

Volume 42, issue 8, June 2007 ISSN 0191-8869

PERSONALITY AND INDIVIDUAL DIFFERENCES

AN INTERNATIONAL JOURNAL OF RESEARCH INTO THE
STRUCTURE AND DEVELOPMENT OF PERSONALITY,
AND THE CAUSATION OF INDIVIDUAL DIFFERENCES

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ISSN 0191-8869
42(8) 1439-1640 (2007)

OFFICIAL JOURNAL OF THE INTERNATIONAL SOCIETY FOR THE STUDY OF INDIVIDUAL
DIFFERENCES (ISSID)

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Personality and Individual Differences 42 (2007) 1467–1477

PERSONALITY AND
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Unpacking the relation between extraversion and volunteering in later life: The role of social capital

Morris A. Okun^{a,*}, John Pugliese^a, Karen S. Rook^b

^a Department of Psychology, Arizona State University, Tempe, AZ 85287-1104, United States

^b Department of Psychology and Social Behavior, University of California at Irvine, Irvine, CA 92697-7085, United States

Received 30 April 2006; received in revised form 23 August 2006

Available online 1 December 2006

Abstract

This study tested the hypothesis that the relation between extraversion and volunteering by older adults is fully mediated by social capital (participation in clubs and organizations, church attendance, and contact with friends). Data for this study come from 888 adults between the ages of 65–90 years old who participated in the Later Life Study of Social Exchanges (LLSSE). In support of our hypothesis, structural equation modeling revealed that extraversion exerted: (a) a significant total effect on volunteering (0.122), (b) significant indirect effects on volunteering via contact with friends (0.042), church attendance (0.034), and clubs and organizations (females only: 0.042), and (c) a non-significant direct effect on volunteering (0.010). These findings suggest that social capital provides a viable explanation for the association between extraversion and volunteering.

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Keywords: Church attendance; Extraversion; Friends; Older adults; Organizational ties; Social capital

1. Introduction

Older adults constitute an immense reservoir of human capital, and volunteering represents one of the venues for them to contribute productively to society (Butler, 2002). The demand for

* Corresponding author. Fax: +1 480 965 8544.

E-mail address: okun@asu.edu (M.A. Okun).

volunteers among future generations of older adults is forecasted to increase (Soo & Gong-Soog, 1998). In light of this projection, it is important to understand the dynamics of volunteering by older adults. One factor that has received scant attention from researchers is the influence of extraversion on volunteering by older adults. It is possible for personality traits to exhibit both direct and indirect effects on volunteering (Carlo, Okun, Knight, & de Guzman, 2005).

Using data from the 1986 Americans' Changing Lives survey, Herzog and Morgan (1993) cast a wide net to examine the direct and indirect effects on later-life volunteering of three sets of exogenous variables—personality traits (e.g., extraversion), social-structural characteristics (e.g., education), and environmental factors (e.g., urbanicity)—and three sets of mediating variables—roles (e.g., work status), social participation (e.g., involvement with formal organizations), and health (e.g., functional health limitations). Herzog and Morgan (1993) found evidence for partial mediation of the effects of extraversion on volunteering by older adults, that is, the effect of extraversion on volunteering was reduced but remained significant. However, Herzog and Morgan (1993) did not compute and test the significance of the indirect effects. Thus, from their study, it is not possible to specify the pathways by which the effect of extraversion on volunteering was partially mediated.

In contrast, in the present study, using structural equation modeling, we focused more narrowly on Wilson's (2000) hypothesis that the effect of extraversion on volunteering by older adults is fully explained by the links between extraversion and social capital on the one hand and between social capital and volunteering on the other hand. Social capital refers to the resources that are derived from relationships with other people and organizations. Smith (1994) concluded from his review of the literature that ties to other people and organizations were important determinants of volunteering. Social resources include informal and formal social ties (Wilson, 2000). Accordingly, we conceptualized variables related to human capital (education, employment status, financial difficulties, and health limitations) and demographic variables (sex, age, and ethnicity) as exogenous variables. Because Herzog and Morgan (1993) found that marital status did not predict volunteering, we also treated it as an exogenous factor.

Furthermore, Herzog and Morgan (1993) measured participation in formal organizations by summing responses to questions regarding the frequency of participation in meetings of formal organizations and church services. Based upon the findings of Okun and Michel (2006) who demonstrated that church attendance and participation in other organizations made independent contributions to predicting volunteering by older adults, in the present study: (a) attendance at meetings of clubs and organizations and (b) church attendance were treated as separate mediating variables.

2. The mediational model

2.1. *Extraversion*

Extraversion has been identified as one of the traits that comprise the Big Five model of the structure of personality traits (John, 1990). Extraverts are very sociable people who also are energetic, optimistic, friendly, and assertive. Introverts tend to be reserved, independent, and even-paced (McCrae & Costa, 1984). Because formal volunteering often requires extensive social interactions, scholars have posited that it is associated with being extraverted (Burke & Hall,

1986). Several studies have observed a significant association between extraversion and volunteering (Bekkers, 2005; Burke & Hall, 1986; Carlo et al., 2005; Herzog & Morgan, 1993), but see Trudeau and Devlin (1996) for an exception.

Because extraversion is viewed as a product of genetics and early childhood experiences, differences in extraversion are likely to precede differences in our mediating variables and in volunteering (Swickert, Hittner, Kitos, & Cox-Fuenzalida, 2004). This mediational model is based upon the premises that: (a) extraversion is significantly related to the mediators as well as to volunteering and (b) the mediators are significantly related to volunteering.

2.2. *Clubs and organizations*

Extraverts join more clubs and associations than introverts. Individuals with multiple organizational ties have numerous opportunities to be informed about, or to be asked directly to participate in, volunteer activities (Smith, 1994). Social capital in the form of ties to organizations has been found to be a consistent predictor of volunteering (Harootyan, 1996; Herzog & Morgan, 1993; Okun & Michel, 2006). Consequently, extraversion may exert an indirect effect on volunteering via participation in clubs and organizations.

2.3. *Church attendance*

There is no reason to believe that extraversion is related to religiosity, but extraversion may be related to how religiosity is expressed. Relative to introverts, extraverts have a friendly, compassionate involved style of social interaction, are outgoing, and seek to keep busy. Although Francis and Bolger (1997) failed to find an association between extraversion and church-related involvement, we reasoned that extraverted older adults may be more likely than introverted older adults to manifest their religiosity by attending church and participating in church-sponsored activities whereas introverted older adults may be more likely than extraverted older adults to manifest their religiosity privately (e.g., by praying at home and watching and listening to religious-based television and radio programs). Involvement in church-related activities, in turn, is a strong predictor of volunteering (Bekkers, 2005; Okun, 1993; Wilson & Musick, 1997, 1999). Two factors contribute to the strong association between involvement in church-related activities and volunteering. First, churches are the leading sponsor of volunteer efforts (Hodgkinson, Weitzman, & Kirsch, 1990). Second, churches promote prosocial values that foster concern for community members (Wuthnow, 1991). Thus, churches provide both the opportunity and the motivation for engaging in volunteer activities. Consequently, church attendance may mediate the effect of extraversion on volunteering.

2.4. *Contact with friends*

Because of their gregariousness and interpersonal warmth, extraverts have larger social networks, greater contact with friends, higher quality friendships, and are more satisfied with their social support than are introverts (Costa, Zonderman, & McCrae, 1985; Finch & Graziano, 2001; Herzog & Morgan, 1993). At the same time, friends are often the medium by which individuals are recruited for volunteer activities (Hodgkinson & Weizman, 1992). Several studies have

shown that contact with friends and other forms of informal social interaction are significantly associated with volunteering (Musick, Herzog, & House, 1999; Wilson & Musick, 1997, 1999), although this association sometimes has been diminished in multivariate models (Herzog & Morgan, 1993; Okun & Michel, 2006). Therefore, contact with friends may mediate the relation between extraversion on volunteering.

Because sex differences have been found in extraversion (Costa, Terracciano, & McCrae, 2001), social ties (Antonucci & Akiyama, 1987), church attendance (Lummis, 2004), and volunteering (Goss, 1999), we also explored whether the effects of extraversion on volunteering via social capital were similar for men and women.

3. Method

3.1. Sample

Data for this study come from the Later Life Study of Social Exchanges (LLSSE), a two-year, five-wave, longitudinal survey of 903 older adults. The study population was defined as non-institutionalized, English-speaking, 65–90 years of age, cognitively functional, and living in the contiguous United States. The basic sampling frame of LLSSE was obtained from the Medicare Beneficiary Eligibility List of the Centers for Medicare and Medicaid Services (CMS; formerly the Health Care Finance Administration). Study participants closely resembled the older (65+) US population based on comparisons with the 2000 census data (Sorkin & Rook, 2004).

Because of missing data, our analyses were based on 888 participants. The median age of the sample was 73 years old, 61% were women; 84% were White, non-Hispanic, 11% were Black, 4% were Latino, 1% were other races/ethnicities or of mixed races/ethnicities.

3.2. Measures

3.2.1. Volunteering

Typically, in studies examining predictors of volunteering in later life, the dependent variable has been measured with a single item (Chambré, 1987; Choi, 2003; Herzog & Morgan, 1993; Okun & Michel, 2006; Wilson & Musick, 1999). In the present study, respondents were asked, “In the past month, how often did you do volunteer work?” The response options were coded on a six-point scale: 0 = “never or almost never,” 1 = “once a month or less,” 2 = “several times a month,” 3 = “about once a week,” 4 = “several times a week,” and 5 = “daily.” Sixty-eight percent of the respondents indicated that they volunteered “never or almost never.” The mean and standard deviation for volunteering were 0.83 and 1.41, respectively.

3.2.2. Clubs and organizations

Respondents were asked, “In the past month, how often did you attend meetings of clubs, or community or professional organizations?” The anchor points for the six response options were “never or almost never” (coded 0) and “daily” (coded 5). The mean and standard deviation for clubs and organizations were 0.91 and 1.30, respectively.

3.2.3. Church attendance

Respondents were asked, “How often do you usually attend religious services?” The anchor points for the six response options were “never or almost never” (coded 0) and “daily” (coded 5). The mean for church attendance was 1.94 (SD = 1.51).

3.2.4. Contact with friends

Respondents were asked, “In the past month, how often did you get together or talk on the phone with friends?” The anchor points for the six response options were “never or almost never” (coded 0) and “daily” (coded 5). The mean for contact with friends was 3.41 (SD = 1.54).

3.2.5. Extraversion

Extraversion was assessed with four items adapted from frequently used measures of this trait. The items assessed gregariousness (“You are outgoing or social,” “You seek out and enjoy the company of others”), interpersonal warmth (“You are affectionate or warm toward others”), and assertiveness (“You have an assertive personality”). Respondents indicated how well each statement described them on a 4-point scale with anchor points from: 0 = “not at all”, through 3 = “very well.” To form an extraversion scale score, the responses to the four items were averaged (coefficient $\alpha = 0.67$). The mean and standard deviation for extraversion scores were 2.18 and 0.60, respectively.

3.2.6. Exogenous variables

Sex was a dichotomous variable with male serving as the reference category. Race was coded into four categories (White, Afro-American, Latino, and “other”) with white serving as the reference category. Age was a continuous variable.

To assess education, respondents selected 1 of 9 ordinal categories ranging from “Less than 8th Grade” (1) to “Completed graduate school or professional training” (9). The median level of educational attainment was “high school graduate.” Respondents were asked, “How difficult is it for you to pay for the very basics, like food, housing, medical care, and heating? Would you say it is not difficult at all, not very difficult, somewhat difficult, or very difficult?” The response options were coded as follows: 0 = “not difficult at all,” 1 = “not very difficult,” 2 = “somewhat difficult,” and 3 = “very difficult.” The mean and standard deviation for this item were 0.79 and 1.00, respectively.

Work status was coded into three categories with not working serving as the reference category. Ninety percent of the respondents were not working, 6% were working part-time work, and 4% were working full-time. Marital status was coded into three categories with married or living as a married couple serving as the reference category. Fifty-four percent of the respondents were married or living as a married couple, 42% were widowed, divorced, or separated, and the remaining 4% were never married.

Health limitations were assessed with 15 questions that included activities of daily living, instrumental activities of daily living, upper extremity strength, and mobility (Nagi, 1976). Participants were asked how difficult it was for them to perform each activity (0 = “not at all difficult”, through 3 = “very difficult”). Ratings on the items on the health limitations scale were averaged (coefficient $\alpha = 0.93$). The mean and standard deviation for health limitations scores were 0.61 and 0.62, respectively.

4. Results

4.1. Correlational analysis among main study variables

Consistent with our conceptual framework, extraversion was significantly ($p < 0.01$) correlated with volunteering ($r = 0.12$) and with the mediators (r s range from 0.11 to 0.30, $p < 0.01$) and the mediators were significantly ($p < 0.001$) correlated with volunteering (r s range from 0.22 to 0.37). The correlations among the mediators ranged from 0.16 to 0.25 ($p < 0.001$).

4.2. Structural equation analysis

We used structural equation modeling to test our hypothesis that the effects of extraversion on volunteering were fully mediated by the social capital variables. Since the mediators were correlated, the correlations among them were specified as free to be estimated. We test a saturated model in which we specified a direct effect of extraversion on volunteering as well as indirect effects via clubs and organizations, church attendance, and contact with friends. As predicted, the direct effect of extraversion on volunteering ($\beta = 0.010$) was not significant, and all remaining paths were significant ($p < 0.05$). As can be seen in Table 1, this model provided an adequate fit to the data, $\chi^2(888, 4) = 5.71$, $p > 0.20$, RMSEA = 0.02.

Next, we trimmed this model by dropping the direct effect of extraversion on volunteering. All paths were significant ($p < 0.05$) and this model accounted for 19% of the variance in volunteering. The fit of this model to the data was very good, $\chi^2(888, 5) = 5.79$, $p > 0.30$, RMSEA = 0.01. Dropping the path representing the direct effect of extraversion on volunteering did not result in a significant degradation in the fit of the data to the model, $\chi^2_{\text{change}}(888, 1) = 0.08$, $p > 0.75$.

4.3. Sensitivity analyses

We carried out two types of sensitivity analyses. First, we examined whether the effects observed in the trimmed model remained intact when we included a set of exogenous variables. Based on the criterion that a control variable had to be correlated 0.10 or higher in absolute value with extraversion, one of the mediators, or volunteering, six of our 12 control variables were included in the model (sex, age, marital status, education, health limitations, and financial difficulties). Allowing the control variables to be correlated, we found that all of the effects observed in our trimmed model remained significant ($p > 0.05$).

Table 1
Model fit and difference test for indirect effect of extraversion on volunteering

Model	χ^2	df	Exact p	χ^2 :df	RMSEA
Direct effect model	5.71	4	0.22	1.43	0.02
Indirect effect model	5.79	5	0.33	1.16	0.01
Difference test	0.08	1	0.77		

Note. Both the direct and indirect effect model do not include covariates.

Second, after confirming that the direct effect of extraversion on volunteering was not significant ($p > 0.05$) for both men and women, we examined whether the effects observed in the trimmed model were equivalent for men and women. When we estimated the trimmed model for males, we found that all paths were significant except for the path from extraversion to clubs and organizations ($\beta = 0.07$, $p > 0.05$). As can be seen in Table 2, when we constrained the estimates of the paths from the males-only model to be equivalent in the females-only model, the fit of the model to the data was not optimal, $\chi^2(888, 11) = 20.46$, $p < 0.05$, RMSEA = 0.04. Next we ran the model for females and found that the path from extraversion to clubs and organizations was significant ($\beta = 0.14$, $p < 0.001$). When we allowed the path from extraversion to clubs and organizations to be free but constrained the estimates of the remaining paths from the males-only model to be equivalent in the females-only model, the test of the fit of the model to the data was not significant, $\chi^2(888, 10) = 15.80$, $p > 0.10$. Allowing the path from extraversion to clubs and organizations to vary for men and women significantly enhanced the fit of the model, $\chi^2_{\text{change}}(888, 1) = 4.66$, $p < 0.05$.

4.4. Estimation of indirect effects

Fig. 1 depicts the trimmed model with standardized estimates from the total sample shown for all paths except for the path from extraversion to clubs and organizations. For this path, we present the standardized estimates separately for females and males. To examine the extent to which the effect of extraversion on volunteering was mediated by clubs and organizations, church attendance, and contact with friends, we computed indirect effects. This was accomplished by multiplying the path from extraversion to the mediator by the path from the mediator to volunteering. The value of the mediated (or indirect) effects were as follows: 0.021 for the path from extraversion to clubs and organizations to volunteering for males, 0.042 for the path from extraversion to clubs and organizations to volunteering for females; 0.034 for the path from extraversion to church attendance to volunteering; and 0.042 for the path from extraversion to contact with friends to volunteering. Using the Sobel procedure (MacKinnon, Warsi, & Dwyer, 1995), the mediated effects were significant for church attendance ($z = 4.12$, $p < 0.001$), contact with friends ($z = 3.46$, $p < 0.001$), and clubs and organizations for females ($z = 3.07$, $p < 0.01$) but not for males ($z = 1.38$, $p > 0.15$). When the mediated effect of clubs and organizations was tested using estimates of both paths derived from the female-only sample, it remained significant ($z = 2.98$, $p < 0.01$). Similarly, when the mediated effect of clubs and organizations was tested using estimates of both paths derived from the male-only sample, it remained non-significant ($z = 1.37$, $p > 0.15$).

Table 2
Equivalence test for male and female path models of the indirect effect of extraversion on volunteering

Model	χ^2	df	Exact p	χ^2 :df	RMSEA
All paths equivalent model	20.46	11	0.04	1.86	0.04
Unconstrained path from extraversion to clubs and organizations model	15.80	10	0.11	1.58	0.03
Difference test	4.66	1	0.03		

Note. Both models do not include covariates.

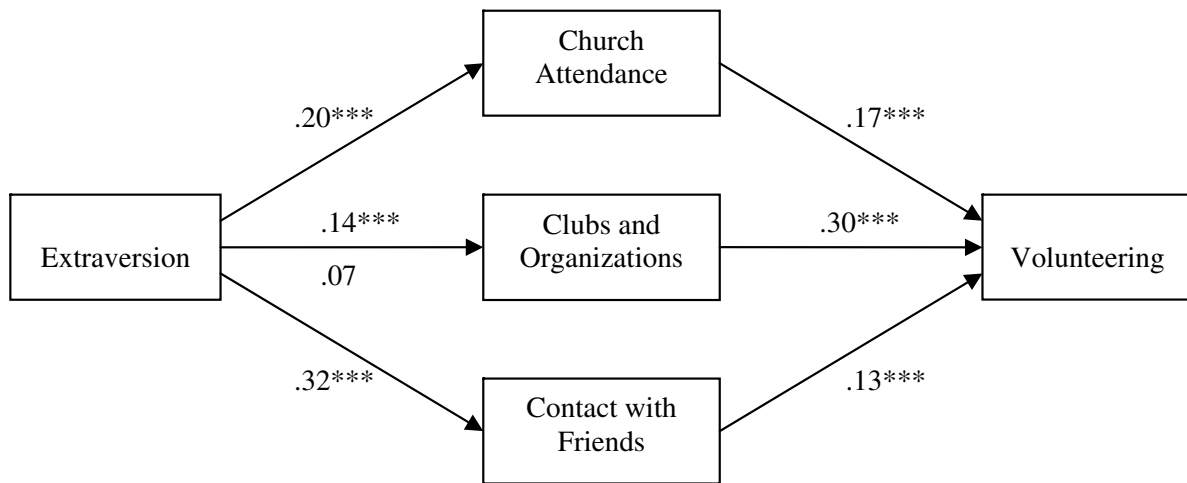


Fig. 1. Summary of the mediational model of the relation between extraversion and volunteering. *Note.* *** $p < 0.001$. With the exception of the path from extraversion to clubs and organizations, all path coefficients are standardized estimates derived from the total sample. For the path from extraversion to clubs and organizations, the path coefficient above the line is the standardized estimate derived from the female participants and the path coefficient below the line is the standardized estimate derived from the male participants.

5. Discussion

The goal of this study was to unpack the relation between extraversion and volunteering in later life by examining the role of social capital. Our path analysis revealed that extraversion exerted a direct effect on contact with friends, church attendance, and clubs and organizations (females only). Unexpectedly, extraversion was not a significant predictor of clubs and organizations among older men. One possibility is that the impetus for involvement in clubs and organizations in later life differs for men and women. Perhaps, older men are more motivated to participate in clubs and organizations by a sense of agency whereas older women are more motivated to participate in clubs and organizations by a sense of communion (Diehl, Owen, & Youngblade, 2004). Consequently, individual differences in extraversion may not exert a significant influence on older men's participation in clubs and organizations because their involvement is fueled by their instrumental orientation. In contrast, extraversion may contribute to older women's participation in clubs and organizations because their involvement is kindled by their interpersonal orientation (Kessler, McLeod, & Wethington, 1985).

All three mediators exerted direct effects on volunteering. As predicted, when the influence of clubs and organizations, church attendance, and contact with friends were statistically controlled, extraversion did not exert a direct effect on volunteering. In contrast to the present study, Herzog and Morgan (1993) found evidence for partial but not full mediation of the relation between extraversion and volunteering by older adults. One possible explanation for the discrepancy is that we distinguished between church attendance and participation in other organizations (see Okun & Michel, 2006). The findings of the present study highlight the utility of employing multivariate mediational models to explicate the mechanisms by which personality traits influence volunteering and the importance of identifying potential mediators based upon their conceptual linkage both to the personality trait and to volunteering (Carlo et al., 2005).

According to our findings, older extraverts volunteer more frequently than older introverts due to their greater contact with friends, participation in church services, and involvement with clubs and organizations (females only). It is possible to suggest that volunteering is confounded with contact with friends, church attendance, and clubs and organizations. However, conceptually, one can have frequent contact with friends but these friends may or may not possess a prosocial orientation. Furthermore, although people who attend church regularly and participate in clubs and organizations may possess humanitarian values, volunteering requires individuals to act on these values. Empirically, Okun and Sloane (2002) demonstrated that the majority of individuals do not follow through on their intention to volunteer. Thus, for both conceptual and empirical reasons, we do not believe that our mediating variables are confounded with our dependent variable.

The present study has several limitations. First, our data analyses were cross-sectional and thus the causal ordering of our variables is not firmly established. Longitudinal designs that examine how personality variables, such as extraversion, shape patterns of social involvement and volunteering over the life course can help to determine the causal order among the variables. Second, we used brief measures of extraversion, the mediating variables, and volunteering. Thus, we may have under-estimated the magnitude of the relations among extraversion, the mediating variables, and volunteering. This limitation can be addressed in future studies by including more comprehensive measures of extraversion (including its various facets), the mediating variables, and volunteering.

Third, in the present study, all of our measures were self-report. Method variance may have inflated our estimates of the relations among extraversion, the mediating variables, and volunteering. This limitation can be overcome in future studies by using a combination of self-report (e.g., the mediators), other-report (e.g., extraversion), and archival data (e.g., frequency of volunteering).

In conclusion, extraverted older adults build up a larger fund of social capital than do introverted older adults via church attendance, contact with friends, and clubs and organizations (females only). We also demonstrated that church attendance, contact with friends, and clubs and organizations influenced volunteering by older adults. Thus, our findings suggest that social capital provides a viable explanation for the association between extraversion and volunteering.

Furthermore, the findings of the present study are consistent with the observation that older volunteers typically are recruited by organizations such as churches and by word-of-mouth from friends (Harootyan, 1996). Appeals to older adults through formal channels such as clubs and organizations and through informal channels such as asking volunteers to recruit friends should include themes related to the interpersonal (e.g., opportunities for social interaction) and the temperamental (e.g., opportunities to stay active) facets of extraversion (Fischer & Schaffer, 1993).

Acknowledgement

This research was supported by a grant from the National Institute on Aging, AG14130.

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