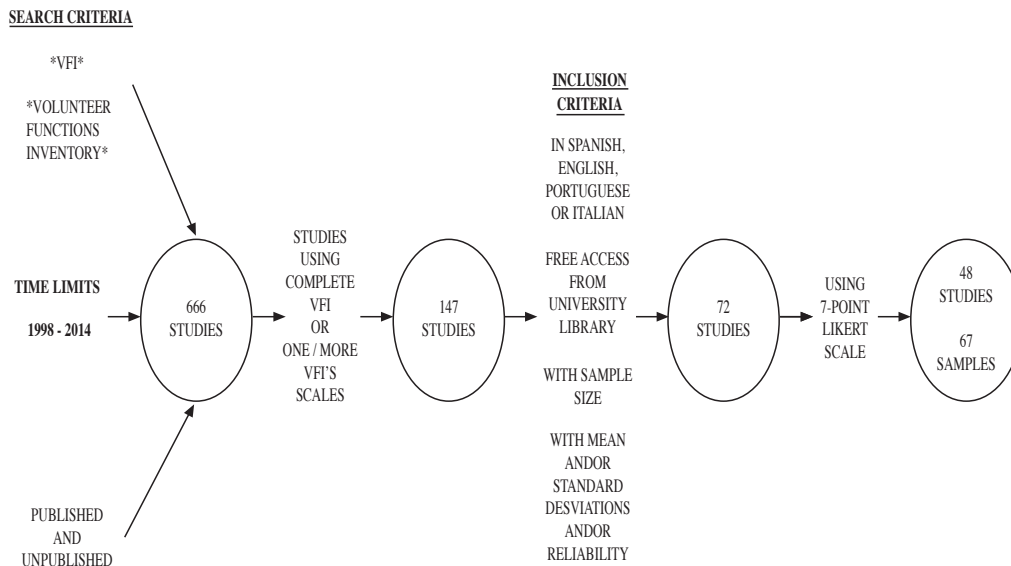


Figure 1. Articles selection algorithm

Table 3
Weighted means and standard deviations and average reliability coefficients of the VFI scales

Scale	N Samples (Studies) mean	Mean total	N Samples (studies) SD	SD total	N Samples (studies) reliability	Reliability total (α)
Values	21988 (53)	5.21	19332 (48)	1.35	17402 (30)	.78
Social	20375 (50)	3.61	17719 (45)	1.53	16554 (27)	.82
Understanding	21608 (57)	4.26	18232 (46)	1.49	16444 (27)	.83
Protective	20674 (50)	2.82	18018 (45)	1.46	16982 (30)	.83
Career	21698 (57)	2.89	18322 (47)	1.23	17286 (31)	.84
Enhancement	21698 (51)	4.22	18232 (47)	1.63	16413 (27)	.84

With regard to the last three studies, one shows a structure of five motivations (Gage & Thapa, 2012) after merging the Values and Understanding motivations. The other two studies give rise to a solution of seven factors. In one of the latter (Jones, 2004), the Values factor is subdivided into two factors (helping others and helping a cause or group), whereas in the second study (Dávila & Díaz-Morales, 2009), which used the Spanish version of the VFI, the item “Volunteering is a way to make new friends” is not saturated in the Enhancement factor, but instead is a new factor with a single item. It can also be seen in these results that two studies coincide in grouping the Values and Understanding factors (Gage & Thapa, 2012; Planalp & Trost, 2009).

Only two items: “Doing volunteer work relieves my feeling of guilt over being more fortunate than others”, from the Enhancement factor (Bang et al., 2013; Dávila & Díaz-Morales, 2009; Ferreira et al., 2011; Jiranek et al., 2013; Kim, Zhang, & Connaughton, 2010; Planalp & Trost, 2009; Wu et al., 2009), and the item “Volunteering relieves my feeling of guilt over being more fortunate than other people”, from the Protective scale (Do Paço & Agostinho, 2012; Ferreira et al., 2011; Jiranek et al., 2013; Kim et al., 2010; Planalp & Trost, 2009), were eliminated in more than two research studies due their poor psychometric properties. In addition, half of the total exclusions or modifications of items

(17 of 34) were concentrated in only two articles (Ferreira et al., 2011; Planalp & Trost, 2009).

Regarding publication bias, no significant differences were found in any of the VFI factors between published and unpublished research studies.

Discussion

The results shown that the mean score for the Values factor is higher than for all other motivations. This result is obtained in both men and women, in volunteers under and over 40 years of age, and in all volunteer settings. This is consistent with our hypothesis 1a. As expected in hypothesis 1b, the Understanding motivation obtained the second highest mean score. However, Hypothesis 1b is only partly fulfilled, since the Protective motivation is the one with the lowest mean score, but the second lowest is the Career motivation.

As predicted in hypothesis 2, the mean scores of Career scale vary significantly depending on age. In fact, some studies conducted in samples of people over 60 eliminated the Career scale as it has no theoretical relevance (for instance, Konrath et al., 2012). Volunteer age also appears to have influence on the Understanding scale, since studies with samples of young

Table 4
Means and standard deviations of VFI factors by volunteer setting

Variable	Volunteer setting		
	Group	N	Mean
VALUES	HEALTH	4	5.61
	SOCIAL	13	5.84
	EDUCATION	8	5.99
	SPORTS	7	5.25
	ENVIRONMENT	3	5.70
	CIVIL DEFENSE	2	5.75
SOCIAL	HEALTH	3	3.09
	SOCIAL	12	4.00
	EDUCATION	8	3.91
	SPORTS	7	3.99
	ENVIRONMENT	3	3.58
	CIVIL DEFENSE	2	4.10
UNDERSTANDING	HEALTH	3	3.72
	SOCIAL	12	5.33
	EDUCATION	8	5.19
	SPORTS	7	5.06
	ENVIRONMENT	3	4.89
	CIVIL DEFENSE	2	5.65
ENHANCEMENT	HEALTH	3	2.90
	SOCIAL	12	3.23
	EDUCATION	8	3.35
	SPORTS	6	3.38
	ENVIRONMENT	3	2.71
	CIVIL DEFENSE	2	3.50
CAREER	HEALTH	4	1.68
	SOCIAL	12	2.41
	EDUCATION	8	3.63
	SPORTS	6	4.20
	ENVIRONMENT	3	2.31
	CIVIL DEFENSE	2	3.95
ENHANCEMENT	HEALTH	3	4.33
	SOCIAL	12	4.27
	EDUCATION	8	4.57
	SPORTS	7	4.38
	ENVIRONMENT	3	3.95
	CIVIL DEFENSE	2	4.95

volunteers obtain significantly higher scores than studies with older participants.

As regards hypothesis 3, the order of the motives is the same in men and women, except in the two scales with the lowest mean score, where the Career and Protective scales reverse their positions, although in the case of women the difference in the mean scores of the two scales is very small. Significant differences by gender in the Social scale were found. This result could possibly be explained by the different gender distribution in different volunteer settings, but additional analyses are required and a larger number of studies to test this hypothesis.

The Career factor is the factor with the lowest variability and the Values factor is the factor with the second lowest standard deviation, thus partially confirming hypothesis 4. This is because though the Values factor is not the factor with the lowest variability, it is second ranking factor and its mean standard deviation is the lowest among the motivations used by Omoto and Snyder (1995). This finding could be explain why the Values factor, despite being the most highly rated factor by volunteers, is one of the least correlated with duration of volunteer service. In addition, the Values scale, as predicted, has the lowest mean reliability. This result could be explained by the low variability of the scale, since most subjects scores are high.

The VFI has very high reliability, and the reliability coefficients of the VFI scales range from adequate to good according to the Muñiz, Fidalgo, García-Cueto, Martínez, and Moreno (2005) assessment criteria for Cronbach alpha coefficients, thus corroborating hypothesis 5a.

Most factor analyses of the VFI confirm the original factor structure, maintaining the six factors, so it can be concluded that the VFI has high dimensional stability, confirming hypothesis 5b. However, it could be questioned how suitable some of the items in the Protective and Enhancement scales are to measure these factors. Most of the studies not confirming the original factors either added items or are adaptation to other languages, which could alter the factor structure.

The factor structure of the VFI is supported by the results of the study in two adult samples by Okun and Schultz (2003), who compared alternative models, and the results of the research study by Wu et al. (2009) who used confirmatory factor analysis to determine the superiority of the model of six independent factors,

Table 5
Descriptives of dichotomous variables used in comparisons of means for the variables age, gender and publication bias

Variable	Groups	AGE		% WOMEN		PUBLISHED	
		1: < 40		1: < 50 %		1: YES	
		N	Mean	N	Mean	N	Mean
VALUES	1	13	5.56	13	5.65	22	5.36
	2	22	5.76	25	5.54	14	5.74
SOCIAL	1	12	3.77	12	4.07	21	3.46
	2	21	3.84	23	3.56	12	3.92
UNDERSTANDING	1	18	5.19	13	4.95	22	4.61
	2	21	4.67	29	4.76	12	5.03
PROTECTIVE	1	12	3.12	12	3.07	21	3.12
	2	20	3.21	23	3.26	12	3.26
CAREER	1	18	3.82	12	3.47	21	2.94
	2	21	2.48	30	3.18	13	2.90
ENHANCEMENT	1	12	4.41	13	4.16	22	4.20
	2	21	4.26	23	4.38	12	4.38

over five other measurement models. Although, as Protective and Enhancement Scales have factorial instability in some studies, further studies are needed to reach definitive conclusions

It can be concluded that the VFI adequately assesses the most common motives in most types of volunteers. However, future researches could explore if there are other different motives in some types of volunteers that are not included in the VFI, as suggested by some of the studies using qualitative methods (Chacón, Pérez, Flores, & Vecina, 2010; Hochstetler, 2014). This fact is recognized by the VFI's authors themselves, who assess motives not included in the inventory in certain specific groups of volunteers (Clary & Snyder, 1995).

Although only small differences were found by sex, age or field, researchers should keep them in mind when generalizing their results on motivations of volunteering.

As the Values scale is the one that obtains higher scores, and, although its characteristics are good, it would be advisable that future studies try to improve this scale to increase its sensitivity and reliability.

To avoid underestimating the number of motivations, it is suggested to adapt the VFI to the different volunteer settings, and to complement its application with an open-ended question about the reasons underlying the decision to be a volunteer.

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