

MOTIVES AND DETERMINANTS OF VOLUNTEERING IN OLDER ADULTS: AN INTEGRATED MODEL

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ABSTRACT

The present study focused on changes in volunteering over time among Italian adults and examined a model in which motives from self-determination theory (SDT) were hypothesized to influence a series of social-cognitive processes including self-efficacy judgments and constructs from the theory of planned behavior (TPB). The study was conducted with 312 male (mean age = 66.10; *SD* = 5.28) and 253 female adults (mean age = 66.67; *SD* = 5.79) who worked as volunteers in several associations and organizations in Italy. In two occasions over the course of several months, participants respectively completed paper-and-pencil questionnaires and responded to telephone interviews which assessed the study's constructs of interest. Structural equation model analyses provided support for the guiding hypothesis and findings suggested that the more general approach of SDT can be successfully integrated with a social-cognitive framework such as the TPB to provide a better insight onto the origins of the cognitive predictors of intentions in older volunteers.

INTRODUCTION

Prolonged longevity and improved quality of life among older people increase the relevance of volunteering in later life. The importance of older people as a source of volunteering has long been recognized in several industrialized countries. Older people represent ideal candidates for this type of activity, not only for the societal benefits that accrue through volunteer service, but also because of the benefits they could gain from being engaged in volunteering. Indeed, there is considerable evidence linking older people's volunteering activity to higher levels of life satisfaction (Midlarsky, 1991; Onyx & Warburton, 2003), self-esteem, and quality of life (Chambrè, 1987; Pushkar, Reis, & Morros, 2002). A meta-analysis (Wheeler, Gorey, & Greenblatt, 1998) and recent longitudinal studies (Morrow-Howell, Hinterlong, Rozario, & Tang, 2003; Van Willigen, 2000) have confirmed the positive relations between volunteering and various measures of well-being, relations that remain significant even after controlling for differences in health status, age, and socioeconomic level. Moreover, some data suggest that volunteering is also related to positive functioning and to reduced mortality risk in those who volunteer (Musick, Herzog, & House, 1999), even when other types of activities (e.g., physical activity, everyday activities, or having a hobby) are taken into account (Shmotkin, Blumstein, & Modan, 2003).

These general considerations stress the importance that volunteering may have for one's positive functioning, especially when volunteering occurs in adult ages and when it acquires the characteristics of an activity that is well integrated in one's life, as well as perpetuated and renovated over time. Along these lines, Omoto and Snyder (1990), after summarizing much of the literature on volunteerism, exhort to develop integrative theories of volunteer motivation so that organizations can have some guidance in choosing the types of motivational constructs that may sustain volunteering and that can be assumed to be a key not only for enrolling but also for retaining people in these organizations successfully. The present study is consistent with these recommendations and proposes an empirical account of behavioral changes in Italian older adults' volunteering over time. In particular, it heavily, but not exclusively, relies on prior work in which the understanding of behavioral adoption and maintenance, both within and across behavioral contexts, has relied on the integration of both social-cognitive belief systems and motivational factors regulating individuals' behavioral intentions. This theoretical integration, known as trans-contextual model (Hagger & Chatzisarantis, 2007), has been successfully utilized to understand health-related phenomena such as physical activity and obesity, and contemplates constructs from the "theory of planned behavior" (TPB) (Ajzen, 1991) and from the "self-determination theory" (SDT) (Deci & Ryan, 2000). Both approaches have been separately adopted to investigate volunteering, but there is no existing research that has integrated them with the specific interest in volunteering in older adults.

After a brief summary of past research on volunteering, the following sections will highlight the key elements of each theoretical approach and justify the reasons for their integration in the present investigation.

Past Psychological Research on Volunteering

In the last 2 decades, volunteering research has focused on social and demographic predictors of volunteering (Chambré, 1987, 1993; Davis Smith, 1992; Marriott Senior Volunteerism Study, 1991; Okun, 1993; Okun & Eisenberg, 1992; Warburton, Le Brocque, & Rosenman, 1998). This work has led to more recent and important contributions on the importance that communities and organizational factors may have in promoting volunteering through emphasis on humanitarian and concern values (Okun & Michel, 2006).

Some authors, consistent with this prior work, have proposed a functional theory of volunteering (Clary & Snyder, 1991; Clary, Snyder & Ridge, 1992; Clary, Snyder, Ridge, Copeland, Stukas, Haugen, et al., 1998; Snyder & Omoto, 1992), and older people's propensity to volunteer has been analyzed in terms of differences in the motives, needs, and goals characterizing this group (Houle, Sagarin, & Kaplan, 2005; Okun, 1994; Okun, Barr, & Herzog, 1998; Okun & Eisenberg, 1992; Omoto, Snyder, & Martino, 2000). Overall, this work suggests that older volunteers are motivated by altruistic concerns and esteem values, such as the desire to feel useful, feel productive, and fulfil moral obligations (Okun, 1994) and motivated, to a lesser extent, by understanding and protective values, such as the opportunity of learning new skills or the opportunity for social interaction (Clary & Snyder, 1991).

The Theory of Planned Behavior and Volunteering

The theory of planned behavior (TPB) (Ajzen, 1991) represents a social-cognitive framework adopted for understanding people's behavioral intention and enactment. Overall, this perspective focuses on beliefs systems concerning behavioral outcomes, social influences on behavior, and personal control factors affecting one's behavioral choices. Specifically, the TPB suggests that behavior depends on one's plans of action (intentions) which, in turn, are regulated by attitudes (positive-negative evaluative appraisals of the behavior), by his or her perceived behavioral control (i.e., personal weights assigned to prior obstacles or circumstances) and by subjective norms (i.e., perceived social pressure to perform the behavior).

The TPB has been extensively and successfully applied to the prediction of a wide variety of behavioral intentions and behaviors, and recent meta-analysis evidence strongly supports the view that intention is a reliable predictor of behavior (e.g., Armitage & Conner, 2001; Hagger, Chatzisarantis, & Biddle, 2002; Sheeran, 2002). Noticeably, depending upon which study is considered, the predictive samples-averaged effect of intention on behavior ranges from .47

(Armitage & Conner, 2001) to .52 (Sheeran, 2002), thus also accounting for a substantial portion of the variation in behavior (Sheeran, 2002).

In short, the TPB is concerned with volitional behavior and the above studies have supported the key hypothesis that intentions regulate behavioral enactment. This approach has been implemented to also study one's decision to volunteer at both young and old ages (Greenslade & White, 2005; Okun & Sloane, 2002; Warburton & Terry, 2000; Warburton, Terry, Rosenman, & Shapiro, 2001). Overall, these contributions demonstrated the utility of TPB constructs in predicting adults' intention to volunteer and actual behavior.

The theory of planned behavior has undisputable merits, as already pointed out. Nonetheless, progress in social-cognitive theorizing has led many scholars to consider the possible integration between TPB and the construct self-efficacy. This integration is concerned with the distinction between self-efficacy and perceived behavioral control in addressing the notion of one's personal control. Self-efficacy focuses on internal aspects of control, whereas perceived behavioral control focuses more explicitly on the influence that external factors may have on behavior (Terry & O'Leary, 1995). Several studies have supported this conceptual distinction by pointing out that these constructs show different patterns in predicting people's behavioral intentions (e.g., Armitage, Conner, Loach, & Willetts, 1999; Manstead & van Eekelen, 1998; Norman & Hoyle, 2004).

The integration between the TPB and self-efficacy judgments not only has value for theory development. It also might be beneficial for understanding people's renewed efforts in volunteering over time. On one side, a renovated commitment in and intention to volunteering by someone may reasonably depend on personally monitoring his or her contribution in the activities of volunteering and on aligning judgments of self-confidence accordingly (i.e., self-efficacy). On the other side, over time volunteering may also depend on an ongoing assessment of personal control over any situational factor or circumstance that may hinder or render one's effort toward volunteering more difficult (i.e., perceived behavioral control). In the present study, we examined the effects of TPB constructs and self-efficacy judgments on older people's intention to volunteering and, in turn, on *changes* in self-reported volunteering over time.

Motivational Processes implicated in Volunteering: An Integrated View linking Self-Determination Theory to Social-Cognitive Beliefs

Behavioral change in volunteering may also depend on people's general motivational orientations. This hypothesis is consistent with formulations expressed by existing motivational literature. Self-determination theory (SDT) (Deci & Ryan, 1985; 2000; Ryan & Deci, 2000) is a theoretical framework that considers motivational and regulatory processes implicated in goal-directed activities within a given behavioral domain. According to SDT theory, one's regulatory

process varies along a continuum which, starting from regulatory states characterized by lack of any motivation (i.e., a motivational state labeled “amotivation”), range from controlled (i.e., from other people or events) to more autonomous or self-determined forms of regulation. While controlled regulation is concerned with one’s experience with external contingencies and pressure, autonomous regulation is concerned with one’s experience of personal volition and choice (Vansteenkiste, Lens, & Deci, 2006). SDT theory hypothesizes that both forms of regulation give rise to different motivational states that vary depending on the degree to which activities or behaviors have and acquire internal qualities or value. In particular, as to controlled regulation, individuals may experience the motivational states labeled “external” (i.e., the person acts with a feeling of being controlled by external pressures or contingencies) and “introjected” (i.e., the person acts with a feeling of being controlled by his or her own internal processes). As to forms of autonomous regulation, instead, individuals may experience the motivational states labeled “identified” (i.e., individuals recognize the importance or value of a behavior), “integrated” (i.e., behaviors are integrated with other aspects of the self), and “intrinsic” (i.e., behaviors that are done solely as a source of spontaneous enjoyment and satisfaction). The latter motivational state (i.e., intrinsic) is the prototype of autonomous activity and people are, by definition, self-determined. As a consequence, intrinsically motivated behaviors are those that are freely engaged out of interest, without the necessity of separable consequences (Ryan & Deci, 2000).

SDT studies that do not explicitly address volunteering in older people (Gagnè, 2003; Greene-Demers, Pelletier, & Menard, 1997) suggest, however, the value for motivational accounts of volunteering in youth and adults. Some of this work (Gagnè, 2003) has for instance shown that forms of autonomous regulation predicted college students’ prosocial behaviors, such as volunteering for non-profit organizations, donating blood, signing petitions, donating money to charitable organizations, or helping in emergency situations; similarly, among adults, autonomous regulation predicted their commitment and activity in animal shelters (Gagnè, 2003). Finally, another adult study (Greene-Demers et al., 1997) has shown that participants’ autonomous regulation regulated their adoption of socially valued behaviors that required commitment and substantial personal effort, such as recycling. Consistent with the above literature, the present study explicitly examined the extent to which the different SDT motivational states (i.e., from amotivation to intrinsic states) exerted, over time, a direct effect on changes in self-reported volunteering among older adults.

The SDT motivational orientations may exert an effect on older adults’ volunteering by also influencing the social-cognitive processes and belief acquisition underpinning the TPB constructs and self-efficacy judgments described earlier. Theoretically, Deci and Ryan (1985) pointed out that salient characteristics of social cognitive theories can be integrated with constructs from SDT to form a “more complete motivational theory” (p. 229). Likewise, as some scholars have

convincingly argued (e.g., Chatzisarantis, Biddle, & Meek, 1997; Hagger & Chatzisarantis, 2007; Hagger et al., 2002), people may also draw on their motivational orientations in formulating their behavioral intentions, and an integration between these two general perspectives would provide the basis for identifying the determinants of people's acquisition of attitudes, subjective norms and perceived behavioral control and self-efficacy, as well as for defining more precisely the linkages between forms of regulation (i.e., autonomous vs. controlled) and motivation-laden constructs (i.e., intentions) that shape one's behavioral engagements.

This integration has proven beneficial in several domains, ranging from leisure time physical activity (Chatzisarantis, Hagger, Smith, & Sage, 2006; Hagger & Chatzisarantis, 2007; Hagger, Chatzisarantis, Barkoukis, Wang, & Baranowski, 2005; Hagger et al., 2002; Hagger, Chatzisarantis, & Harris, 2006) to prescribed exercise programs and dietary behaviors (Brickell & Chatzisarantis, 2007; Harris & Hagger, 2007; Vierling, Standage, & Treasure, 2007; Wilson, Rodgers, Blanchard, & Gessell, 2003). In line with the above recommendations, the present study examined a model in which changes in volunteering behaviors over time depended on older adults' motivational orientations and on the intervening effects that these orientations would have on the attitudes, social norms, perceived behavioral control and self-efficacy judgments concerning volunteering and affecting people's intention to volunteer.

The Current Investigation

In summary, the present study investigated Italian older adults' volunteering and examined a psychological model linking SDT motivational orientations and social-cognitive beliefs of the type suggested by the theory of planned behavior. In particular, the model tested a series of longitudinal effects in which, after controlling for the stability of volunteering over time, older adults' *changes* in volunteering depended, at the most distal level, on older adults' general motivational tendencies. These motivations exerted, in particular, direct effects on people's evaluation of volunteering, as manifested in attitudes, social norms, perceived behavioral control, self-efficacy, behavioral intentions, and changes in volunteering. Furthermore, the model hypothesized that attitudes, social norms, perceived behavioral control, and self-efficacy exerted direct effects on behavioral intention and on volunteering, after controlling for its stability over time. In turn, behavioral intention directly affected volunteering. Therefore, the model overall pitted the hypothesis of direct motivational influences on volunteering against the hypothesis of indirect motivational influences through their effects on social-cognitive beliefs and intentions.

In line with both SDT and TPB theories, while we more specifically hypothesized that forms of autonomous regulation (e.g., intrinsic or integrated regulation) would positively contribute to older adults' acquisition of beliefs sustaining

volunteer behavior, we expected that forms of controlled regulation (e.g., external motivation) would particularly contribute to older adults' beliefs concerning social influences. The study relied on longitudinal data from hundreds of participants who were involved in volunteering at the outset of the study.

METHOD

Participants

A total of 615 older volunteers, from 60 to 90 years old, participated in the study. Of these, 312 were males (mean age = 66.10; $SD = 5.28$) and 253 were females (mean age = 66.67; $SD = 5.79$). This sample composition is in line with a recent National report of the Italian National Institute of Statistics on volunteering (ISTAT, 2005). At the beginning of the study, the majority of respondents (76%) were already involved in volunteer services for more than 3 years, and most of them (84%) reported to do volunteer work for at least 1 day per week in the 3 months prior to the study.

Participants were members of different volunteer associations and organizations in Italy. Nearly 36% of the participants, were members of the "Associazione per l'Autogestione dei Servizi e Solidarietà" (AUSER). This is the largest national volunteer association for older adults in Italy. Volunteers from this association carry out their services in museums, public libraries, and schools. Nearly 22% of the participating sample was instead composed of older adults who volunteered for blood donation associations (i.e., AVIS, ADSPER, ADVS, EMATOS); volunteers from these associations assist and support blood donors and carry out autocratic assignments. Twenty percent of participants were members of the "Tribunale dei Diritti del Malato" ("The Court for the Rights of Ill People"). Volunteers in this organization protect and safeguard the health rights of the ill. Just over 14% of the participating volunteers were members of the "Association of Civil Protection" and typically participate in different actions such as preventing and protecting against natural or man-made disasters or responding to environmental emergencies. Two percent of the participants were enrolled in "Seniores Italia," a small non-profit organization. These volunteers are professionals, executives, or experts from the Italian public or private economic sectors. They have a substantial life-time experience and technical skills which they offer on a voluntary basis to contribute to solidarity and international cooperation. Finally, 4.4% of participants belonged to other minor volunteer associations. Nearly 86% of the participants were retired, 9.1% were housewives, and 5.5% were still in the work force.

Procedure

At the outset of the study, several kinds of volunteer associations and organizations in Italy were contacted for obtaining their consent to participate to the

study. After the consent from these associations, registered members of the associations were then recruited by a representative of the associations and asked to participate to the study. Very few cases (10%) refused to be part of the study, primarily for personal, family, or health problems. Trained interviewers (research assistants), after contacting the participants and collecting their informed consent for the study, administered a set of questionnaires individually to each participant.

Questionnaires were administered on site after arranging the date with each participant, and the administration took approximately 40 minutes. After 3 months from a first assessment, participants were contacted again by telephone for a follow-up interview. Of the original sample of participants, 574 (93.3%) provided follow-up data.

Assessment and Instruments

In the first assessment, a questionnaire assessed participants' demographic information, TPB variables, self-efficacy, self-determined motives to volunteer, and self-reported volunteer activities in the past 3 months. Three months later, participants self-reported their past volunteer activities that occurred since the first assessment.

For many of the measures, we use the principle of parceling (Kim & Hagtvet, 2003; Little, Cunningham, Shahar, & Widaman, 2002) to reduce the number of items, to obtain measure indicators of the various constructs, and to arrive to a more parsimonious measurement model needed for testing our hypotheses. Item parceling consists in combining items into a smaller set of items within scales or subscales to reduce the dimensionality and number of parameters being estimated, resulting in more stable parameter estimates and proper solutions of model fit. Little et al. (2002) list three reasons that parceling can be advantageous over using the original items:

1. estimating large numbers of items is likely to result in spurious correlations;
2. subsets of items from a large item pool will likely share specific sources of variance that may not be of primary interest; and
3. solutions from item-level data are less likely to yield stable solutions from parcels of items.

Measures from the Theory of Planned Behavior

With respect to the wording and scaling of the TPB variables, the authors followed the recommendations set forward by Ajzen (1991).

Attitudes

Nine items assessed the favorability of participants' attitudes toward volunteering ($\alpha = .83$). Respondents rated the target behavior on a series of 5-point

semantic-differential scales tapping both the cognitive, affective, and moral aspects of attitudes (useless-worthy, negative-positive, boring-interesting, unpleasant-pleasant, immoral-moral, advantageous-disadvantageous, bad-good). The stem for participants was: "For me, volunteering during the next 3 months will be. . . ." We created three attitude scores by randomly grouping three items in three separate sets and by averaging the item scores in each set. In each case, higher scores indicated more positive attitudes toward volunteering. These three items were used as measurement indicators in the test of our hypotheses.

Subjective Norms

Three items measured participants' subjective norms ($\alpha = .86$) on a 5-point scale ranging from 1 (*Not at all*) to 5 (*Completely*). The first two items were worded as follows: "Those people who are most important to me would approve if I volunteered over the next 3 months" and "Those people most important to me think that I should volunteer over the next 3 months." Finally, the third item asked respondents: "To what extent are you convinced that meaningful others would approve that you volunteered during the next 3 months?" These three items were used as measurement indicators in the test of our hypotheses.

Perceived Behavioral Control

The perceived ease or difficulty of performing volunteering was measured with three items ($\alpha = .67$) and these measurements were used as indicators of PBC for testing our hypotheses. In particular, participants rated the extent to which their decision to volunteer in the next 3 months was up to them on a 5-point scale ranging from 1 (*it is not up to me at all*) to 5 (*it is completely up to me*). They also rated how easy it would be for them to volunteer in the next 3 months on a 5-point scale ranging from 1 (*extremely easy*) to 5 (*extremely difficult*). This item was reverse scaled. Finally, participants indicated on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) the extent to which they were in accord with the following item: "If I wanted to, I could easily volunteer during the next 3 months."

Self-Efficacy

Participants completed an 11-item volunteering self-efficacy scale ($\alpha = .85$). Each item was answered on a 5-point response scale ranging from 1 (*not confident at all*) to 5 (*totally confident*). The scale was adapted from a measure originally designed for volunteers in health service organizations (Barbaranelli & Capanna, 2001). Sample items from the scale are: "How confident do you feel that you will be able to efficiently coordinate your work with other volunteers?" and "How confident do you feel that you will be able to relate well to those who benefit from your volunteer activity?" Consistent with the criteria of the

aforementioned parceling procedure, we created three sets of, respectively, 3, 4, and 4 items, in each of which items were included through random selection and their scores averaged. For each set, a higher score indicated higher self-efficacy toward volunteering.

Intention

Two questions assessed participants' intention to volunteer ($\alpha = .73$). A 5-point scale, ranging from 1 (*Not at all*) to 5 (*Completely*), represented the response scale. On the first item, participants rated the strength of their intention to volunteer during the next 3 months. On the second item, participants rated the probability of performing volunteering in the next 3 months. Both items were used as measurement indicators in the test of our hypotheses.

Motivation to Volunteer Scale (MVS)

Participants' motivations to volunteer were assessed through the "Motivational to Volunteer Scale" (MVS) (Grano & Lucidi, 2005). This scale is based on SDT theory (Deci & Ryan, 1985). As reported elsewhere (Grano & Lucidi, 2005), exploratory factor analyses of the 24 items revealed 6 underlying factors (4 items per subscale) representing, respectively, intrinsic motivation, integrated regulation, identified regulation, introjected regulation, external regulation and amotivation, and the instrument showed very good psychometric properties and concurrent validity with other volunteer motivation instruments (e.g., Volunteer Function Inventory) (Clary et al., 1992). Each item of the MVS represents possible motives for volunteering, and respondents were prompted by the question "Why are you volunteering?" and by the stem "I volunteer . . ." Sample items include: ". . . For the pleasure in mastering new ways of help" (Intrinsic motivation); ". . . Because volunteerism is an integral part of my life" (Integrated regulation); ". . . Because is a reasonable thing to do" (Identified regulation); ". . . Because I'd regret not doing volunteer" (Introjected regulation); ". . . For the recognition I get from others" (External regulation); ". . . I don't know; can't see what I'm getting out of it" (Amotivation). Participants were asked to indicate the extent to which each item corresponded to their personal experience with volunteering. Ratings were made on 5-point Likert scale ranging from 0 (*does not correspond at all*) to 4 (*corresponds exactly*). Cronbach's alpha in the present data was .80 (Intrinsic motivation), .88 (Integrated regulation), .80 (Identified regulation), .87 (Introjected regulation), .78 (External regulation), and .71 (Amotivation). Consistent with the criteria of the aforementioned parceling procedure, we created, for each motivation subscale, two measurement indicators by averaging the scores of, respectively, the odd- and the even-numbered items. For each motivation subscale, these two indicators were then used as measurements in the structural equation test of our hypotheses.

Volunteering Behavior

At both assessments, participants also self-reported their volunteering activities over time. In the first assessment, two items measured participants' behavior on two frequency items which, respectively, asked them to report how many times per week they volunteered in the last 3 months and how many times they volunteered in the last week. Items were answered on a 5-point scale ranging from 1 (*less than 1 time per week*) to 5 (*every day of the week*). In the second assessment, participants indicated on a three-item scale, respectively, the frequency of their volunteering in the past 3 months, the extent to which they accomplished their volunteering duties, and the extent to which they volunteered in all the occasions they were asked to provide their volunteering services ($\alpha = .86$). Items were answered on a 5-point scale ranging from 1 (*Never*) to 5 (*Always*).

Statistical Analyses

In line with SDT hypotheses, we first analyzed correlations among the independent motivational factors to verify the existence of a motivational continuum concerning volunteering and ranging from autonomous to more controlled motives. We then tested and estimated relations among the SDT variables, the TPB variables, self-efficacy, intention, and behavior. Since we relied upon multiple indicators for each construct of interest, we employed a latent variable approach beginning with a confirmatory factor analysis to evaluate the construct validity of the measures and the factor correlations to support discriminant validity followed by testing relations among the latent variables using a structural equation modeling approach. The models were estimated using the EQS computer program, version 6.1 (Bentler, 2004). The maximum-likelihood method was used to estimate the model parameters. Twelve latent constructs were hypothesized for, respectively, intrinsic motivation, integrated regulation, identified regulation, introjected regulation, external regulation, amotivation, attitudes, subjective norms, perceived behavioral control, self-efficacy, intention, and volunteering behavior.

Since factor models might be statistically rejected on the basis of large sample sizes and the goodness-of-fit chi square, we followed Hu and Bentler's recommendations (1999) and evaluated goodness-of-fit using the comparative fit index (CFI) (Bentler, 1990), the non-normed fit index (NNFI) (Bentler, 1990), the standardized root mean square of the model residuals (SRMSR), and the root mean square error of approximation (RMSEA). Fit indices above .90 are indicative of adequate model fit (Bentler, 1990), although values approaching .95 are recommended (Hu & Bentler, 1999) and values lower than .08 and .05 for, respectively, the SRMSR and RMSEA are considered indicative of good model fit (Hu & Bentler, 1999).

RESULTS

Preliminary Analyses and Measurement Model

Before testing the full structural model, factors with more than three indicators (i.e., that were over-identified) were examined in order to ensure their unidimensionality. We, in particular, tested a measurement model that included the estimation of the factor loadings linking each indicator to its hypothesized latent construct and the estimation of the intercorrelations linking all the latent factors. All the factor loadings were statistically significant and ranged between .50 and .91. The fit of the measurement model was good (CFI = .97; NNFI = .96; RMSEA = .04; SRMR = .03).

Table 1 shows the means, standard deviations, and factor (i.e., latent) correlations among constructs for the entire sample. The correlations among the contiguous MVS subscales display the highest positive values, supporting the existence of a motivational continuum. The magnitude of the correlations generally decreases progressively as a function of the distance between the subscales on the continuum. Furthermore, as the distance between motivational types increases, the correlations between the subscales grow negative. Factor correlations among SDT motives and TPB predictors and self-efficacy were also all in the expected direction. Autonomous and controlled motives correlated positively with TPB predictors and self-efficacy, whereas amotivation correlated negatively.

The Hypothesized Structural Model

According to the guiding hypotheses, we tested a model of longitudinal effects on *changes* in later volunteering behavior that contemplated direct effects of early self-reported volunteering, SDT motivations, TPB variables, and self-efficacy. Furthermore, the model also hypothesized direct effects of SDT motivations onto TPB variables and self-efficacy, thus modeling the possibility that motivations would exert their effects on later volunteering through the intervening effects of the social-cognitive mechanisms summarized by TPB and self-efficacy.

The analysis yielded a very good model fit. Albeit the chi-square statistic was statistically significant ($\chi^2 = 724.45$; $df = 37$; $p < .001$), the CFI and the NNFI were both above the more stringent threshold reported in the literature (CFI = .96; NNFI = .95). In addition, the SRMSR and the RMSEA were, respectively, .04 and .04, and both indices were under the recommended thresholds. The statistically significant standardized structural coefficients linking the constructs are reported in Figure 1.

As we expected, there was temporal stability in volunteering behavior ($\beta = .29$, $p < .05$) and, despite this stability, early intention predicted *changes* in later volunteering ($\beta = .34$, $p < .08$). There were no other factors that affected directly behavioral changes. Together, behavioral stability and intention contributed to

Table 1. Intercorrelations, Means, and Standard Deviations for the Variables in the Model

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Behavior	—												
2. Intention	.29**	—											
3. Attitudes	.19**	.71**	—										
4. SN	.13	.46**	.35**	—									
5. PBC	.23**	.74**	.47**	.43**	—								
6. SE	.22**	.59**	.41**	.38**	.47**	—							
7. Intrinsic	.08	.45**	.37**	.27*	.32**	.41**	—						
8. Integrated	.15**	.67**	.57**	.32**	.44**	.48**	.64**	—					
9. Identified	.18**	.54**	.50**	.27**	.38**	.46**	.60**	.70**	—				
10. Introjected	.08	.46**	.37**	.19**	.18**	.35**	.55**	.66**	.64**	—			
11. External	.11	.16*	.20**	.19**	-.00	.13*	.37**	.26**	.34**	.46**	—		
12. Amotivation	-.06	-.27**	-.38**	-.11	-.26**	-.21**	-.15**	-.26**	-.24**	-.13*	.17**	—	
13. Past behavior	.33	.26**	.29**	.14**	.25**	.11	.17**	.19**	.14	.12	.23	-.13	—
<i>M</i>	4.30	4.09	4.44	2.54	4.13	3.92	3.78	4.01	4.02	3.34	2.04	1.43	1.43
<i>SD</i>	0.79	0.66	0.45	1.09	0.64	0.47	0.76	0.74	0.64	0.99	0.91	0.55	0.55

Note: SN = Subjective Norms; PBC = Perceived Behavioral Control; SE = Self-efficacy.

**p* < .05

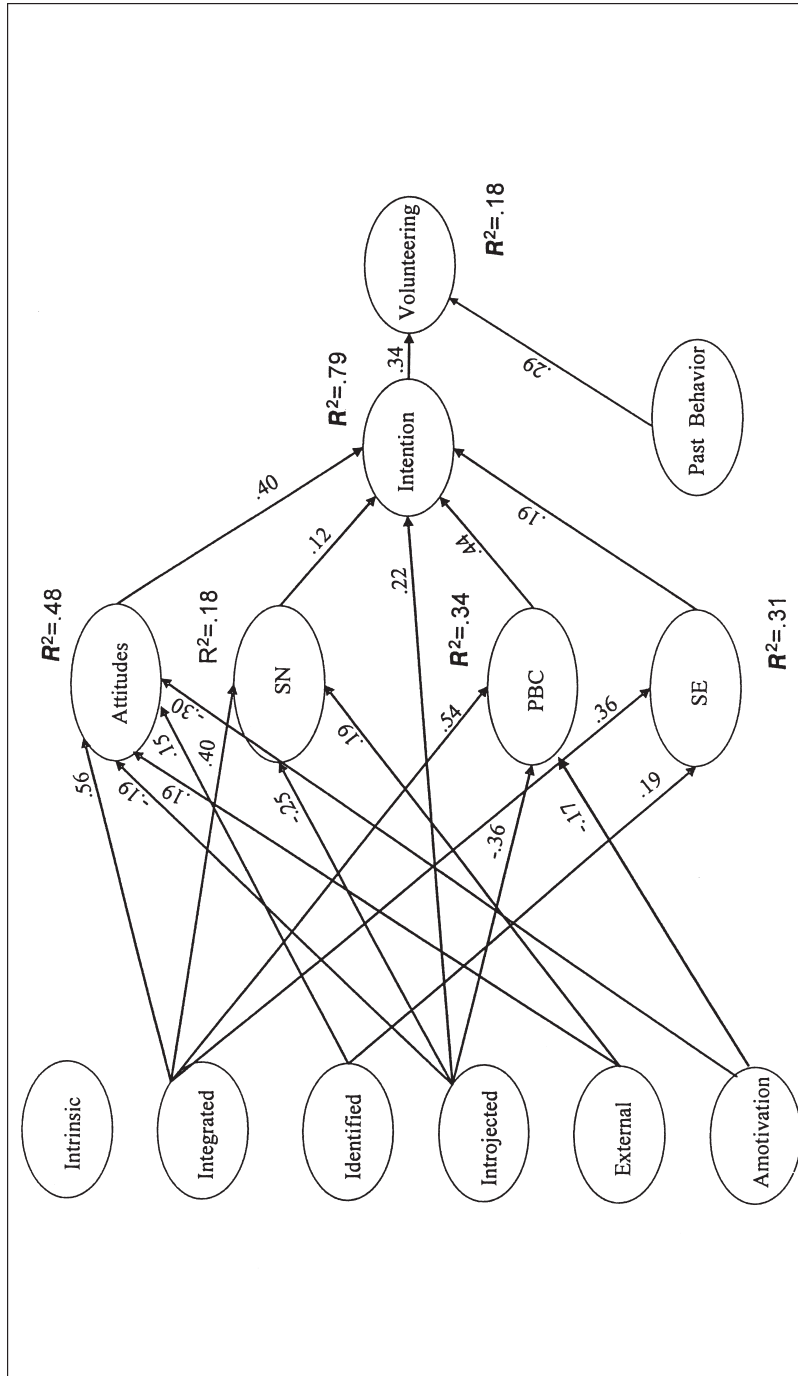


Figure 1. The latent relations among TPB and SDT constructs predicting volunteering after controlling for past behavior.

explaining 18% of the variance in behavioral changes in later volunteering, recorded by means of retrospective self-reports.

Concurrently, SDT motivations significantly contributed to TPB variables and self-efficacy, whereas they, overall, exerted no direct role in the prediction of older adults' intention to volunteer or to self-reported volunteering measured at a later time point. In particular, integrated regulation contributed directly and positively to attitudes ($\beta = .56, p < .05$), subjective norms ($\beta = .40, p < .05$), perceived behavioral control ($\beta = .54, p < .05$), and self-efficacy ($\beta = .36, p < .05$). Identified regulation contributed directly to attitudes ($\beta = .15, p < .05$) and self-efficacy ($\beta = .19, p < .05$). In addition, the level of participants' introjected regulation also predicted, positively, their intention to volunteer ($\beta = .22, p < .05$) and negatively, attitudes ($\beta = -.19, p < .05$), subjective norms ($\beta = -.25, p < .05$), and perceived behavioral control ($\beta = -.36, p < .05$). Considering that there were positive factor correlations linking introjected regulation to TPB predictors (as reported in Table 1), the negative paths of introjected regulation with attitudes, subjective norms, and perceived behavioral control might be a statistical artifact indicating suppressor effects (Cohen & Cohen, 1983).¹ There also were significant and positive effects of external regulation on attitudes ($\beta = .19, p < .05$) and subjective norms ($\beta = .19, p < .05$), and amotivation was negatively linked to attitudes ($\beta = -.30, p < .05$) and perceived behavioral control ($\beta = -.17, p < .05$). As a whole, SDT motives explained nearly 48% of the variance in attitudes, 18% in subjective norms, 34% in perceived behavioral control, and 31% in self-efficacy.

In turn, intention was significantly predicted, in addition to the aforementioned effect of introjected regulation, by attitudes ($\beta = .40, p < .05$), subjective norms ($\beta = .12, p < .05$), perceived behavioral control ($\beta = .44, p < .05$), and self-efficacy ($\beta = .19, p < .05$). Overall, these effects substantially explained participants' intention to volunteer as they, together, accounted for nearly 80% of its variability in older adults.

It is noteworthy that, overall, the above findings suggest that SDT motivational states contributed significantly to the acquisition of or support to those belief

¹ We are facing a suppression effect when an independent variable that is useful in predicting the dependent variable, increases the variance explained by the dependent variable by virtue of its correlations with other independent variables. Different types of suppression effects may occur. In this case, we have a negative or net suppression effect. This is verified when the sign of a regression weight of an independent variable is the opposite of what would be expected on the basis of its correlation with the dependent variable. The variance predicted in the dependent variable, still is enhanced because the magnitude of the effect of the independent variable is greater (although the sign is opposite) in the presence of the suppressor (Tabachnick & Fidell, 2007). In this case, the regression weight of interjected regulation becomes negative in virtue of the high correlations of this variable with the other independent variables (identified regulation, integrated regulation). Thus identified and integrated regulation are negative suppressor for introjected regulation.

systems sustaining the TPB constructs. Furthermore, the findings also suggest that the acquisition of these belief systems represents the key process through which SDT motivational states exerted their effects on older adults' intention to volunteer and self-reported behavior.

DISCUSSION

The primary aim of the study was to examine the possibility that behavioral changes in volunteering over time among Italian older adults would depend on their motivational orientations toward volunteering and on the effects these orientations have on specific attitudes and beliefs supporting and regulating their intention to volunteer. This empirical effort was consistent with a well-established theoretical framework which has been extensively utilized in several behavioral domains (Hagger et al., 2002) and that proposes a simultaneous analysis of motivational orientations and social-cognitive beliefs primarily stemming from, respectively, the research tradition of self-determination theory and that of the theory of planned behavior. This integrated model enabled us to predict longitudinal changes in self-reported volunteer behavior and to ascertain the relative importance of motivational states and the social cognitive processes regulating volunteer behavior.

We considered a large sample of older adult Italian volunteers belonging to different types of associations and conducted a longitudinal investigation through which we found general support for the model guiding the investigation. Overall, our study's participants showed continuity in volunteering, as the behavioral stability estimated in the model clearly suggests. Nonetheless, the moderate stability estimate (latent estimate = .29) permitted to examine and model behavioral changes over time. Broadly, our data showed that over-time changes in volunteering among Italian older adults' depend directly on older adults' deliberate or intentional choice to volunteer, that this choice indirectly depended on belief systems endorsing volunteering (i.e., attitudes, behavioral control, self-efficacy), and these processes, in turn, depended, at least to some extent, on a variety of motivational states.

The above findings can be discussed along several lines of considerations. The first is that more positive attitudes and a stronger behavioral control contributed most strongly to older adults' intention to volunteer. That is, those who viewed volunteering as a useful, interesting, pleasant and valuable activity, and who considered volunteering under their personal control were those who reported stronger intentions to volunteer. Noticeably, older adults' intention to volunteer was also partly regulated by one's own sense of duty and obligations (i.e., introjected motivational state), a finding that is consistent with findings from Warburton and Terry (2000) who reported that moral obligation is a significant predictor of intention. Secondly, our correlational findings supported the existence of a motivational continuum in the context of volunteerism, and this

continuum reliably ranged from amotivation and external motivational states to intrinsic motivational states.

Thirdly, this set of motivational states overall impacted on older adults' social-cognitive beliefs concerning volunteering. Autonomous forms of regulation were largely responsible for this influence. Older adults who viewed volunteering as an integral part of themselves and as a way of living (i.e., integrated motivational state) or who recognized the importance or value of a behavior (i.e., identified motivational state) clearly showed beliefs endorsing volunteering, especially for stronger positive attitudes toward volunteering and stronger confidence in overcoming difficulties. Furthermore, those who expressed an integrated motivational state also perceived more consensus from others to volunteer and heightened personal rather than external control. Noticeably, intrinsic motivation, that is, the motivation to engage in an activity for its own sake and for one's own interest and enjoyment did not contribute to the effects of autonomous regulation on social-cognitive belief systems. This finding is consistent with findings from both Pelletier, Tuson, Greene-Demers, Noels, and Beaton (1998) and Koestner, Losier, Vallerand, and Carducci (1996), indicating overall that intrinsic motivation did not predict pro-environmental or citizenship behaviors as well as other autonomous forms of regulation.

Thus, our findings on autonomous forms of regulation overall permitted clear conclusions. This is not the case for all the forms of controlled regulation. Relatively clear findings emerged for external forms of regulation. In particular, older adults who envisioned that their volunteering depended in part on external pressures or contingencies expressed positive attitudes toward the activity and believed in others' approval. These effects, although similar to those concerning autonomous forms of regulation, were nonetheless relatively smaller in absolute value. In contrast, the findings for introjected forms of regulation revealed inconsistencies. On one side, our positive correlational findings suggested that those older adults who indicated that their volunteering partly depended on feelings like guilt, sense of duty, or ethical demands were also those who held beliefs endorsing volunteering, be they in terms of positive attitudes toward the activity, others' approval for volunteering, or beliefs about personal control. On the other, however, our modeling findings illustrated in Figure 1 show that this form of controlled motivation exerted *negative* effects on these beliefs endorsing volunteering. We believe that this inconsistency across analyses is an expression of the sort of artifact that we discussed earlier in terms of suppressor effects.

Our findings have important applied implications, especially for volunteer associations/organizations seeking to retain older volunteers. Volunteer leaders and representatives have numerous ways for intervention and may choose to intervene to change motives and cognitive beliefs at each point on the causal chain of our hypothetical model. Based on the general finding that positive attitudes strongly influence intention to volunteer, the only factor influencing behavioral changes in volunteering, policy programs may focus on providing salient and

accessible information on the importance of volunteering and on highlighting the advantages of volunteering. Likewise, considering the strong influence of perceived behavioral control and self-efficacy, policy programs may also focus on the value of volunteering by acknowledging the conflicts and difficulties that volunteers may encounter and by giving them information, experiences, and strategies on how to personally manage and resolve these conflicts and difficulties. Based on our findings, policy may simultaneously also focus on highlighting the value of motivational processes stressing the relevance of the person and of autonomous and self-determined motives. In this sense, volunteer organizations may encourage volunteers to identify their own reasons for volunteering or to seek ways for integrating the value systems sustaining volunteering with their habitual daily activities.

In conclusion, it is important to highlight some limitations or caveats of our investigation. Our data relied on a model assigning a critical role to SDT motives and to their possible contribution to proximal determinants of older adults' intention to volunteer and of changes in volunteering. This model was primarily guided by theoretical considerations rather than considerations about assessment. That is, while participants' volunteering was assessed 3 months after the collection of psychological data, the latter was collected cross-sectionally, thus limiting conclusions about causal effects linking SDT to social-cognitive variables. Additional, more precise, longitudinal investigations in the future are clearly needed. Furthermore, the value of additional longitudinal analyses may also come from adopting the present model to study not only older adults who have already initiated and chosen to volunteer, but also those who do not volunteer and may choose to do so. In this latter case, of course, the focus would be on the adoption of new behaviors rather than on the maintenance or renewal of behaviors already adopted, and the assessment instruments would require substantial changes to converge on such a focus.

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