

Linking Autonomy-Supportive Leadership to Volunteer Satisfaction: A Self-Determination Theory Perspective

Jeannette Oostlander · Stefan T. Güntert ·
Theo Wehner

Published online: 4 July 2013

© International Society for Third-Sector Research and The Johns Hopkins University 2013

Abstract This study examines the development of volunteer satisfaction within the framework of self-determination theory (SDT). Therewith, autonomy-supportive leadership—as an influential part of the organizational context—is studied as an antecedent of volunteer satisfaction. The hypothesized model suggests that the link between autonomy-supportive leadership and volunteer satisfaction is serially mediated by general need satisfaction and autonomous motivation. Volunteers ($N = 113$) working closely together with their supervisors completed a paper-based questionnaire. As predicted, both general need satisfaction and autonomous motivation serially mediated the link between autonomy-supportive leadership and volunteer satisfaction. The results indicate that autonomy-supportive leadership is an important factor of the organizational context, increasing both volunteers' autonomous motivation and satisfaction. Practical implications for volunteering organizations, as well as implications for further research, are discussed.

Keywords Self-determination theory · Volunteering · Autonomy-supportive leadership · Satisfaction · Autonomous motivation

Résumé La présente étude examine l'évolution de la satisfaction des bénévoles à l'aune de la théorie de l'auto-détermination (TAD ou SDT, *self-determination theory*). En outre, elle étudie la valorisation de l'autonomie par les supérieurs hiérarchiques, en tant que partie influente du contexte organisationnel, comme élément précurseur de la satisfaction des bénévoles. L'hypothèse modélisée postule que le lien entre la valorisation de l'autonomie par la hiérarchie et la satisfaction des bénévoles repose dans l'ordre sur la satisfaction globale des besoins et sur la motivation autodéterminée. Des bénévoles ($N = 113$) collaborant étroitement avec

J. Oostlander (✉) · S. T. Güntert · T. Wehner
Department of Management, Technology, and Economics, ETH Zurich,
Weinbergstrasse 56/58, 8092 Zurich, Switzerland
e-mail: joostlander@ethz.ch

leur supérieur ont rempli un questionnaire papier. Comme prévu, la satisfaction globale des besoins puis la motivation autodéterminée s'avèrent fonder le lien entre la valorisation de l'autonomie par la hiérarchie et la satisfaction des bénévoles. Les résultats indiquent que la valorisation de l'autonomie par la hiérarchie est un facteur important du contexte organisationnel, qui favorise à la fois la motivation autodéterminée et la satisfaction des bénévoles. Sont alors examinées les conséquences pratiques pour les organisations bénévoles et pour les pistes de recherche à venir.

Zusammenfassung Die vorliegende Studie untersucht die Entstehung der Zufriedenheit ehrenamtlich Tätiger im Rahmen der Selbstbestimmungstheorie. Damit einhergehend wird die autonomie-unterstützende Führung - ein maßgeblicher Teil des organisationalen Kontexts - als eine Bedingung für die Zufriedenheit ehrenamtlich Tätiger erforscht. Das angenommene Modell lässt darauf schließen, dass die Verbindung zwischen autonomie-unterstützender Führung und der Zufriedenheit der ehrenamtlich Tätigen durch die allgemeine Befriedigung von Bedürfnissen und die autonome Motivation seriell mediiert wird. Ehrenamtliche Mitarbeiter ($N = 113$), die eng mit ihren Vorgesetzten zusammenarbeiteten, füllten einen schriftlichen Fragebogen aus. Wie zuvor prognostiziert, stellten sowohl die allgemeine Zufriedenstellung von Bedürfnissen als auch die autonome Motivation die Verbindung zwischen der autonomie-unterstützenden Führung und der Zufriedenheit der ehrenamtlich Tätigen her. Die Ergebnisse besagen, dass die autonomie-unterstützende Führung ein wichtiger Faktor im organisationalen Kontext ist, die sowohl die autonome Motivation als auch die Zufriedenheit der ehrenamtlich Tätigen fördert. Es werden praktische Auswirkungen für Freiwilligenorganisationen sowie Implikationen für zukünftige Forschungen diskutiert.

Resumen El presente estudio examina el desarrollo de la satisfacción del voluntario dentro del marco de la teoría de la autodeterminación (SDT, del inglés self-determination theory). Con ello, se estudia el liderazgo de apoyo a la autonomía - como una parte influyente del contexto organizativo - como un antecedente de la satisfacción del voluntario. El modelo hipotético sugiere que el vínculo entre el liderazgo de apoyo a la autonomía y la satisfacción del voluntario está mediado en serie por la satisfacción de las necesidades generales y la motivación autónoma. Los voluntarios ($N = 113$) que trabajaban estrechamente con sus supervisores completaron un cuestionario en papel. Como se predijo, tanto la satisfacción de las necesidades generales como la motivación autónoma mediaban en serie el vínculo entre el liderazgo de apoyo a la autonomía y la satisfacción del voluntario. Los resultados indican que el liderazgo de apoyo a la autonomía es un factor importante del contexto organizativo, aumentando tanto la motivación autónoma como la satisfacción de los voluntarios. Se tratan las implicaciones prácticas para las organizaciones de voluntariado, así como las implicaciones para futuras investigaciones.

Several million adults are actively involved in volunteering (National and Community Service 2012; Study on Volunteering in the EU, 2010). They dedicate themselves to volunteering in a wide range of activities, such as regularly visiting

elderly and lonely persons, organizing leisure time activities for youths, or helping immigrants. To maintain these important benefits and services for society, it is essential that volunteering organizations gain knowledge on how to motivate and satisfy their volunteers for long-term engagements, particularly as volunteer turnover can be time consuming and costly in terms of volunteer replacement costs (recruitment and training), and decreased ability to serve the public (McElroy et al. 2001; Musick and Wilson 2008).

There may be several antecedents of volunteer motivation and satisfaction, such as personal interests, the volunteering task itself or changing personal circumstances. Furthermore, the organizational context itself could also well play a key role in volunteer motivation and satisfaction, although it has been examined only rarely (Grube and Piliavin 2000; Haivas et al. 2012a; Lo Presti 2012; Millette and Gagné 2008; Studer and von Schnurbein 2013; Wilson 2012) even though volunteering often takes place within an organization (Penner 2002). Studer and von Schnurbein (2013) identified three main conditions of volunteering-organizations that affect volunteer satisfaction: *volunteer management*, *attitudes towards volunteers*, and *organizational values*. Although the attitudes towards volunteers and organizational values are hardly changeable, volunteer management practices are more likely to be changed in the short term. This makes volunteer management (also termed as volunteer coordination) a most interesting and influential starting point for examining the organizational context of volunteer-organizations. At least for those volunteers who regularly interact with a volunteering coordinator, the coordinator can be characterized as the crucial link between the organization and the volunteers and thus represents a very influential contextual factor for volunteers' motivation and satisfaction. In addition, the use of established theoretical frameworks is lacking in the literature on volunteer coordination (Studer and von Schnurbein 2013). Therefore, the aim of this study is to adopt an established theoretical framework for studying volunteer coordination practices in order to take a step towards closing this gap in the research.

For this purpose, the study will rely on self-determination theory (SDT; Deci and Ryan 2000, 2008b)—a meta-theory on human motivation. SDT is a promising theory for studying volunteer coordination as it focuses on the motivational mechanisms underlying human behavior. In addition, in SDT the social environment is considered as a main antecedent of motivation, satisfaction and well-being (Deci and Ryan 2000), making it possible to take a closer look at the impact of volunteer coordination on these most important outcomes. In organizational contexts, SDT further provides that autonomy-support is the most important social-contextual factor affecting satisfaction and well-being (Gagné and Deci 2005). Several studies (Baard et al. 2004; Deci et al. 1989, 2001; Kovjanic et al. 2012; Kuvaas 2008; Mitchell et al. 2012) have confirmed the importance of autonomy-supportive leadership in predicting positive work outcomes (e.g., job satisfaction). For example, Deci et al. (1989) trained managers to be autonomy-supportive and found this training to result in higher levels of trust, enhanced positive affect, and increased job satisfaction among paid employees. According to its definition, *autonomy-supportive leadership* refers to organizational conditions in which people with authority encourage someone for personal initiative, offer

opportunities for choice, take others' perspectives into account, provide optimal challenges, support people's competences, and facilitate social interactions (Deci et al. 2001; Gagné 2003; Haivas et al. 2012a).

To conclude, autonomy-supportive leadership provides an organizational context in which volunteers are supposed to act autonomously and self-determined. Thereby, autonomy-supportive leadership has a clear link to volunteering (Allen and Shaw 2009), as volunteers particularly value working autonomously and in a self-determined manner (Leonard et al. 2004; Nichols 2012; Vantilborgh et al. 2012), making SDT a suitable and promising theoretical framework for studying volunteer coordination (Allen and Shaw 2009).

Self-Determination Theory

SDT (Deci and Ryan 2000, 2008b) is a widely accepted theoretical framework on human motivation. The key element of the theory is that “humans are inherently motivated to grow and achieve and will fully commit to and even engage in uninteresting tasks when their meaning and value is understood” (Stone et al. 2009, p. 77). Central to the understanding of motivation within SDT is the distinction between different forms of behavioral regulations ranging on a continuum from intrinsic motivation to amotivation (Gagné and Deci 2005). Intrinsic motivation represents behavior that is fully based on self-determination. Therefore, intrinsically motivated volunteers engage in an activity because they find it interesting and enjoyable. In contrast, amotivation is full lack of self-determination. Along this continuum between intrinsic motivation and amotivation, four different types of extrinsic motivation are arranged, varying in degrees of self-determination: external regulation, introjected regulation, identified regulation and integrated regulation (progressing in the degree of self-determination and internalization). External regulation represents the prototype of controlled motivation. When externally regulated, people act based on a feeling of external pressure or to avoid undesired consequences. The other types of extrinsic motivation result when a behavioural regulation and its associated value have been internalized. Internalization can be described as an active process in which individuals transform external requests or external values into self-regulation or into personally acceptable values (Deci and Ryan 2000). Thus, volunteers who are identified regulated, for example, internalized the value of a specific volunteering activity and act based on the identification with this value (Deci and Ryan 2000). The following example further illustrates the process of internalization: at the beginning of his engagement a volunteer did some administrative tasks basically because the organization told him to (external pressure and controlled form of extrinsic motivation). Through his ongoing engagement, the volunteer became acquainted to organizational processes and the value of administrative tasks for the organization. Within this process, the volunteer internalized a formerly external request into a personally acceptable value. He does not enjoy doing administrative tasks but at least recognizes its value.

SDT combines the well internalized behavioral regulations of *intrinsic motivation*, *integrated* and *identified regulation* into autonomous motivation. Autonomous

motivation is experienced as emerging from one's self with a full sense of volition and choice and leads to the positive feelings of willingness and engagement (Stone et al. 2009), as well as to the experience of satisfaction and well-being (Deci and Ryan 2000). Previous studies on the link between autonomous motivation and positive work outcomes of volunteers have illustrated the positive effects of autonomous motivation: Autonomously motivated volunteers showed higher work effort (Bidee et al. 2013) and higher prosocial intention (Grant 2008). Therefore, it seems highly desirable for organizations to provide organizational conditions that increase the autonomous motivation of their volunteers. Consequently, volunteering organizations should strive for autonomously motivated volunteers who volunteer because they are interested in their tasks, have fun or volunteer because of a task's underlying personal value (e.g., they value helping people in need).

As opposed to autonomous motivation, SDT combines the less- or not-internalized forms of regulation (external regulation and introjected regulation) into controlled motivation (Deci and Ryan 2008a). Controlled motivation involves feeling a sense of external pressure and of having to engage in an activity or to avoid punishment or feelings of guilt (Deci and Ryan 2000). Controlled motivation, and the feeling of being obliged by external contingencies, is supposed to negatively affect volunteering (Gagné 2003). As the levels of controlled motivation were reported to be quite low for volunteers (cf. Bidee et al. 2013; Haivas et al. 2012a) Millette and Gagné (2008) recommended focusing on intrinsic motivation and well-internalized forms of extrinsic motivation (i.e., autonomous motivation). Therefore, the aim of the present study is to focus on autonomous motivation and its highly desirable outcomes.

Furthermore, SDT assumes that the satisfaction of basic psychological needs is required as nutriment for the preservation of intrinsic motivation and for the process of full internalization of extrinsic motivation. Therefore, the basic psychological needs are specified as “innate psychological nutriments that are essential for ongoing psychological growth, integrity, and well-being” (Deci and Ryan 2000, p. 229). SDT differentiates between three innate basic psychological needs: the needs for *autonomy*, *competence*, and *relatedness*. First, the need for autonomy refers to the desire to feel a sense of psychological freedom and freedom of choice during an activity. Second, the need for competence refers to the desire to be able to handle an optimally challenging task successfully, and to attain an expected outcome. Finally, the need for relatedness refers to the desire to feel connected to others and to develop and maintain relationships with other individuals (Baard et al. 2004; Deci and Ryan 2000). In previous research (cf. Baard et al. 2004; Gagné et al. 2003), the three needs for autonomy, competence, and relatedness have been repeatedly combined into a single overall construct, representing an index for *general need satisfaction*.

Autonomy-supportive leadership, in turn, is considered as one of the most important antecedents of individuals' psychological need satisfaction (Gagné and Deci 2005). Autonomy-supportive leadership and psychological need satisfaction both fuel the process of internalization. Gagné and Deci (2005) summarized several studies conducted in the paid-work context and found that, in general, an autonomy-supportive interpersonal environment enhanced autonomous motivation, and, in

turn, positive job outcomes. Therefore, the quality of the interaction with significant others, such as an autonomy-supportive work climate between supervisors or volunteer coordinators and volunteers, is supposed to affect the degree to which a volunteer feels autonomous, competent and related (Gagné 2003) and thus autonomously motivated.

To conclude, SDT proposes a link between autonomy-supportive leadership and positive outcomes (e.g., satisfaction and well-being) with consideration for the underlying motivational mechanisms (Gagné and Deci 2005). Thus, SDT maintains that volunteer satisfaction has roots in autonomy-supportive leadership that positively influences psychological need satisfaction, which, in turn, has a positive impact on autonomous motivation and finally on satisfaction and well-being. The sequential arrangement of these constructs, in general, has been confirmed in large field and experimental studies (cf. Deci and Ryan 2000; Gagné and Deci 2005). However, only a limited number of studies have relied on SDT and its concept of *autonomy-supportive leadership* in the context of volunteering (Gagné 2003; Haivas et al. 2012a; Oostlander et al. 2013). Consequently, the influences of an autonomy-supportive leadership style on volunteer satisfaction has not yet been examined thoroughly within SDT, as the knowledge gleaned from studies focusing on the paid-work context may not be directly transferable to the volunteering context (Boezeman and Ellemers 2007, 2008; Galindo-Kuhn and Guzley 2001). Thus, the first contribution of this study is to examine the influence of autonomy-supportive leadership as a particular volunteer coordination practice on volunteer satisfaction. In line with SDT, it is hypothesized that general need satisfaction and autonomous motivation will serially mediate the relationship between autonomy-supportive leadership and volunteer satisfaction (see Fig. 1).

A second contribution of this study lies within the differentiated examination of the three basic needs as consequences of autonomy-supportive leadership. Most research on SDT has studied psychological need satisfaction through aggregating the three psychological needs to a single index for general need satisfaction, even though information may be lost (Haivas et al. 2012a, b). As a consequence, the influence of autonomy-supportive leadership on each of the three basic needs and therefore on autonomous motivation or satisfaction has often not been tested. Two previous studies in the volunteering context used differentiated psychological needs to examine their mediating impact between autonomy-supportive leadership and

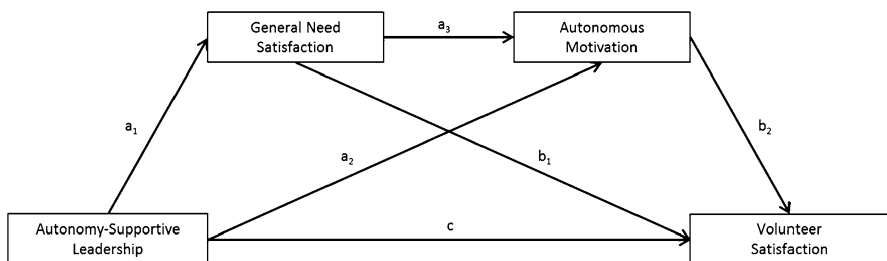


Fig. 1 First hypothesized mediation model: general need satisfaction and autonomous motivation serially mediate the link between autonomy-supportive leadership and volunteer satisfaction

autonomous motivation or volunteer satisfaction. Surprisingly, the results of both studies are contradictory and diverge concerning the assumptions of SDT, which imply that all three psychological needs are essential in order to experience satisfaction and well-being (Deci and Ryan 2000). First, the findings of Haivas et al. (2012a) revealed that the three basic needs were more likely to be satisfied under autonomy-supportive leadership, whereas only need satisfaction for autonomy and competence had an increasingly positive impact on autonomous motivation. Second, Boezeman and Ellemers (2009) found that need satisfaction for autonomy and relatedness, but not need satisfaction for competence, predicted volunteers' satisfaction. The unexpected results of Boezeman and Ellemers (2009) were justified with the conclusion that need satisfaction for competence might be less relevant for volunteer satisfaction, because volunteering activities often do not require specific skills or competences (Farmer and Fedor 1999, 2001). In contrast, need satisfaction for autonomy and relatedness would be more relevant in the volunteering context, as volunteers expect to act autonomously (Leonard et al. 2004; Nichols 2012; Vantilborgh et al. 2012), and social relationships have emerged as important factors that enhance volunteers' intent-to-remain within a volunteering organization (Boezeman and Ellemers 2007; Galindo-Kuhn and Guzley 2001). This last result is, in turn, contradictory to the results of Haivas, Hofmans and Pepermans (2012a) who found that need satisfaction for relatedness did not increase autonomous motivation.

In conclusion, the results concerning the influence of the three psychological needs on autonomous motivation or satisfaction are contradictory and therefore inconclusive to some extent. Thus, the second contribution of the present study is to help clarify the motivational mechanism underlying the link between autonomy-supportive leadership and volunteer satisfaction in the field of volunteers' psychological need satisfaction. Therefore, a second mediation analysis was conducted to examine the unique mediating contributions of the three needs on the relationship between autonomy-supportive leadership and volunteer satisfaction. It is hypothesized that autonomy-supportive leadership will similarly increase need satisfaction for autonomy, competence and relatedness, which, in turn, will have a positive influence on volunteer satisfaction.

Method

Procedure

In order to gain a highly internally valid measure for autonomy-supportive leadership, it is essential to collect a sample of volunteers acting within a clearly ascertainable supervisor–volunteer relationship. Therefore, for the research purposes of this study, a sample of volunteers that worked closely and regularly with a supervisor or volunteering coordinator was pursued. Consequently, a certain limitation of external validity occurred because in many cases volunteering coordination can be described as less clearly structured compared to paid-work organizations (Leonard et al. 2004; Nichols 2012), and rather sparse in contact

between volunteering coordinators and volunteers (Farmer and Fedor 1999). As the focus of this study lies in a general examination of autonomy-supportive leadership as potential volunteer coordination practice, a slight constraint of external validity had to be accepted.

Finally, the study was conducted within a volunteering project organized by a large Swiss volunteering organization that offers options for elderly persons to volunteer in nursery-, primary-, and middle-school classes. This particular volunteering project is widely spread throughout several European countries and across the United States (Michael 1990). Volunteers and teachers (the volunteers' supervisors) are brought together by the organization. In general, the volunteer and the teacher/supervisor meet regularly, as the volunteers spend about four lessons per week in class. In the best case scenario, they stay together as a "team" for several school years. In particular, the teacher/supervisor assigns different tasks to the volunteer and is therefore able to directly create a more or less autonomy-supportive work climate. In class, the volunteers tell stories, work with children on individual tasks, or attend school excursions. The ultimate aim of this volunteering-project is to foster inter-generational understanding (child–teacher–senior). Therefore, specialized educational knowledge is explicitly not required.

A questionnaire with postage-paid envelope was sent to the volunteers via the volunteer organization. An official letter from the volunteer organization was included to inform volunteers about the study and to motivate their participation.

Participants

In total, 118 out of 154 volunteers responded to the survey, resulting in a high response-rate of 77 %. Five participants were excluded because of incomplete data. The final sample consisted of $N = 113$ volunteers. Overall, 73 % of the volunteers were women, and the average age was 68.18 years. On average, the volunteers worked together with the present teacher/supervisor for $M = 2.70$ years ($SD = 2.35$ years) and attended $M = 3.19$ lessons per week in class ($SD = 1.30$).

Measures

The questionnaire contained the scales of the four main concepts of this study: autonomy-supportive leadership, psychological need satisfaction, autonomous motivation, and volunteer satisfaction. In addition, demographic variables concerning age, gender, number of years working together with the teacher, and number of lessons attended per week were included.

Autonomy-Supportive Leadership

To measure autonomy-supportive leadership, the short version of the Work Climate Questionnaire (WCQ; Baard et al. 2004) was used. The scale was originally designed to measure managers' autonomy support in paid-work settings. In order to adapt it to the specific volunteering context, the term "manager" was replaced by "teacher", as proposed by Baard et al. (2004). Two item examples are: "The teacher

encourages me to ask questions” or “The teacher tries to understand how I see things before suggesting a new way to do things”. Participants responded to the six items on a scale from 1 (*not at all true*) to 5 (*definitely true*). The internal consistency of the scale was good ($\alpha = .85$).

Psychological Need Satisfaction

Psychological need satisfaction was measured using the nine-item short version of the Basic Need Satisfaction at Work Scale (Deci et al. 2001). The scale was initially designed to measure paid employees’ perceptions of the experienced need satisfaction for autonomy, competence and relatedness, each with three items (Ilardi et al. 1993), and these items were adapted to the respective volunteering context. Sample items are: “I am free to express my ideas and opinions on the task I take” (autonomy), “I feel very competent when I am doing my tasks” (competence), “The children are pretty friendly towards me” (relatedness). Respondents indicated on a scale from 1 (*not at all true*) to 5 (*definitely true*) how their needs for autonomy ($\alpha = .82$), competence ($\alpha = .72$), and relatedness ($\alpha = .59$) were satisfied. Unfortunately, the internal consistency of the scale measuring need satisfaction for relatedness lies below expectations (Nunnally and Bernstein 2004). To test the first proposed mediation model, the three subscales were aggregated to form an index of general need satisfaction ($\alpha = .82$).

Autonomous Motivation

Autonomous motivation was measured using the revised Motivation at Work Scale (MAWS-R; Gagné et al. 2010). This scale was developed to measure the work motivation of paid employees and was therefore adapted slightly in order to fit to the volunteering context. The questionnaire contained six items for autonomous motivation (three each for intrinsic motivation and identified regulation). An item example for intrinsic motivation is: “I show effort because I enjoy this work very much”. An item example for identified regulation is: “I show effort because this volunteering task has a personal meaning for me”. Participants responded to the items on a scale from 1 (*not at all true*) to 5 (*definitely true*). The reliability of autonomous motivation was acceptable with $\alpha = .70$.

Volunteer Satisfaction

The volunteers’ satisfaction was measured with five items that were adapted from Clary et al. (1998) and Boezeman and Ellemers (2009). Two item examples are: “I am satisfied with the tasks that are assigned to me” or “For me, it is a pleasure to take part in this volunteering project”. The participants indicated how satisfied they were on a scale from 1 (*not at all true*) to 5 (*definitely true*). The five items were averaged to form an index for volunteer satisfaction ($\alpha = .73$).

Data Analyses

Both hypothesized mediation models were analyzed using the approach of Preacher and Hayes (2004). As recommended by Zhao et al. (2010), the approach of Preacher and Hayes is preferred to that of Baron and Kenny (1986) because of two main reasons: First, it tests the strength of the mediation by the size of the indirect effect, not by the lack of the direct effect (Zhao et al. 2010); and second, it uses bootstrapping (i.e., assigning measures of accuracy to sample estimates; Efron and Tibshirani 1994) instead of the p value based Sobel test. In the present study, bootstrapping was performed with $k = 20,000$ resamples and 95 % percentile confidence intervals (CI), thereby exceeding the suggested 5,000 samples (Preacher and Hayes 2008). The mediation analyses were conducted using the SPSS macro “PROCESS” (Hayes 2012).

Results

Descriptive statistics, bivariate correlations, and reliability coefficients for all variables used in this study are presented in Table 1.

In the first mediation model, it was predicted that the link between autonomy-supportive leadership and volunteer satisfaction would be serially mediated by general need satisfaction and autonomous motivation. The results were consistent with this assumption. An autonomy-supportive leadership style led to higher general need satisfaction ($\beta = .73, p < .001$), which, in turn, increased autonomous motivation ($\beta = .27, p < .05$) and thus positively predicted volunteer satisfaction ($\beta = .37, p < .001$). The entire mediation model accounted for 42 % of variance of volunteer satisfaction. The total effect of autonomy-supportive leadership on volunteer satisfaction ($\beta = .46, p < .001$) was substantially reduced ($\beta = .27, p = .004$) through controlling for both mediators, but remained significant. As can be seen in Fig. 2 and Table 2, the indirect effect of both mediators was different from zero ($\beta = .07, 95 \% \text{ CI } [.01, .19]$), indicating that general need satisfaction and autonomous motivation served as serial mediators in the model. Therefore, the assumed mediation model was supported. Further examinations showed that neither general need satisfaction ($\beta = .07, 95 \% \text{ CI } [-.12, .22]$) nor autonomous motivation ($\beta = -.01, 95 \% \text{ CI } [-.12, .08]$) served as single mediators in the relationship between autonomy-supportive leadership and volunteer satisfaction (see Table 2). This result was not contradictory to the assumed mediation model, as general need satisfaction and autonomous motivation have been tested as serial mediators, which seems to be the more appropriate model in comparison with testing general need satisfaction and autonomous motivation as single mediators.

As information might be lost through aggregating the three psychological needs to a single index for general need satisfaction (Haivas et al. 2012a, b), a second mediational model was conducted to examine the unique mediating contributions of the three needs on the relationship between autonomy-supportive leadership and volunteer satisfaction (see Fig. 3). Autonomy-supportive leadership was significantly related to need satisfaction for autonomy ($\beta = .61, p < .001$), need satisfaction for

Table 1 Means, standard deviations, Cronbach's Alpha (α), and inter-correlations of study variables

Variables	M	SD	α	1	2	3	4	5	6
1. Autonomy-supportive leadership	4.10	0.67	.85	–					
2. Need satisfaction: autonomy	3.81	0.87	.82	.61***	–				
3. Need satisfaction: competence	4.28	0.62	.72	.60***	.46***	–			
4. Need satisfaction: relatedness	4.85	0.29	.59	.56***	.36***	.53***	–		
5. General need satisfaction ^a	4.32	0.48	.82	.73***	.85***	.81***	.66***	–	
6. Autonomous motivation	4.54	0.44	.70	.18	.04	.35***	.33***	.25**	–
7. Volunteer satisfaction	4.74	0.36	.73	.52***	.30**	.44***	.53***	.47***	.47***

^a General need satisfaction was calculated as the average of the three needs for autonomy, competence and relatedness

* $p < .05$, ** $p < .01$, *** $p < .001$

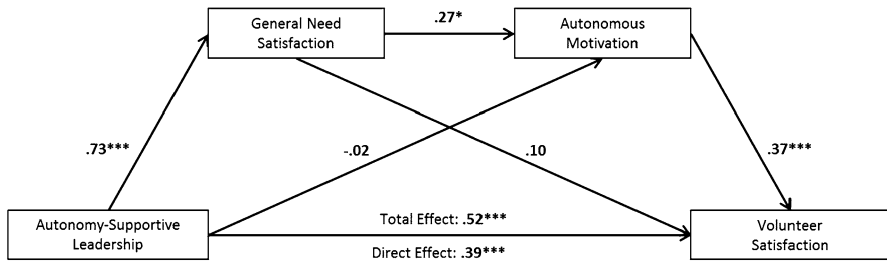


Fig. 2 First mediation model: general need satisfaction and autonomous motivation serially mediate the link between autonomy-supportive leadership and volunteer satisfaction. Path coefficients are standardized. $*p < .05$, $**p < .01$, $***p < .001$

competence ($\beta = .60$, $p < .001$), and need satisfaction for relatedness ($\beta = .56$, $p < .001$). However, neither need satisfaction for autonomy ($\beta = -.06$, $p = .52$) nor need satisfaction for competence ($\beta = .10$, $p = .31$) were related to volunteer satisfaction. Solely, need satisfaction for relatedness provided a significant influence on volunteer satisfaction ($\beta = .33$, $p = .01$). Hence, the link between autonomy-supportive leadership and satisfaction was merely mediated by need satisfaction for relatedness ($\beta = .18$, 95 % CI [.04, .37]).

Discussion

Autonomy-supportive leadership, as a volunteer coordination practice, was examined as a predictor of volunteer satisfaction. Against the background of SDT, autonomy-supportive leadership was hypothesized as a contextual antecedent that satisfies basic psychological needs and, in turn, fosters volunteers' autonomous motivation and satisfaction. As a first contribution, it was hypothesized that the link between autonomy-supportive leadership and volunteer satisfaction would be serially mediated by general need satisfaction and autonomous motivation. The results confirmed this assumption, thus supporting the hypothesized mediation model. Therewith, the present study revealed that an autonomy-supportive leadership style has a positive effect on volunteer satisfaction, which can be explained—at least partially—through enhanced general need satisfaction and increased autonomous motivation. That is, autonomy-supportive leadership facilitates the satisfaction of the three psychological needs for autonomy, competence and relatedness. The satisfaction of these needs, in turn, increases volunteers' autonomous motivation. Autonomously motivated volunteers, however, reported higher volunteer satisfaction. Apart from this indirect effect via general need satisfaction and autonomous motivation, the direct effect between autonomy-supportive leadership on volunteer satisfaction also remained significant. Consequently, it may be more feasible that autonomy-supportive leadership plays a dual role—influencing volunteer satisfaction directly as well as indirectly. The significant direct effect might be explained through

Table 2 Mediation models linking autonomy-supportive leadership and volunteer satisfaction

Mediation models	β	Bootstrap 95 % CI	
		LL	UL
First mediation model (serial mediation)			
Total effect	0.52***		
Direct effect	0.39***		
Indirect effect (via mediators)			
General need satisfaction	.07	-.12	.22
Autonomous motivation	-.01	-.12	.08
General need satisfaction <i>and</i> autonomous motivation	.07	.01	.19
Model R^2	.42***		
Effect ratio ^a	.26		
Second mediation model (separated need satisfaction)			
Total effect	0.52***		
Direct effect	0.32**		
Indirect effects (via mediators)			
Need satisfaction: autonomy	-.04	-.16	.08
Need satisfaction: competence	.06	-.06	.22
Need satisfaction: relatedness	.18	.04	.37
Model R^2	.37***		
Effect ratio ^a	.40		

CI Bias corrected bootstrap confidence interval, based on $k = 20,000$ bootstrap samples, LL lower limit, UL upper limit. β = standardized regression coefficients

^a The *effect ratio* corresponds to the ratio of the indirect effect to the total effect; and is loosely interpreted as the proportion of the total effect that is mediated (Preacher and Kelley 2011)

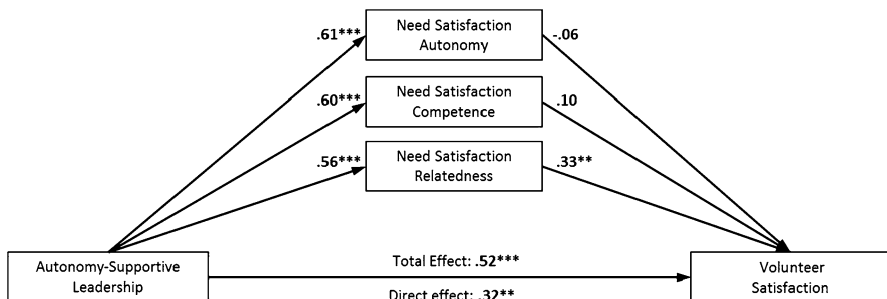


Fig. 3 Second mediation model: the three basic needs for autonomy, competence, and relatedness mediate the link between autonomy-supportive leadership and volunteer satisfaction. Path coefficients are standardized. * $p < .05$, ** $p < .01$, *** $p < .001$

the fact that an autonomy-supportive volunteer coordinator could leave the impression of a nice, sympathetic supervisor that shows interest in their volunteers and thus directly influences volunteers' satisfaction.

From a practical point of view, the results of this study indicate that it is worthwhile for volunteering organizations to try to establish an autonomy-supportive work climate in order to increase or sustain volunteer satisfaction at a high level.

A second contribution of the present paper dealt with a deepening analysis of psychological need satisfaction as mediator, using the three needs as separated subscales. Although the three needs for autonomy, competence and relatedness are often aggregated to an overall index of psychological need satisfaction, recent studies have shown that it may be advisable to use the three needs as separate subscales (Haivas et al. 2012a, b; Sheldon and Hilpert 2012). In this study, the small sample size posed a major constraint to include the three psychological needs constructs as separated subscales into the first mediation model, calculating structural equation modeling. Instead, a second mediation analysis was conducted in order to investigate the mediating role of each need separately. Surprisingly, in the present sample, only need satisfaction for relatedness accounted for an increase in volunteer satisfaction and mediated the relationship between autonomy-supportive leadership and volunteer satisfaction. Neither need satisfaction for autonomy nor need satisfaction for competence led to an increase in volunteer satisfaction, which is not in line with the assumptions of SDT (Deci and Ryan 2000).

However, the results of this study did partially replicate the findings of Boezeman and Ellemers (2009) who argued that the need satisfaction for autonomy and relatedness are more relevant among volunteers—compared to the need satisfaction of competence—as specific competences are often not needed in the volunteering context (Farmer and Fedor 1999, 2001). Even though this study seems to replicate the findings of Boezeman and Ellemers (2009) that need satisfaction for competence might be less relevant for volunteer satisfaction, generalizing this result might be premature—as at least three possible alternative explanations may exist:

First, it might be appropriate to argue that the importance of the three psychological needs—as a source of volunteer satisfaction—may depend on the volunteering task itself. For example, the conclusion of Boezeman and Ellemers (2009) that competences are less important in the volunteering context, might not apply to volunteering activities that require specific competences and include detailed instructions and trainings (e.g., crisis helplines with psychological trainings and supervision). The quite specific volunteering task in this study could be seen as an additional example for this assumption. Due to the fact that no specific educational or pedagogical competences are required to volunteer in the school classes, the expectations concerning the use of competences may be low. At the same time, the lack of pedagogical knowledge may also influence the significance of need satisfaction for autonomy as a source of volunteer satisfaction. The autonomy to choose how to work with the children may not affect volunteers' satisfaction because they trust the way the teachers suggest doing a specific task. Relatedness, on the other hand, is of vital importance to the volunteers, as they work closely together with the teacher (their supervisor) and the children. Thus, a poor relationship between the volunteer, the teacher, and the children would doubtlessly reduce volunteers' satisfaction. Support for this latter conclusion on relatedness is the study of Greguras and Diefendorff (2009). These authors linked the person–

environment fit—a match between the characteristics of individuals and their work environment—with the satisfaction of basic psychological need satisfaction. A high person–environment fit has been found to positively influence behaviors and attitudes while employed (Tziner 1987), as well as to decrease intentions to quit and exit the organization (O’Reilly et al. 1991). Given that psychological need satisfaction is required as nutriment for the preservation of intrinsic motivation and for the process of internalization of extrinsic motivation, a person–environment fit is supposed to be an additional antecedent of psychological need satisfaction. With regard to different kinds of person–environment fits, Greguras and Diefendorff (2009) also focused on the Person–Group fit, defined as “the perceived value congruence between an employee and his coworkers” (p. 468). A high Person–Group fit has been found to solely increase need satisfaction for relatedness as the compatibility among coworkers is likely to increase interaction, communication (Adkins et al. 1996), and the development of bonds (Jackson et al. 1991). By transferring these results to the volunteering context and the present sample, respectively, it is entirely conceivable that a high Person–Group fit plays a particularly important role due to the fact that a good relationship between the volunteer, the teacher, and the children is essential. Given this finding, it seems plausible that psychological need satisfaction for relatedness may play a crucial role as antecedent of volunteer satisfaction in the present sample.

Second, Haivas et al. (2012b) raised the question, whether the relationship between need satisfaction and motivation is similar for everyone. In particular, they revealed that individual differences alter the way the three basic needs are related to motivation. In line with their research, it could be suggested that the different explanatory power of the three psychological needs might also depend on the predominant disposition of the volunteers within the sample of the different studies. However, Haivas et al. (2012b) suggested further research in order to gain a more thorough picture of individual differences in predicting motivation.

Third, and finally, it may also be worth drawing attention to the differentiation between “need satisfaction” and “need thwarting” within this discussion. The fact that need satisfaction for competence does not explain variance of volunteer satisfaction does not mean that thwarting the need for competence (i.e., feeling incompetent) would bear no consequences. For example, in this study, need satisfaction for competence does not predict volunteer satisfaction, perhaps because volunteers do not expect to need any specific competences in their volunteering activity. However, it may be assumed that if the volunteers were to feel incompetent, their satisfaction would be negatively affected. This point is also addressed by Sheldon and Hilpert (2012) who suggested that the absence of negatively worded items (e.g., “I feel incompetent”) in the Basic Need Satisfaction scale might cause trouble. Recent research on psychological needs found that positive (i.e., need satisfaction) and negative need satisfaction (i.e., need thwarting) may have differential effects on outcome variables.

Thus, these results suggest that the three psychological needs have diverse effects on outcome variables and the study should be replicated with the newly developed scale—the Balanced Measure of Psychological Needs scale (BMPN; Sheldon & Hilpert, 2012) – before generalizing the results.

Limitations and Further Research

Inevitably, this study was also subject to limitations. First, the main limitation lies within the use of cross-sectional data to test a serial multiple mediation model. As mediational models assume causal relationships between variables, the use of cross-sectional data for their examination is usually inappropriate. However, strong theoretical considerations, as well as findings from large experimental laboratory studies (cf. Deci and Ryan 2000; Gagné and Deci 2005) and field studies with longitudinal data (Williams and Deci 1996), suggest that autonomy-supportive leadership facilitates psychological need satisfaction, which, in turn, enables autonomous motivation and satisfaction. Therefore, the sequential arrangement of the constructs can be assumed as determined.

Second, this study was conducted within a sample of volunteers that work closely together with their volunteer supervisor (i.e., the teacher). Thus, the teacher could easily create an autonomy-supportive work climate. However, in other volunteering contexts there may be greater distance between the volunteers and their supervisors. As a consequence, the impact of autonomy-supportive leadership may be lower within other volunteering samples. Therefore, it must be taken into account that the results of this study are only transferable to other volunteering samples with at least an occasional contact between volunteers and supervisor.

Third, the internal consistency of the scale measuring need satisfaction for relatedness lies below expectations (Nunnally and Bernstein 2004). However, the low internal consistency is coherent with recent findings providing that the need satisfaction scale used in this study contains problematic items (Sheldon and Hilpert 2012). In particular, two of the relatedness items (“I get along with people” and “People are pretty friendly towards me”) seem to more aptly measure some sort of pleasant social reunion instead of a deeper sense of affiliation or connection. To reduce this concern, further studies should utilize the newly balanced and revised BMPN (Sheldon and Hilpert 2012). In addition, the BMPN might also reduce the high correlation between autonomy-supportive leadership and psychological need satisfaction, which may indicate that both concepts are related in their operationalization to some extent.

A fourth and final limitation relates to the negative skewness of volunteer satisfaction and autonomous motivation. The skewness of satisfaction is merely based on the difficulty to reach unsatisfied volunteers, as they are free to leave the organization in case of dissatisfaction (Leonard et al. 2004). The skewness of autonomous motivation also lies within the nature of volunteering. Autonomous motivation is often present, as there are only a few external reasons for volunteering, because payment or contractual obligations are missing (Pearce 1993). To avoid biased results due to skewed data, bootstrapping was performed to test for indirect effects (Preacher and Hayes 2004). Bootstrapping has been suggested as a convenient way to circumvent problems of lacking power and non-normality in the sampling distribution of the indirect effect (Bollen and Stine 1990; Shrout and Bolger 2002).

Conclusion and Practical Implications

This study provides support for an SDT model of volunteer satisfaction. The results show that autonomy-supportive leadership is an important predictor of volunteer satisfaction. In particular, the results of this study are of practical interest for volunteering organizations that deal with satisfaction and tenure of their volunteers. Based on the findings of this study, it is recommended that volunteer organizations try to create an autonomy-supportive work climate to enhance volunteer satisfaction. In practical terms, the present study indicates that volunteer coordinators are able to influence the satisfaction of their volunteers through creating a social structure that supports the need satisfaction of volunteers and thus enhances their satisfaction. Autonomy-supportive leadership can be created through providing volunteers individual choice, acknowledging volunteer perspectives, offering space to allow personal decisions, creating challenging tasks, by providing constructive feedback, and through conveying a feeling of competence and relatedness (Deci and Ryan 2000; Gagné 2003; Haivas et al. 2012a). According to Stone et al. (2009), clarifying responsibilities and contributions is also central for providing autonomous motivation and satisfaction. Giving volunteers a rational for uninteresting tasks (e.g., administrative tasks) and acknowledging the volunteers' feelings of dislike is also part of the acknowledgement of volunteer perspectives and prevents the impeding of autonomous motivation and volunteer satisfaction. Thus, reducing volunteer coordination to administrative and coordinative matters (i.e., creating time schedules for volunteers) would not meet the requirement of volunteers. Instead, the management of volunteers would strongly benefit from personal and social interactions between volunteer coordinators and volunteers.

References

- Adkins, C. L., Ravlin, E. C., & Meglino, B. M. (1996). Value congruence between co-workers and its relationship to work outcomes. *Group and Organization Management*, 21(4), 439–460. doi: [10.1177/1059601196214005](https://doi.org/10.1177/1059601196214005).
- Allen, J., & Shaw, S. (2009). “Everyone rolls up their sleeves and mucks in”: Exploring volunteers' motivation and experiences of the motivational climate of a sporting event. *Sport Management Review*, 12(2), 79–90. doi: [10.1016/j.smr.2008.12.002](https://doi.org/10.1016/j.smr.2008.12.002).
- Baard, P. P., Deci, E. L., & Ryan, R. M. (2004). Intrinsic need satisfaction: A motivational basis of performance and well-being in two work settings. *Journal of Applied Social Psychology*, 34(10), 2045–2068. doi: [10.1111/j.1559-1816.2004.tb02690.x](https://doi.org/10.1111/j.1559-1816.2004.tb02690.x).
- Baron, R., & Kenny, D. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182. doi: [10.1037/0022-3514.51.6.1173](https://doi.org/10.1037/0022-3514.51.6.1173).
- Bidee, J., Vantilborgh, T., Pepermans, R., Huybrechts, G., Willems, J., Jegers, M., et al. (2013). Autonomous motivation stimulates volunteers' work effort: A self-determination theory approach to volunteerism. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, 24(1), 32–47. doi: [10.1007/s11266-012-9269-x](https://doi.org/10.1007/s11266-012-9269-x).
- Boezeman, E. J., & Ellemers, N. (2007). Volunteering for charity: Pride, respect, and the commitment of volunteers. *Journal of Applied Psychology*, 92(3), 771–785. doi: [10.1037/0021-9010.92.3.771](https://doi.org/10.1037/0021-9010.92.3.771).
- Boezeman, E. J., & Ellemers, N. (2008). Pride and respect in volunteers' organizational commitment. *European Journal of Social Psychology*, 38(1), 159–172. doi: [10.1002/ejsp.415](https://doi.org/10.1002/ejsp.415).

- Boezeman, E. J., & Ellemers, N. (2009). Intrinsic need satisfaction and the job attitudes of volunteers versus employees working in a charitable volunteer organization. *Journal of Occupational and Organizational Psychology*, 82(4), 897–914. doi:[10.1348/096317908X383742](https://doi.org/10.1348/096317908X383742).
- Bollen, K., & Stine, R. (1990). Direct and indirect effects: Classical and bootstrap estimates of variability. *Sociological Methodology*, 20(1), 15–140.
- Clary, E. G., Snyder, M., Ridge, R. D., Copeland, J., Stukas, A. A., Haugen, J., et al. (1998). Understanding and assessing the motivations of volunteers: A functional approach. *Journal of Personality and Social Psychology*, 74(6), 1516–1530. doi:[10.1037/0022-3514.74.6.1516](https://doi.org/10.1037/0022-3514.74.6.1516).
- Deci, E. L., Connell, J., & Ryan, R. M. (1989). Self-determination in a work organization. *Journal of Applied Psychology*, 74(4), 580–590. doi:[10.1037/0021-9010.74.4.580](https://doi.org/10.1037/0021-9010.74.4.580).
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268. doi:[10.1207/S15327965PLI1104_01](https://doi.org/10.1207/S15327965PLI1104_01).
- Deci, E. L., & Ryan, R. M. (2008a). Facilitating optimal motivation and psychological well-being across life’s domains. *Canadian Psychology*, 49(1), 14–23. doi:[10.1037/0708-5591.49.1.14](https://doi.org/10.1037/0708-5591.49.1.14).
- Deci, E. L., & Ryan, R. M. (2008b). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology*, 49(3), 182–185. doi:[10.1037/a0012801](https://doi.org/10.1037/a0012801).
- Deci, E. L., Ryan, R. M., Gagné, M., Leone, D. R., Usunov, J., & Kornazheva, B. P. (2001). Need satisfaction, motivation, and well-being in the work organizations of a former Eastern bloc country: A cross-cultural study of self-determination. *Personality and Social Psychology Bulletin*, 27(8), 930–942. doi:[10.1177/0146167201278002](https://doi.org/10.1177/0146167201278002).
- Efron, B., & Tibshirani, R. (1994). *An introduction to the bootstrap*. New York: Chapman & Hall.
- Farmer, S. M., & Fedor, D. B. (1999). Volunteer participation and withdrawal. *Nonprofit Management and Leadership*, 9(4), 349–368. doi:[10.1002/nml.9402](https://doi.org/10.1002/nml.9402).
- Farmer, S. M., & Fedor, D. B. (2001). Changing the focus on volunteering: An investigation of volunteers’ multiple contributions to a charitable organization. *Journal of Management*, 27(2), 191–211. doi:[10.1177/014920630102700204](https://doi.org/10.1177/014920630102700204).
- Gagné, M. (2003). The role of autonomy support and autonomy orientation in prosocial behavior engagement. *Motivation and Emotion*, 27(3), 199–223. doi:[10.1023/A:1025007614869](https://doi.org/10.1023/A:1025007614869).
- Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, 26(4), 331–362. doi:[10.1002/job.322](https://doi.org/10.1002/job.322).
- Gagné, M., Forest, J., Gilbert, M. H., Aubé, C., Morin, E., & Malorni, A. (2010). The motivation at work scale: Validation evidence in two languages. *Educational and Psychological Measurement*, 70(4), 628–646. doi:[10.1177/0013164409355698](https://doi.org/10.1177/0013164409355698).
- Gagné, M., Ryan, R. M., & Bargmann, K. (2003). Autonomy support and need satisfaction in the motivation and well-being of Gymnasts. *Journal of Applied Sport Psychology*, 15(4), 372–390. doi:[10.1080/714044203](https://doi.org/10.1080/714044203).
- Galindo-Kuhn, R., & Guzley, R. M. (2001). The volunteer satisfaction index: Construct definition, measurement, development, and validation. *Journal of Social Service Research*, 28(1), 45–68. doi:[10.1300/J079v28n01_03](https://doi.org/10.1300/J079v28n01_03).
- Grant, A. (2008). Does intrinsic motivation fuel the prosocial fire? Motivational synergy in predicting persistence, performance, and productivity. *Journal of Applied Psychology*, 93(1), 48–58. doi:[10.1037/0021-9010.93.1.48](https://doi.org/10.1037/0021-9010.93.1.48).
- Greguras, G., & Diefendorff, J. (2009). Different fits satisfy different needs: Linking person–environment fit to employee commitment and performance using self-determination theory. *Journal of Applied Psychology*, 94(2), 465–477. doi:[10.1037/a0014068](https://doi.org/10.1037/a0014068).
- Grube, J. A., & Piliavin, J. A. (2000). Role identity, organizational experiences, and volunteer performance. *Personality and Social Psychology Bulletin*, 26(9), 1108–1119. doi:[10.1177/01461672002611007](https://doi.org/10.1177/01461672002611007).
- Haivas, S., Hofmans, J., & Pepermans, R. (2012a). Self-determination theory as a framework for exploring the impact of the organizational context on volunteer motivation: A study of Romanian volunteers. *Nonprofit and Voluntary Sector Quarterly*, 41(6), 1195–1214. doi:[10.1177/0899764011433041](https://doi.org/10.1177/0899764011433041).
- Haivas, S., Hofmans, J., & Pepermans, R. (2012b). “What motivates you doesn’t motivate me”: Individual differences in the needs satisfaction–motivation relationship of Romanian volunteers. *Applied Psychology: An International Review*. Advance online publication. doi:[10.1111/j.1464-0597.2012.00525.x](https://doi.org/10.1111/j.1464-0597.2012.00525.x).

- Hayes, A. F. (2012). PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modelling [White paper]. Retrieved from <http://www.afhayes.com/public/process2012.pdf>.
- Illardi, B., Leone, D., Kasser, T., & Ryan, R. M. (1993). Employee and supervisor ratings of motivation: Main effects and discrepancies associated with job satisfaction and adjustment in a factory setting. *Journal of Applied Social Psychology, 23*(21), 1789–1805. doi:10.1111/j.1559-1816.1993.tb01066.x.
- Jackson, S. E., Brett, J. F., Sessa, V. I., Cooper, D. M., Julin, J. A., & Peyronnin, K. (1991). Some differences make a difference: Individual dissimilarity and group heterogeneity as correlates of recruitment, promotions, and turnover. *Journal of Applied Psychology, 76*(5), 675–689.
- Kovjanic, S., Schuh, S., Jonas, K., Quaquebeke, N., & Dick, R. (2012). How do transformational leaders foster positive employee outcomes? A self-determination-based analysis of employees' needs as mediating links. *Journal of Organizational Behavior, 33*(8), 1031–1052. doi:10.1002/job.1771.
- Kuvaas, B. (2008). A test of hypotheses derived from self-determination theory among public sector employees. *Employee Relations, 31*(1), 39–56. doi:10.1108/01425450910916814.
- Leonard, R., Onyx, J., & Hayward-Brown, H. (2004). Volunteer and coordinator perspectives on managing women volunteers. *Nonprofit Management and Leadership, 15*(2), 205–219. doi:10.1002/nml.62.
- Lo Presti, A. (2012). The interactive effects of job resources and motivations to volunteer among a sample of Italian volunteers. *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, pp. 1–17. doi:10.1007/s11266-012-9288-7.
- McElroy, J., Morrow, P., & Rude, S. (2001). Turnover and organizational performance: A comparative analysis of the effects of voluntary, involuntary, and reduction-in-force turnover. *Journal of Applied Psychology, 86*(6), 1294–1299. doi:10.1037/0021-9010.86.6.1294.
- Michael, B. (1990). *Volunteers in public schools*. Washington, DC: National Academies Press.
- Millette, V., & Gagné, M. (2008). Designing volunteers' tasks to maximize motivation, satisfaction and performance: The impact of job characteristics on volunteer engagement. *Motivation and Emotion, 32*(1), 11–22. doi:10.1007/s11031-007-9079-4.
- Mitchell, J., Gagné, M., Beaudry, A., & Dyer, L. (2012). The role of perceived organizational support, distributive justice and motivation in reactions to new information technology. *Computers in Human Behavior, 28*(2), 729–738. doi:10.1016/j.chb.2011.11.021.
- Musick, M., & Wilson, J. (2008). *Volunteers: A social profile*. Bloomington: Indiana University Press.
- National and Community Service (2012, December). *Volunteering and Civic Life in America 2012. Key findings on the volunteer participation and civic health of the nation*. Report from the Corporation for National Community Service. Retrieved from <http://www.volunteeringinamerica.gov/assets/resources/FactSheetFinal.pdf>.
- Nichols, G. (2012). The Psychological Contract of Volunteers: A New Research Agenda. *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, pp. 1–20. doi:10.1007/s11266-012-9294-9.
- Nunnally, J., & Bernstein, I. (2004). *Psychometric theory*. New York: McGraw-Hill.
- Oostlander, J., Güntert, S. T., van Schie, S., & Wehner, T. (2013). Leadership and volunteer motivation: A study using self-determination theory. *Nonprofit and Voluntary Sector Quarterly*, pp. 1–21. doi:10.1177/0899764013485158.
- O'Reilly, C. A., Chatman, J., & Caldwell, D. F. (1991). People and organizational culture: A profile comparison approach to assessing person-organization fit. *Academy of Management Journal, 34*(3), 487–516. doi:10.2307/256404.
- Pearce, J. L. (1993). *Volunteers: The organizational behavior of unpaid workers*. London/New York: Routledge.
- Penner, L. A. (2002). Dispositional and organizational influences on sustained volunteerism: An interactionist perspective. *Journal of Social Issues, 58*(3), 447–467. doi:10.1111/1540-4560.00270.
- Preacher, K., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, 36*(4), 717–731. doi:10.3758/BF03206553.
- Preacher, K., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879–891. doi:10.3758/BRM.40.3.879.
- Preacher, K., & Kelley, K. (2011). Effect size measures for mediation models: Quantitative strategies for communicating indirect effects. *Psychological Methods, 16*(2), 93–115. doi:10.1037/a0022658.

- Sheldon, K., & Hilpert, J. (2012). The Balanced Measure of Psychological Needs (BMPN) scale: An alternative domain general measure of need satisfaction. *Motivation and Emotion*, 36(4), 439–451. doi:[10.1007/s11031-012-9279-4](https://doi.org/10.1007/s11031-012-9279-4).
- Shrout, P., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods*, 7(4), 422–445. doi:[10.1037/1082-989X.7.4.422](https://doi.org/10.1037/1082-989X.7.4.422).
- Stone, D., Deci, E. L., & Ryan, R. M. (2009). Beyond talk: Creating autonomous motivation through self-determination theory. *Journal of General Management*, 34(3), 75–85.
- Studer, S., & von Schnurbein, G. (2013). Organizational factors affecting volunteers: A literature review on volunteer coordination. *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, 24(2), 403–440.
- Study on Volunteering in the European Union. (2010). *Final Report of ICF GHK*. Retrieved from http://ec.europa.eu/citizenship/pdf/doc1018_en.pdf.
- Tziner, A. (1987). Congruency issue retested using Fineman's achievement climate notion. *Journal of Social Behavior and Personality*, 21(1), 63–78.
- Vantilborgh, T., Bidee, J., Pepermans, R., Willems, J., Huybrechts, G., & Jegers, M. (2012). Volunteers' psychological contracts: Extending traditional views. *Nonprofit and Voluntary Sector Quarterly*, 41(6), 1072–1091. doi:[10.1177/0899764011427598](https://doi.org/10.1177/0899764011427598).
- Williams, G., & Deci, E. L. (1996). Internalization of biopsychosocial values by medical students: A test of self-determination theory. *Journal of Personality and Social Psychology*, 70(4), 767–779. doi:[10.1037/0022-3514.70.4.767](https://doi.org/10.1037/0022-3514.70.4.767).
- Wilson, J. (2012). Volunteerism research: A review essay. *Nonprofit and Voluntary Sector Quarterly*, 41(2), 176–212. doi:[10.1177/0899764011434558](https://doi.org/10.1177/0899764011434558).
- Zhao, X., Lynch, J., Jr, & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, 37(2), 197–206. doi:[10.1086/651257](https://doi.org/10.1086/651257).