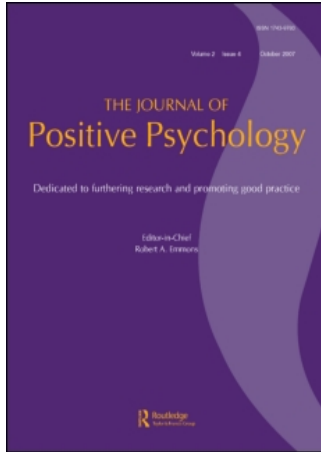


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Designing jobs to do good: Dimensions and psychological consequences of prosocial job characteristics

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Although employees are increasingly interested in jobs that enable them to do good, we know relatively little about how jobs are structured to provide these opportunities. To fill this gap, I report three studies that examine the dimensions and psychological consequences of two prosocial job characteristics that enable employees to make a positive difference in the lives of other people. In Study 1, confirmatory factor analyses demonstrated strong psychometric properties of self-report measures of job opportunities for impact on and contact with beneficiaries. In Study 2 I examine the mechanisms through which prosocial job characteristics are linked to a stronger motivation to do good among public service and telephone solicitation employees. In Study 3, multitrait-multimethod matrices using observer ratings of job descriptions supported the convergent and discriminant validity of the prosocial job characteristics. I discuss implications for theory and research in positive psychology and positive organizational scholarship, job design, and prosocial behavior.

Keywords: work design; prosocial motivation; relational job characteristics

Introduction

More than ever before, employees want to do good. In a recent study, Colby, Sippola, and Phelps (2001) found that more than half of a nationally representative sample of Americans described benefiting others as what makes their work meaningful. Across a wide range of cultures, many employees hold strong prosocial values; they care about protecting and promoting the welfare of other people (Meglino & Korsgaard, 2004; Schwartz & Bardi, 2001). To fulfill these prosocial values, employees are seeking employment in organizations that provide opportunities to do good (Thompson & Bunderson, 2003; Turban & Greening, 1997). Employees are seeking jobs that allow them to make a social contribution (Ruiz-Quintanilla & England, 1996), help others (Bagozzi & Edwards, 1998), make a difference (Grant, 2007), serve the public (Perry, 2000), benefit future generations (McAdams & de St. Aubin, 1992), and make the world a better place (Wrzesniewski, McCauley, Rozin, & Schwartz, 1997).

Psychologists and organizational scholars have begun to recognize this growing emphasis on doing good. To capture it, they have taken an individual differences approach, studying the extent to which different employees care about doing good. The result is a litany of constructs that capture individual differences in the motivation to do good. The altruistic personality, the prosocial personality, agreeableness,

helpfulness, interpersonal concern, empathy, other-oriented values, and prosocial values are just a few of the many individual differences that have been studied (Penner, Dovidio, Piliavin, & Schroeder, 2005). Positive psychologists have contributed to these efforts by examining individual differences in strengths of humanity, which encapsulate love, kindness, and social intelligence, as well as strengths of justice, which encapsulate citizenship, fairness, and leadership (Dahlsgaard, Peterson, & Seligman, 2005).

However, the motivation to do good is not merely shaped by individual differences. Contextual forces and situational cues have a powerful influence on the motivation to do good (e.g., Batson, 1990; Nelson & Norton, 2005). Although existing research has provided a wealth of insight into the extent to which different individuals are motivated to good, it tells us little about how *work contexts* can be designed to fulfill and strengthen these motives. Accordingly, we need a deeper theoretical and empirical understanding of how work contexts can fulfill and strengthen the motivation to do good. Such an understanding is particularly important in light of recent evidence that the motivation to do good can promote important behaviors that benefit other people and the organization such as task commitment, effort, persistence, and helping behavior (Grant, 2007, in press a, in press b), and that the experience of doing good can benefit the self by

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promoting increased satisfaction and decreased depression (Lyubomirsky, Sheldon, & Schkade, 2005), heightened feelings of value and competence (Penner et al., 2005), and improved health and longevity (Brown, Nesse, Vinokur, & Smith, 2003).

In this article, I propose that job design is an important vehicle for understanding how work contexts can enable employees to do good. Jobs vary dramatically in their prosocial characteristics, i.e., the degree to which they provide opportunities for employees to do good. Some jobs, such as nursing and firefighting, enable employees to do good in important, lasting ways on a regular basis for a wide range of people, and other jobs, such as restaurant cashier and bank teller, typically lack these opportunities. Although researchers have long recognized that these variations exist (Hackman & Oldham, 1980), they have taken few conceptual and empirical steps to develop and elaborate these prosocial characteristics of jobs (Grant, 2007).

To provide an enriched theoretical and empirical understanding of the dimensions and psychological consequences of prosocial job characteristics, I conducted three studies. In Study 1, I assess the dimensions of prosocial job characteristics, examining the psychometric properties of a self-report scale. In Study 2, I assess whether and how prosocial job characteristics are associated with the motivation to do good. In Study 3, I triangulate job incumbent self-reports with independent observer ratings of job descriptions to assess construct validity with multitrait-multimethod matrices. The studies contribute to theory and research in positive psychology and positive organizational scholarship by providing a framework for understanding how jobs can fulfill and strengthen employees' motivations to do good. The studies advance job design theory and research by answering recent calls to shift conceptual and empirical attention toward the social context of work, and by providing an initial empirical test of Grant's (2007) model of the psychological mechanisms through which prosocial job characteristics affect employees.

Designing jobs to do good

Job design is among the most important topics in organizational research. In over three decades of research, we have learned that jobs can be understood in terms of task characteristics such as autonomy, variety, identity, and feedback (e.g., Fried & Ferris, 1987; Hackman & Oldham, 1980); knowledge characteristics, such as complexity, information processing, problem solving, skill variety, and specialization (e.g., Parker & Wall, 1998); and physical characteristics, such as ergonomics, physical demands, work conditions, and equipment use (e.g., Campion & McClelland, 1993). Researchers have documented the

psychological, physiological, and behavioral effects of job design, along with the mediating mechanisms that explain these effects and the individual and contextual conditions that moderate them (for recent reviews, see Morgeson & Campion, 2003; Parker & Wall, 1998). Ambrose and Kulik (1999, p. 262) summarized the current state of the job design literature: 'After twenty years of research, a clear picture of the psychological and behavioral effects of job design has emerged.' In line with Ambrose and Kulik's assertions, job design research has begun to wane, with many researchers concluding that the key theoretical and practical questions about job design have been answered.

Scholars have recently challenged this conclusion by asserting that we know little about the social context of job design (Grant, 2007; Morgeson & Campion, 2003). Early job design models included social job characteristics such as opportunities for social interaction and dealing with others (Hackman & Lawler, 1971; Pasmore, Francis, Haldeman, & Shani, 1982; Turner & Lawrence, 1965). However, little research has expanded on these models to systematically examine the social characteristics of jobs. As organizations shift from manufacturing to service economies, jobs are increasingly designed to require interaction with other people (Parker & Wall, 1998) and collaboration in teams (Osterman, 2000). Observing that these dramatic changes in practice have made jobs increasingly social, scholars have begun to revitalize research on social job characteristics. Researchers have developed measures to assess the social job characteristics of social support, interdependence, interpersonal interaction, and feedback from others (Morgeson & Humphrey, 2006), and demonstrated that these characteristics have important implications for subjective performance, turnover intentions, job satisfaction, organizational commitment, and role perceptions (Humphrey, Nahrgang, & Morgeson, 2007).

Prosocial job characteristics

The prior research describes how jobs vary in opportunities for employees to receive support and feedback, and interact with others and work interdependently. However, jobs are not only designed with *social* characteristics that enable employees to *interact with* other people; they are also designed with *prosocial* characteristics that enable employees to *benefit* other people. To stimulate research on prosocial job characteristics, Grant (2007) introduced a conceptual framework specifying how jobs can influence employees' opportunities to do good. Grant proposed that two core prosocial job characteristics enable employees to care about doing good for beneficiaries: the people whose lives can be positively affected by the work that

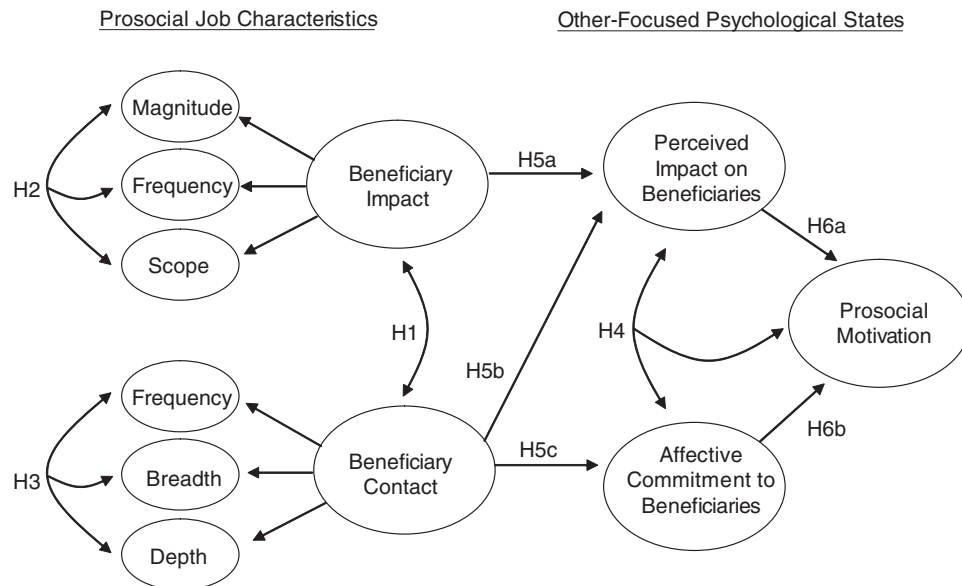


Figure 1. Conceptual model based on Grant (2007).

employees carry out (Blau & Scott, 1962; Thompson & Bunderson, 2003). First, jobs can provide opportunities for employees to have a positive impact on beneficiaries, to offer products and services that make a positive difference in the lives of the clients, customers, patients, students, and users who are affected by the work. Second, jobs can provide opportunities for employees to have contact with beneficiaries, to interact with clients, customers, patients, students, and users in order to build relationships, obtain feedback, and serve them effectively.

Initial evidence suggests that when jobs are designed to provide opportunities for impact on and contact with beneficiaries, employees are able to recognize that their jobs can allow them to do good, and display greater motivation and performance as a result. For example, several field experiments have focused on fundraising callers soliciting alumni donations to a university (Grant, Campbell, Chen, Cottone, Lapedis, & Lee, 2007; Grant, in press a). The callers were doing jobs with high impact on beneficiaries: their fundraising efforts provided scholarships that enabled underprivileged students to attend the university. However, the callers did not have contact with beneficiaries: they had no opportunity to meet these scholarship students whose lives were changed by their work. Researchers intervened to allow the callers to meet one scholarship student who benefited from their work. One month later, the callers had more than doubled in the number of calls that they made, the amount of time they spent on the phone, and the amount of donation money they raised. Callers in control groups did not change on these measures (Grant et al., 2007; Grant, in press a). These results

illustrate the potential for prosocial job characteristics to influence important behavioral outcomes in organizations.

However, we lack a strong theoretical and empirical understanding of the dimensions of jobs that motivate employees to care about doing good, as well as the psychological mechanisms through which these dimensions produce these effects (Grant, 2007). My objective in this paper is to examine the dimensions of prosocial job characteristics and the psychological mechanisms through which they increase employees' motivations to do good. In the following section I develop my hypotheses, which are displayed visually in Figure 1. I first present hypotheses about the relationships between the prosocial job characteristics and then turn to hypotheses about the consequences of these characteristics.

Hypotheses 1–3: Relationships between prosocial job characteristics

My first set of hypotheses pertains to the relationship between the two prosocial job characteristics. Building on prior research on task significance (Hackman & Oldham, 1980), job impact on beneficiaries is defined as the degree to which the job provides opportunities to make a positive difference in the lives of beneficiaries. Building on research on service relationships (Gutek, Bhappu, Liao-Troth, & Cherry, 1999), job contact with beneficiaries is defined as the degree to which the job provides opportunities to meet, communicate, and interact with beneficiaries.

I predict that opportunities for impact on beneficiaries and contact with beneficiaries represent

empirically discrete job characteristics. I base this hypothesis on a distinction offered by organizational researchers between job outcomes (which refer to the results, effects, or consequences of performing a job, or why it is performed) and job processes, which refer to the routines and strategies for performing a job, or how it is performed (e.g., Audia, Kristof-Brown, Brown, & Locke, 1996). Impact describes an outcome of a job, in terms of effects on beneficiaries' lives, whereas contact with beneficiaries describes a process of performing a job, in terms of interacting and communicating with beneficiaries. This prediction is supported by evidence from a multidimensional scaling study in which people identified opportunities for impact on others as representing a different dimension of jobs than opportunities for interacting with and providing a service to others (Stone & Gueutal, 1985). These findings suggest that opportunities for impact on and contact with beneficiaries can be conceptualized in a 2×2 matrix. Some jobs typically provide extensive opportunities for both impact on and contact with beneficiaries (physician, social worker), some jobs typically provide few opportunities for both (textbook proofreader, automotive painter, textile operator), some jobs typically provide opportunities for considerable impact on, but little contact with, beneficiaries (chemical engineer, architect, power station operator), and some jobs typically provide opportunities for little impact on, but substantial contact with, beneficiaries (restaurant server, cashier, bank teller). This suggests the following hypothesis.

Hypothesis 1. Opportunities for impact on beneficiaries and contact with beneficiaries represent empirically distinct prosocial job characteristics.

To gain deeper understanding of the nature of these two prosocial job characteristics, it is important to examine their dimensions. Grant (2007) proposed that opportunities for impact on and contact with beneficiaries vary along at least three dimensions. Opportunities for impact on beneficiaries vary in terms of magnitude, frequency, and scope. Impact magnitude is the degree and duration of the potential positive effects on beneficiaries, impact frequency is how often the job provides opportunities to affect beneficiaries positively, and impact scope is the number or range of people potentially affected by the job. Opportunities for contact with beneficiaries vary in terms of frequency, breadth, and depth. Contact frequency is how often the job provides opportunities to interact with beneficiaries, contact breadth is the degree to which the job provides opportunities to interact with a variety of different beneficiaries, and contact depth is the degree to which the job provides opportunities for meaningful interactions with beneficiaries. Below, I examine how these dimensions can vary within each of the two prosocial job characteristics.

Dimensions of impact on beneficiaries

I predict that jobs can vary relatively independently in the magnitude, frequency, and scope of opportunities for impact that they provide. Support for this proposition appears in research on helping behavior, which shows that individuals' decisions are influenced significantly by how much impact their actions will have on beneficiaries and how many beneficiaries will be affected (Burnstein, Crandall, & Kitayama, 1994), as well as how often these opportunities are provided (Tarasuk & Eakin, 2003); this suggests that employees may be sensitive to magnitude, frequency, and scope as distinct dimensions of impact on beneficiaries. Moreover, organizational scholars have observed that different organizations and occupations have different goals directed at serving different categories and ranges of beneficiaries at different levels and frequencies (e.g., Blau & Scott, 1962; Thompson & Bunderson, 2003), which may create independent variance in opportunities for impact along each dimension. Accordingly, I predict that the three impact dimensions are empirically distinct.

Hypothesis 2. Magnitude, frequency, and scope are empirically distinct dimensions of job opportunities for impact on beneficiaries.

Dimensions of contact with beneficiaries

I also predict that jobs can vary relatively independently in the frequency, breadth, and depth of opportunities for contact with beneficiaries that they provide. Support for this proposition appears in the literatures on social networks and service work, which reveal that interpersonal relationships differ relatively independently across job categories in terms of the frequency, breadth, and depth of interactions according to organizational and occupational goals (e.g., Brass, Galaskiewicz, Greve, & Tsai, 2004; Shah, 1998). Frequent contact with beneficiaries appears to be most common in service jobs that require regular interactions with clients, such as retail, bank, and sales positions (Gutek et al., 1999). Broad contact with beneficiaries appears to be most common in jobs that require novel information, such as product development and technology management positions, or are directed at having an impact on the general public, such as paramedic positions. Deep contact appears to be most common in service jobs that rely on emotional connections, such as physician and counselor positions (Gutek et al., 1999). Thus, I predict that the three dimensions of contact with beneficiaries are empirically distinct.

Hypothesis 3. Frequency, breadth, and depth are empirically distinct dimensions of job opportunities for contact with beneficiaries.

Hypotheses 4–7: Psychological consequences of prosocial job characteristics

Whereas the preceding hypotheses focused on the internal validity of the measures, it is also important to address their external validity. How do prosocial job characteristics affect employees psychologically? The following hypotheses develop the propositions that the prosocial job characteristics are associated with other-focused psychological states.

Other-focused psychological states

Grant (2007) introduced three other-focused psychological states that employees are proposed to experience as a result of performing jobs structured to provide opportunities for impact on, and contact with, beneficiaries.¹ Perceived impact on beneficiaries is the degree to which employees experience their actions as positively affecting other people, affective commitment to beneficiaries is the degree of employees' emotional attachments to these people, and prosocial motivation is the desire to have a positive impact on these people. Perceived impact describes the employee's awareness of positively affecting beneficiaries, affective commitment describes the employee's dedication to beneficiaries, and prosocial motivation describes the employee's desire to have a positive impact on beneficiaries. Thus, perceived impact is an expectancy about the outcome of impact, affective commitment is an attitude toward the recipients of the impact, and prosocial motivation is a desire to act to have an impact. Indeed, researchers studying expectancy theory (Vroom, 1964) and the theory of planned behavior (Armitage & Conner, 2001) have empirically differentiated expectancies, attitudes, and desires. For example, Perugini and Bagozzi (2001) found that expectancies (perceived impact) and attitudes (affective commitment) make independent contributions to desires (prosocial motivation). Given these conceptual distinctions and empirical findings, I predict that these three other-focused psychological states are empirically distinct.

Hypothesis 4. Perceived impact on beneficiaries, affective commitment to beneficiaries, and prosocial motivation are empirically distinct.

Prosocial job characteristics and other-focused psychological states

Based on the propositions offered by Grant (2007), the next three hypotheses are concerned with the associations between the prosocial job characteristics and perceived impact and affective commitment. First, although it is often assumed that job opportunities translate into perceptions of personal actions achieving these opportunities (Hackman & Oldham, 1980), it is

important to empirically examine whether this relation holds. There are situations in which a job provides opportunities for impact that are not realized (for example, a doctor fails to save a patient's life or an attorney fails to defend a client's innocence). That said, I predict that job opportunities for impact are associated with stronger perceptions of personal actions as having impact. The logic for this prediction is based on the social psychological literature on helping behavior (Smith, Keating, & Stotland, 1989), which reveals that employees are more likely to become aware of the positive impact of their actions on other people when they face opportunities to have a significant impact on these people.

Second, I predict that opportunities for contact with beneficiaries are associated with stronger perceptions of impact. The logic for this prediction is based on evidence that contact with beneficiaries provides employees with feedback about the effects of their actions on these beneficiaries (Grant et al., 2007). Third, I predict that opportunities for contact with beneficiaries are also associated with stronger affective commitments to these beneficiaries. The logic for this prediction draws on organizational research on perspective-taking, which demonstrates that when suppliers have contact with customers, they are better able to take customers' perspectives, and can thereby identify and empathize with customers (Parker & Axtell, 2001). These arguments give rise to the following hypotheses.

Hypothesis 5a. The greater the opportunities for impact on beneficiaries, the stronger the employee's perception of impact on beneficiaries.

Hypothesis 5b. The greater the opportunities for contact with beneficiaries, the stronger the employee's perception of impact on beneficiaries.

Hypothesis 5c. The greater the opportunities for contact with beneficiaries, the stronger the employee's affective commitment to beneficiaries.

Based on the propositions presented by Grant (2007), the following two hypotheses predict that perceived impact and affective commitment are associated with higher levels of prosocial motivation.² Employees are more likely to be motivated to make a prosocial difference when they perceive impact on beneficiaries, as they experience a behavior-outcome contingency linking their actions to the result of making a difference in others' lives (Vroom, 1964). Behavior-outcome expectancies motivate employees to pursue goals and prepare to act, whereas a lack of behavior-outcome expectancies tends to give rise to learned helplessness. Employees are also more likely to be motivated to make a prosocial difference when they are affectively committed to beneficiaries, as they place more value on the outcome of making a difference (Grant, 2007). Affective commitment to beneficiaries promotes a sense of identification and emotional closeness that motivates employees to care about

improving the welfare of beneficiaries (Batson, 1990). These bodies of evidence give rise to the following hypotheses.

Hypothesis 6a. The greater the perceived impact on beneficiaries, the stronger the prosocial motivation.

Hypothesis 6b. The greater the affective commitment to beneficiaries, the stronger the prosocial motivation.

Study 1: Scale development

In order to study prosocial job characteristics and gather empirical evidence about their consequences, we need psychometrically sound measurement instruments. In this study, I begin to develop and validate such an instrument, the Prosocial Job Characteristics Scale (PJCS), a self-report measure of the extent to which jobs provide opportunities to do good. I test hypotheses 1–3 by examining the relations between the prosocial job characteristics.

Method

Item development

I developed the scale items based on three criteria (e.g., Converse & Presser, 1986; DeVellis, 1991; Taber & Taylor, 1990): (1) items were positively worded, (2) items were single-barreled, and (3) items used lay terminology to describe each dimension. As guides for item wording, I consulted existing measures of job characteristics (Hackman & Oldham, 1980) and social contribution perceptions (McAdams & de St. Aubin, 1992). To capture lay terminology, I conducted intensive interviews with employees in five different service occupations: firefighters, dentists, hairstylists, fitness trainers, and financial planners. I asked them to talk about how their jobs made a difference and what type of interaction their jobs provided with the people who benefited from their work. I used their language to develop 10 items for each construct and sorted the statements into theoretical categories (Schriesheim, Powers, Scandura, Gardiner, & Lankau, 1993). I then utilized factor analysis to identify the three strongest items for each construct. The items for each prosocial job characteristic are displayed in Table 1. All items used a 7-point Likert-type scale anchored at 1 = disagree strongly, 2 = disagree, 3 = disagree slightly, 4 = neutral, 5 = agree slightly, 6 = agree, and 7 = agree strongly.

Participants

To increase variance in the job characteristics, it was useful to sample multiple jobs (e.g., Morgeson & Humphrey, 2006). To target a broad range of jobs, I used a snowball sampling procedure, which is

commonly utilized by organizational researchers to increase sample variety. A team of research assistants began by generating a list of 100 individuals in a variety of industries and job families, and asked these individuals to complete a brief online survey and forward it to others in their networks. Respondents were 108 adults employed in 17 of the 23 job families listed by O*NET (Peterson et al., 2001), who completed a survey of the items listed in Table 1.

Results

Means, standard deviations, and correlations at the index level are displayed in Table 2. Because the sample was sufficient in size and respondent-to-item ratio, I analyzed the data with structural equation modeling (SEM) using EQS software version 6.1 (Bentler, 1995) with maximum likelihood estimation procedures. Missing data were not a significant problem, as all items had less than 3% of cases missing. To avoid losing substantively meaningful responses, I used pairwise rather than listwise deletion for the missing data points.

Confirmatory factor analysis

To provide a rigorous examination of the fit of the measurement models for the prosocial job characteristics items, I compared four models. The first model was a single-factor solution that subsumed all of the prosocial job characteristics items. The second model was a two-factor solution in which the first factor subsumed the impact on beneficiaries items and the second factor subsumed the contact with beneficiaries items. The third model was a three-factor solution in which the first factor subsumed the magnitude/depth items, the second factor subsumed the frequency items, and the third factor subsumed the scope/breadth items. The fourth model was the hypothesized 6-factor solution. In all four models, I allowed the factors to covary.

The first three models displayed very poor fit, and the 6-factor solution was the only model to achieve good fit according to the rules of thumb in the literature (Hu & Bentler, 1999). The fit indices for the 6-factor solution were $\chi^2(120) = 186.30$, NNFI = 0.96, CFI = 0.97, SRMR = 0.044, RMSEA = 0.073, RMSEA confidence interval (0.052, 0.093). The chi-square statistic, a 'badness of fit' statistic that examines the discrepancy between sample and estimated covariance matrices, should not be statistically significant at the $p = 0.05$ level. However, because the chi-square statistic is sensitive to sample size, researchers commonly consider a chi square to degrees of freedom ratio of less than 2 to 1 to be good fit (Arbuckle, 1997), and the 6-factor solution

Table 1. Prosocial job characteristics items.

Construct	Dimension	Item
<i>Job opportunities for impact on beneficiaries</i>	Magnitude	My job gives me the chance to make a significant positive difference in others' lives. My job provides opportunities to substantially improve the welfare of others. My job has the potential to make others' lives much better.
	Frequency	My job provides opportunities to have positive impact on others on a regular basis. My job allows me to have positive impact on others almost every day. My job frequently improves the lives of others.
	Scope	A lot of people can be positively affected by how well my job gets done. My job provides opportunities to have a positive impact on a large number of other people. Quite a few people benefit from my job.
<i>Job opportunities for contact with beneficiaries</i>	Frequency	My job allows frequent communication with the people who benefit from my work. My job often gives me the opportunity to meet the people who benefit from my work.
	Breadth	My job enables me to interact regularly with the people who benefit from my work. My job provides me with contact with different groups of people who benefit from my work.
	Depth	My job allows me to interact with a variety of people who benefit from my work. My job enables me to meet diverse groups of people who benefit from my work. My job enables me to build close relationships with the people affected by my work. My job allows me to form emotional connections with the people who benefit from my work. My job gives me the chance to have meaningful communications with the people who benefit from my work.

met this criterion. For the non-normed fit index (NNFI), which compares the hypothesized model to a null model of random variables, and the comparative fit index (CFI), which compares the hypothesized model with a null model assuming independence between the latent variables, a model is considered good fit if it exceeds a .90 threshold, which the 6-factor solutions did. For the standardized root mean square residual (SRMR), the average difference using standardized residuals between expected and observed variances and covariances, and the root mean square error of approximation (RMSEA), which indicates the average discrepancy or lack of fit per degree of freedom, a model is considered good fit if each index is smaller than .08, and the 6-factor solution met these criteria.

Discussion

The results provide preliminary evidence that the Prosocial Job Characteristics Scale displays strong psychometric properties and that the items representing each construct are distinct from each other. The measurement models indicated that the dimensions of impact on beneficiaries and contact with beneficiaries were empirically distinct (H1); magnitude, frequency, and scope emerged as empirically distinct dimensions of impact on beneficiaries (H2); and frequency, breadth, and depth emerged as empirically distinct

dimensions of contact with beneficiaries (H3). The analyses thus suggest acceptable discriminant validity of the measures of the key constructs and dimensions.

Study 2: The full model

With this evidence, I turned to a test of the full model displayed in Figure 1, with two objectives. First, I sought to test Hypotheses 1–3 with a different sample. Second, I sought to test Hypotheses 4–7 in order to link the prosocial job characteristics to employees' psychological experiences.

Method

Participants and procedures

The sample for this study consisted of 201 employees in two occupational categories: public service and telephone solicitation. The public service employees were 65 lifeguards (55% female, mean tenure = 1.83 years, $SD = 1.13$ years) and 39 police officers (44% female, mean tenure = 11.38 years, $SD = 6.31$ years), and the telephone solicitation employees were 59 salespeople at a recruiting organization (29% female, mean tenure = 4.04 years, $SD = 2.32$ years) and 38 callers at a university fundraising organization (45% female, mean tenure = 0.20 years, $SD = 0.22$ years). The employees volunteered to complete surveys on the organization's time, with pizza as an incentive, as part

Table 2. Studies 1 and 2. Means, standard deviations, and correlations at the index level.

Index	Mean	SD	1	2	3	4	5	6	7	8	9
1 Impact magnitude	5.47	0.96	(0.96)	0.81***	0.74***	0.26**	0.33***	0.41***	–	–	–
	5.31	1.02	(0.82)								
2 Impact frequency	5.24	1.44	0.67***	(0.91)	0.80***	0.39***	0.42***	0.54***	–	–	–
	4.74	1.25		(0.87)							
3 Impact scope	5.31	1.53	0.61***	0.71***	(0.92)	0.25**	0.33***	0.39***	–	–	–
	5.26	1.09			(0.82)						
4 Contact frequency	5.30	1.67	0.23**	0.23**	0.31***	(0.94)	0.72***	0.71***	–	–	–
	4.35	1.64				(0.90)					
5 Contact breadth	4.77	1.64	0.33***	0.34***	0.39***	0.83***	(0.94)	0.53***	–	–	–
	4.56	1.50					(0.93)				
6 Contact depth	4.34	1.83	0.27***	0.36***	0.36***	0.54***	0.56***	(0.94)	–	–	–
	3.41	1.74						(0.93)			
7 Perceived impact on beneficiaries	–	–	0.54***	0.56***	0.55***	0.16*	0.34***	0.27***		–	–
	5.03	1.06							(0.86)		
8 Affective commitment to beneficiaries	–	–	0.38***	0.40***	0.39***	0.42***	0.49***	0.57***	0.34***		–
	4.27	1.48								(0.90)	
9 Prosocial motivation	–	–	0.34***	0.38***	0.38***	0.26***	0.35***	0.25***	0.42***	0.53***	
	5.04	1.25									(0.91)

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Means, standard deviations, and internal consistency statistics (in parentheses) are displayed on top for Study 1 and on the bottom for Study 2. Correlations above the diagonal are for Study 1 and correlations below the diagonal are for Study 2.

of a larger study of work design, motivation, and satisfaction. The overall response rate was 83.53%.

Measures

For the prosocial job characteristics measures, I used the same 18 items as in Study 1, with one set of modifications. In prior research, organizational scholars have taken two different approaches to studying beneficiaries. One approach is to focus on people in general as beneficiaries (Hackman & Oldham, 1980), and the other is to focus on specific categories of beneficiaries of the work that employees carry out, such as clients, customers, and shareholders (e.g., Thompson & Bunderson, 2003). The prosocial job characteristics measures developed here are designed to accommodate both approaches, such that the measures of each construct can focus on people in general as beneficiaries or on specific categories of individuals and groups as beneficiaries, depending on the researcher's interests. Whereas the previous study focused on people in general as beneficiaries in order to accommodate a wide variety of jobs, targeting specific jobs allows for the measures to focus on specific beneficiaries. Thus, it is important to examine whether the proposed factor structures hold for specific beneficiaries of an employee's work as well as the general beneficiaries measured in Study 1. Accordingly, I tailored the item wordings to the specific jobs of employees based on recommendations from managers in each organization, so that rather than asking about general beneficiaries, the items

described beneficiaries as 'guests' for lifeguards, 'citizens' for police officers, 'scholarship students' for fundraising callers, and 'clients' for sales callers. This allowed for an examination of whether the measures were equally valid for general and specific beneficiaries.

For the other-focused psychological states of perceived impact on beneficiaries, affective commitment to beneficiaries, and prosocial motivation, I used three items each. The perceived impact items, adapted from Grant et al. (2007) and Grant (in press a) were 'I feel that my work makes a positive difference in other people's lives', 'I am very aware of the ways in which my work is benefiting others', and 'I am very conscious of the positive impact that my work has on others'. The affective commitment items, adapted from Grant et al. (2007), were 'The people who benefit from my work are very important to me', 'The people who benefit from my work matter a great deal to me', and 'I care deeply about the people who benefit from my work'. The prosocial motivation items, adapted from Grant (in press b), were 'It is important to me to make a real difference in people's lives through my work', 'At work, I care about improving the welfare of other people', and 'One of my objectives at work is to make a positive difference in others' lives'.

To ensure that participants distinguished the other-focused psychological states from the prosocial job characteristics, I introduced the two sets of measures with different instructions. The instructions for the prosocial job characteristics read, 'The following questions focus on the *opportunities that your job*

provides to benefit others and have contact with the people who benefit from your work'. The instructions for the other-focused psychological states read, 'The previous questions were about the opportunities that your job provides. The following questions ask you about your own personal experiences in this job'.

Results

Means, standard deviations, and correlations at the index level are displayed in Table 2. Following recommendations in the structural equation modeling literature (Anderson & Gerbing, 1988), I began with confirmatory factor analyses of the measurement models, and then turned to a test of the full structural model.

Confirmatory factor analysis of prosocial job characteristics items

A confirmatory factor analysis of the prosocial job characteristics items specifying the same 6-factor measurement model as in Study 1 displayed excellent fit with the data, $\chi^2(120)=186.52$, NNFI=0.97, CFI=0.97, SRMR=0.043, RMSEA=0.055, RMSEA confidence interval (0.039, 0.070). This finding suggests that the hypothesized factor structure of the prosocial job characteristics holds for specific as well as general beneficiaries.³ In light of these promising results, I turned to the other-focused psychological states items.

Confirmatory factor analysis of the other-focused psychological states measures

For the confirmatory factor analysis of the other-focused psychological states measures, I compared multiple models. The first model was a single-factor solution that subsumed all of the other-focused psychological states items. The second model was a two-factor solution in which the first factor subsumed perceived impact and affective commitment and the second factor subsumed prosocial motivation. The third and fourth models were also two-factor solutions. For the third model, the first factor subsumed perceived impact and prosocial motivation; for the fourth model, the first factor subsumed affective commitment and prosocial motivation. The fifth model was the hypothesized three-factor solution. In all five models, I allowed the factors to covary. The first four models displayed very poor fit. In support of my hypothesis, the three-factor solution displayed excellent fit, $\chi^2(24)=38.25$, NNFI=0.98, CFI=0.99, SRMR=0.057, RMSEA=0.056, RMSEA confidence interval (0.016, 0.087).

Structural model

For the purpose of testing the full structural model, in order to avoid linear dependencies that would arise from using multiple latent second-order factors, I computed means for each of the prosocial job characteristics dimensions, as is common in the literature when transitioning from a confirmatory factor analysis of a measurement model to a test of a structural model. To ensure that this step was appropriate, I first tested a measurement model with second-order latent factors for impact on beneficiaries and contact with beneficiaries reflecting three dimensions each (see Figure 2). The model displayed acceptable levels of fit on all indices, $\chi^2(126)=200.55$, NNFI=0.96, CFI=0.97, SRMR=0.052, RMSEA=0.057, RMSEA confidence interval (0.042, 0.071). The fit of this second-order model suggests that it is appropriate to treat the three impact dimensions and the three contact dimensions as reflections of superordinate impact and contact constructs; impact and contact can operate as aggregate model multi-dimensional constructs (Law, Wong, & Mobley, 1998). I thus computed means of the dimensions to create partially aggregated predictor variables, rather than representing the dimensions individually as predictor variables (see Table 2 for reliability estimates for the dimensions).

I then tested the full structural model, allowing the exogenous factors (impact on beneficiaries and contact with beneficiaries) and the residuals for the endogenous factors (perceived impact, affective commitment, and prosocial motivation) to correlate. The model displayed acceptable fit with the data, $\chi^2(84)=174.54$, NNFI=0.94, CFI=0.95, SRMR=0.091, RMSEA=0.075, RMSEA confidence interval (0.059, 0.091). I then took two steps in order to improve the model fit. First, I examined the standardized solution and the Wald test for dropping parameters to determine whether any of the specified paths did not achieve statistical significance at the 0.05 level. There was only one such path, from contact with beneficiaries to perceived impact on beneficiaries; I thus removed it. Second, I consulted the EQS LaGrange Multiplier test, which indicates additional paths that may be included to enhance the fit of the model. Heeding recommendations to exercise caution given the questionable theoretical validity of adding paths post-hoc based solely on statistical information, as well as the statistical limitations of these additions, which often capitalize on sampling error (Williams, 1995), I decided to add one path, from impact on beneficiaries to affective commitment to beneficiaries. I added this path in light of social psychological evidence indicating that when individuals encounter opportunities to have a positive impact on others and act on such opportunities, they come to believe that the beneficiary

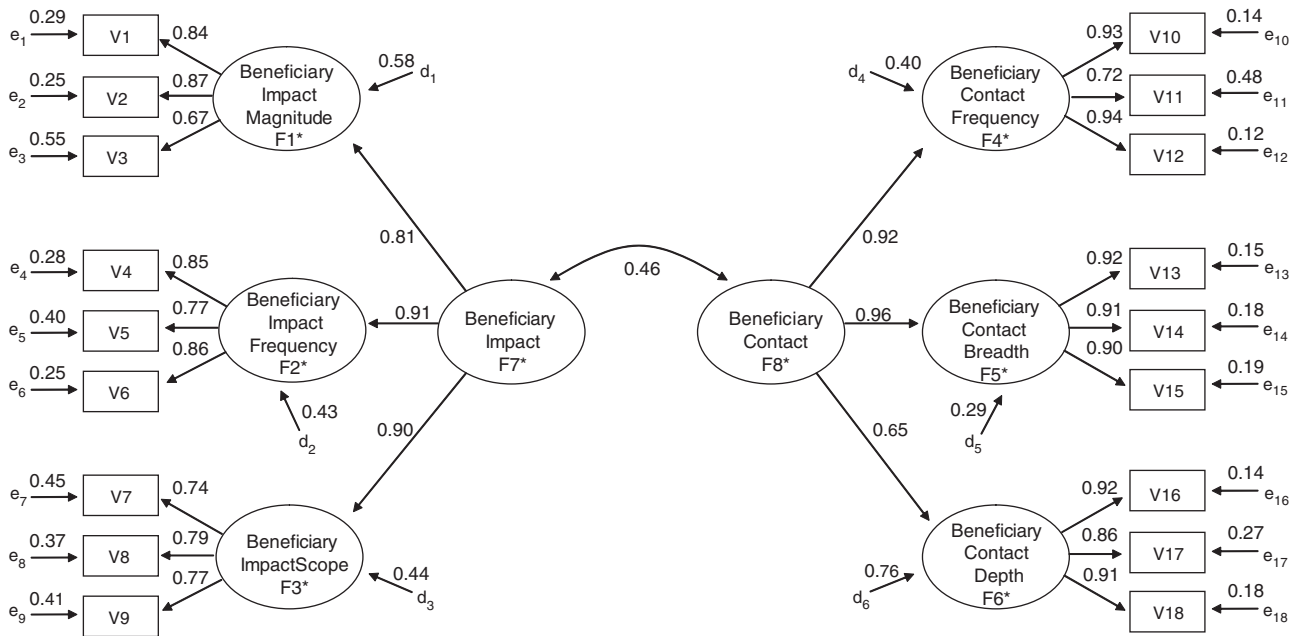


Figure 2. Study 2. Prosocial job characteristics measurement model with second-order factors.

Notes: $\chi^2(126) = 200.55$; NNFI = 0.96; CFI = 0.97; SRMR = 0.052; RMSEA = 0.057; RMSEA confidence interval (0.042, 0.071). V1–V18 correspond to the 18 items in Table 1 in order.

is a valuable person deserving of their efforts (Jecker & Landy, 1969; Flynn & Brockner, 2003). The two changes marginally improved the fit of the model, which was very good, $\chi^2(84) = 161.96$, NNFI = 0.95, CFI = 0.96, SRMR = 0.065, RMSEA = 0.070, RMSEA confidence interval (0.053, 0.086). The resulting structural model is displayed in Figure 3.

Testing for mediation

In order to examine whether the hypothesized mediators fully mediated the observed relationships, I tested an additional model examining whether perceived impact and affective commitment mediated the associations between the prosocial job characteristics and prosocial motivation (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). The additional structural model included direct paths from impact on beneficiaries (F1) and contact with beneficiaries (F2) to prosocial motivation (F5), $\chi^2(82) = 157.99$, NNFI = 0.95, CFI = 0.96, SRMR = 0.064, RMSEA = 0.070, RMSEA confidence interval (0.053, 0.086). These new paths were not statistically significant ($F1 \rightarrow F5 = 0.17$, $F2 \rightarrow F5 = 0.07$), and a chi-square test showed that the model fit did not improve significantly, $\chi^2(2) = 3.97$, $p > 0.13$. Thus, it appears that perceived impact and affective commitment fully mediated the associations between the prosocial job characteristics and prosocial motivation.

In summary, this analysis provided a test of all nine hypotheses. A confirmatory factor analysis once again

showed that the dimensions of job opportunities for impact and contact with beneficiaries were empirically distinct (H1–H3), and factor loadings were invariant across this sample and the sample from Study 1 despite the shift from general to specific beneficiaries. Moreover, a separate confirmatory factor analysis supported discriminant validity between the other-focused psychological states (H4). For the five new hypotheses tested with the full structural model, four hypotheses were supported, with significant paths from opportunities for impact to perceived impact (H5a), contact to affective commitment (H5c), perceived impact to prosocial motivation (H6a), and affective commitment to prosocial motivation (H6b). One hypothesis, that contact with beneficiaries would be associated with higher levels of perceived impact on beneficiaries, was not supported (H5b). Analyses also revealed an additional significant path not hypothesized, from opportunities for impact on beneficiaries to affective commitment to beneficiaries. Moreover, the majority of observed relationships were fully, rather than partially, mediated by the specified intervening variables.

Discussion

Confirmatory factor analyses once again supported the hypothesized factor structures of the prosocial job characteristics in a different sample using specific rather than general beneficiaries, and also supported

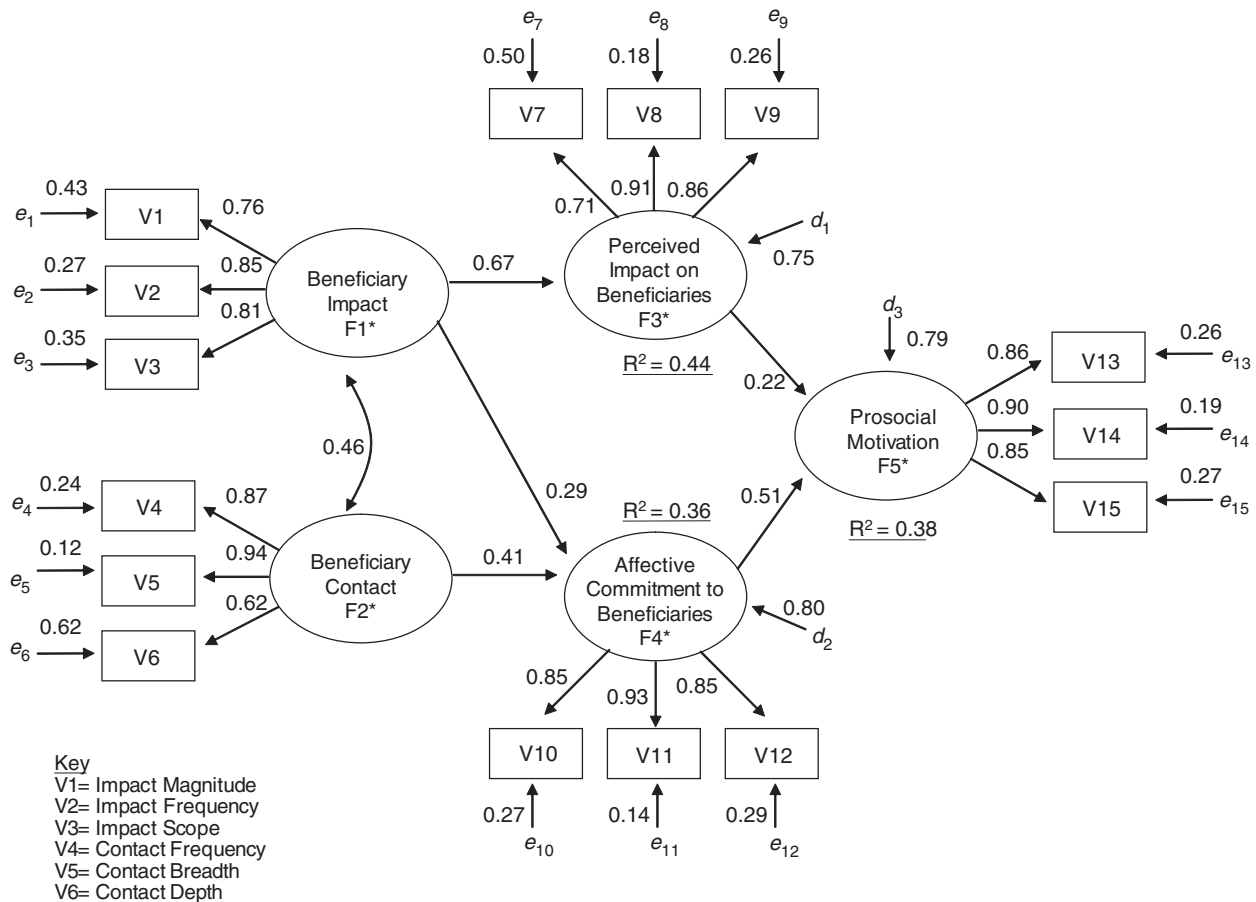


Figure 3. Study 2. Structural model.

Notes: $\chi^2(84) = 161.96$; NNFI = 0.95; CFI = 0.96; SRMR = 0.065; RMSEA = 0.070; RMSEA confidence interval (0.053, 0.086). V1 = impact magnitude, V2 = impact frequency, V3 = impact scope, V4 = contact frequency, V5 = contact breadth, V6 = contact depth. V7–V15 correspond to the other-focused psychological states items in the order listed in the text.

the discriminant validity of measures of perceived impact, affective commitment, and prosocial motivation. Along with these promising measurement results, the data supported the majority of the predicted interrelationships, providing initial evidence for the predictive and consequential validity of the prosocial job characteristics (John & Benet-Martinez, 2000). Opportunities for impact on beneficiaries were associated with higher levels of perceived impact on beneficiaries, and opportunities for contact with beneficiaries were associated with higher levels of affective commitment to beneficiaries. These two psychological states were associated with higher levels of prosocial motivation.

The analyses also revealed two surprising findings. First, contact with beneficiaries was not associated with perceived impact on beneficiaries. It is possible that contact with beneficiaries functions psychologically as a double-edged sword, in that it serves to make employees aware of their negative impact on beneficiaries, such as when nurses and physicians learn through contact with patients that they have caused physical and psychological harm (Molinsky &

Margolis, 2005). Thus, if contact makes employees aware of their negative impact on beneficiaries, it may not strengthen their perceptions of positive impact on beneficiaries. Second, opportunities for impact on beneficiaries predicted affective commitment to beneficiaries. This finding extends current theory by suggesting that the opportunities for impact that jobs provide may positively influence employees' feelings toward the beneficiaries of this impact. As discussed previously, this finding is buttressed by social psychological research signifying that when people take action to have a positive impact on a beneficiary, they often make sense of these actions by identifying the beneficiary as an important individual who is worthy of their time and energy (Flynn & Brockner, 2003; Jecker & Landy, 1969), inferring that they are affectively committed to the beneficiary. Further research is also necessary to examine this possibility. With the exception of these two surprising findings, the full structural model provided strong support for the hypotheses about the associations between the prosocial job characteristics and other-focused psychological states.

Study 3: Multitrait-multimethod matrix

In both studies, the dimensions of each construct were highly correlated and, although they are statistically distinct, further evidence is needed to provide support for the convergent and discriminant validity of these measures. Because the surveys focused only on self-report measures using a single scale, the results are likely affected by common method and source biases (see Podsakoff, MacKenzie, & Lee, 2003). As such, it is necessary to collect multi-method, multi-source data to correct for method and source variance. If the prosocial job characteristics are indeed structural properties of the architecture of work rather than merely subjective perceptions of this architecture, they should converge with reports from different sources using different methods (Morgeson & Campion, 2003).

Accordingly, the purpose of Study 3 is to examine the validity of the Prosocial Job Characteristics Scale by providing a more rigorous assessment of Hypotheses 1–3. To do so, I collected multi-method, multi-source data in line with the classic Campbell and Fiske (1959) multitrait-multimethod (MTMM) matrix. Following recommendations enabled by recent methodological and statistical advances, I used confirmatory factor analyses to test the MTMM matrices and assess construct validity (e.g., Bagozzi, Yi, & Phillips, 1991; Bagozzi & Edwards, 1998).

Method

Participants

The primary sample for this study consisted of 213 employed undergraduates recruited from psychology courses at two universities: 130 from an Ivy League university and 83 from a public university in the Midwest. The respondents, described hereafter as ‘job incumbents’, responded to a survey about their current jobs (response rate = 72.95%) to provide data for a guest lecture. The jobs covered 21 of the 23 job families listed by O*NET (Peterson et al., 2001).

Procedures and measures

Job incumbents completed a two-part survey. First, they provided a brief description of their jobs. Second, they completed the self-report measure of the prosocial job characteristics developed in Studies 1 and 2. Following recommendations to prevent response order effects and common source biases from influencing judgments (Podsakoff et al., 2003; Schwarz, 1999), I presented the items in random order, and to minimize respondent burden and item redundancy, used only two items per dimension.

To provide data using an alternative method and source, two observers rated the incumbents’ job descriptions on six items, with one item for each

prosocial job characteristic dimension. One observer was a psychology doctoral student with experience in job analysis, and the other observer was an undergraduate research assistant majoring in organizational psychology. Both observers were blind to incumbents’ ratings and each other’s. The items were phrased as questions in commonsense terminology, using a different format from the job incumbent measures, as well as a 7-point rating scale (1 = not at all, 7 = very much) that differed from the rating scale for the job incumbents. For impact magnitude, the question asked, ‘To what extent does this job have a significant positive impact on other people?’ For impact frequency, the question asked, ‘How often does this job have a positive impact on other people?’ For impact scope, the question asked, ‘To what extent does this job have a positive impact on a large number of people?’ For contact frequency, the question asked, ‘How often does this job provide interactions with beneficiaries?’ For contact breadth, the question asked, ‘To what extent does this job provide opportunities to interact with different groups of beneficiaries?’ For contact depth, the question asked, ‘How meaningful are the relationships with beneficiaries provided by this job?’

It should be noted that compared to the common approach in job design research of triangulating job incumbent reports with supervisor, coworker, and spouse reports (e.g., Hackman & Oldham, 1980), observer ratings of job descriptions provide a more conservative examination of method and source biases (e.g., Spector & Jex, 1991). This is because supervisors, coworkers, and spouses are exposed to the same social information as job incumbents, and are thereby more likely to perceive jobs in similar ways to the incumbents (e.g., Griffin, 1983). In other words, supervisors, coworkers, and spouses are often influenced by the same sources of bias as incumbents, whereas more distant observers are less likely to be affected by them. Indeed, Spector and Jex (1991) found that observer ratings of job descriptions were only modestly related to incumbents’ reports of job characteristics. Accordingly, evidence for the convergent validity of incumbent ratings and observer ratings of job descriptions, and the discriminant validity of the prosocial job characteristics measured with multiple methods and sources, would provide strong support for the psychometric properties of the instrument.

Results

Because the two observers provided single ratings for each prosocial job characteristic dimension,⁴ whereas the job incumbents responded to two items for each prosocial job characteristic dimension, a parsimonious approach to modeling the MTMM matrix is to

aggregate the job incumbent ratings of two items per dimension into a single item per dimension, described as a partial disaggregation model (Bagozzi & Edwards, 1998). In order to ensure that it was appropriate to aggregate the two items per dimension into one by computing their means, I conducted a confirmatory factor analysis of the job incumbent ratings. This was important given that the sample (employed students rather than employed adults) and number of items per dimension (two rather than three) differed from Studies 1 and 2. I tested a 6-factor measurement model that used two items per factor rather than three. The model displayed excellent fit with the data, $\chi^2(39) = 60.95$, NNFI = 0.98, CFI = 0.99, SRMR = 0.035, RMSEA = 0.053, RMSEA confidence interval (0.024, 0.077). Accordingly, I computed the means of the two items for each factor to represent the job incumbents' ratings. I treated the single ratings provided by the two observers as separate, representing a total disaggregation model (Bagozzi & Edwards, 1998).

Following guidelines in the structural equation modeling literature (Bagozzi et al., 1991), I carried out the MTMM matrix analyses by conducting a confirmatory factor analysis of a correlated trait-correlated method MTMM model, as recommended by Lance, Noble, and Scullen (2002).⁵ The model included six correlated trait factors corresponding to the six prosocial job characteristics dimensions (impact magnitude, frequency, scope, contact frequency, breadth, and depth) and three correlated method factors (one each for the job incumbent and the two observers), and the results are displayed in Figure 4. The model displayed acceptable fit with the data, $\chi^2(99) = 264.21$, NNFI = 0.91, CFI = 0.94, SRMR = 0.069, RMSEA = 0.089, RMSEA confidence interval (0.076, 0.101).

Convergent and discriminant validity

Following the recommendations offered in the structural equation modeling literature to assess convergent and discriminant validity (Bagozzi et al., 1991), the hypothesized MTMM model was compared to a nested set of more restrictive models. The full set of indices for each restrictive model, and the chi-square difference tests comparing these models with the hypothesized model, are displayed in Table 3. I assessed convergent validity by comparing the hypothesized model, in which traits were specified, to an alternative model, in which they were not specified, to ensure that independent measures of the same trait were correlated. The alternative no traits/freely correlated methods model showed poor fit with the data, and the chi-square difference test showed the hypothesized model demonstrated significantly better fit than the alternative model (see Table 3, Model 2), supporting convergent

validity of the multi-source, multi-method ratings of the prosocial job characteristics.

I assessed discriminant validity by following three steps. First, I compared the hypothesized model in which methods correlated freely to an alternative model in which methods were perfectly correlated to ensure that there was not significant common method bias across measurement methods. The freely correlated traits/perfectly correlated methods model displayed poor fit with the data, and the chi-square difference test showed that the hypothesized model demonstrated significantly better fit than the alternative model (see Table 3, Model 3). Second, I compared the hypothesized model in which traits correlated freely to an alternative model in which traits were perfectly correlated to ensure that independent measures of different traits were not correlated. The alternative perfectly correlated traits/freely correlated methods model showed relatively poor fit with the data, and a chi-square difference test showed that the hypothesized model demonstrated significantly better fit than the alternative model (see Table 3, Model 4). Third, although the prior test showed that the hypothesized model in which the six factors were freely correlated displayed significantly better fit than an alternative model in which all six factors were perfectly correlated, additional model comparisons are necessary to examine whether the hypothesized model displays better fit than alternative models in which only the factors with the highest correlations are specified as perfectly correlated. To examine whether the highest factor correlations were statistically different from 1, the hypothesized model was compared to four alternative models in which each of the four highest inter-factor correlations was fixed to 1. Chi-square difference tests showed that the hypothesized model demonstrated significantly better fit than all four alternative models (see Table 3, Models 5–8), supporting discriminant validity between each of the factors. Thus, all three steps supported discriminant validity between the prosocial job characteristics.

Factor loadings and correlations for the accepted correlated trait-correlated methods model are displayed in Table 4, and variance components for the measures attributable to trait, method, and error are displayed in Table 5. Because the proportion of method variance exceeds the proportion of trait variance for 10 of the 18 variables, method effects may be attenuating trait effects, limiting evidence of convergent validity. Conversely, the factor loadings for the traits are quite reasonable, and the chi-square difference tests support the convergent and discriminant validity of the measures. As such, the full set of analyses suggests acceptable psychometric properties of the self-report scale.

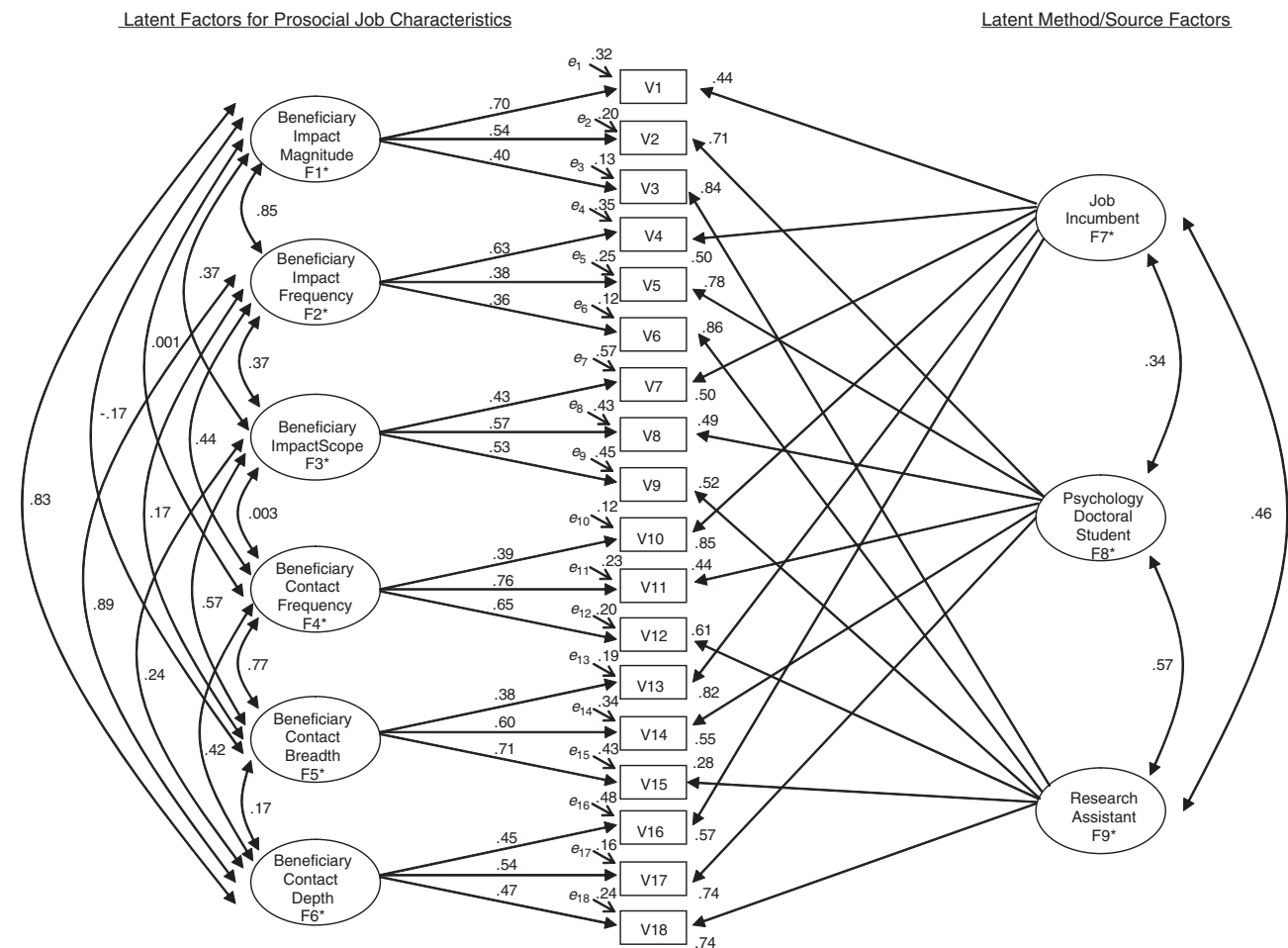


Figure 4. Study 3. Confirmatory factor analysis of MTMM model.

Notes: $\chi^2(99) = 264.21$; NNFI = 0.91; CFI = 0.94; SRMR = 0.069; RMSEA = 0.089; RMSEA confidence interval (0.076, 0.101).

Discussion

The results of this analysis provide important evidence regarding the psychometric properties of the prosocial job characteristics measures. To transcend the common method and source biases inherent in sole reliance on self-report measures in Studies 1 and 2, this study triangulated job incumbent self-reports with ratings of job descriptions from two independent observers using different items and rating scales, providing a conservative test of the validity of the measures. Confirmatory factor analyses of MTMM matrices supported the convergent and discriminant validity of the prosocial job characteristics measures. The evidence for convergent and discriminant validity is promising given that the independent observer ratings were based on brief job descriptions without any exposure to the incumbents or the jobs that they performed.

General discussion

Although employees are increasingly concerned with finding jobs that enable them to do good, we know

surprisingly little about the dimensions and psychological consequences that characterize these jobs. To advance existing theory and research on these issues, I conducted three studies to examine the dimensions and psychological consequences of prosocial job characteristics. In Study 1, confirmatory factor analyses suggested strong psychometric properties of a self-report scale measuring three dimensions each of job opportunities for impact on and contact with beneficiaries. In Study 2, a structural model using data from a field sample of public service and telephone solicitation employees identified the psychological mechanisms through which these prosocial job characteristics were associated with stronger motivations to do good. In Study 3, confirmatory factor analyses of MTMM matrices comparing self-reports of job incumbents with two independent observer ratings of job descriptions supported the convergent and discriminant validity of the prosocial job characteristics dimensions. Taken together, the results of these studies make important contributions to psychological and organizational theory, research, and practice.

Table 3. Study 3. Convergent and discriminant validity analyses.

Model	χ^2 (df)	NNFI	CFI	SRMR	RMSEA	RMSEA confidence interval	Chi-square difference test
1 Hypothesized (freely correlated traits, freely correlated methods)	264.21 (99)	0.91	0.94	0.069	0.089	(0.076, 0.101)	–
2 No traits, freely correlated methods	933.59 (132)	0.66	0.71	0.114	0.169	(0.159, 0.179)	$\chi^2(33) = 669.38$ $p < 0.0001$
3 Freely correlated traits, perfectly correlated methods	696.99 (102)	0.67	0.78	0.081	0.166	(0.154, 0.177)	$\chi^2(3) = 432.78$ $p < 0.0001$
4 Perfectly correlated traits, freely correlated methods	450.27 (114)	0.84	0.88	0.066	0.118	(0.106, 0.129)	$\chi^2(15) = 186.06$ $p < 0.0001$
5 Impact magnitude (F1) and impact frequency (F2) perfectly correlated	273.62 (100)	0.90	0.94	0.069	0.090	(0.078, 0.103)	$\chi^2(1) = 9.41$ $p < 0.01$
6 Impact magnitude (F1) and contact depth (F6) perfectly correlated	278.88 (100)	0.90	0.93	0.071	0.092	(0.079, 0.104)	$\chi^2(1) = 14.67$ $p < 0.0001$
7 Impact frequency (F2) and contact depth (F6) perfectly correlated	269.00 (100)	0.91	0.94	0.068	0.089	(0.076, 0.102)	$\chi^2(1) = 4.79$ $p < 0.03$
8 Contact frequency (F4) and contact breadth (F5) perfectly correlated	289.61 (100)	0.89	0.93	0.067	0.095	(0.082, 0.107)	$\chi^2(1) = 25.40$ $p < .0001$

Contributions to positive psychology and positive organizational scholarship

This paper offers two contributions to the positive psychology and positive organizational scholarship movements, which have attracted considerable attention in recent years (e.g., Cameron, Dutton, & Quinn, 2003; Fineman, 2006; Fredrickson, 2001; Luthans, 2002). The first contribution lies in taking a step toward putting positive psychology in context. Empirical research has focused primarily on positive traits and positive emotions, with comparatively little attention to positive institutions. Using the lens of job design, this paper offers a fresh look at positive institutions. My aim is to stimulate new theory and research that will assess the features of positive institutions that fulfill and strengthen employees' motives to do good. For example, we need research to explore how jobs cultivate not only the desire to do good, but also the knowledge, skills, and abilities to do good. We also need research to explore the content of doing good: how do people conceptualize what it means to make a difference? My hope is to motivate researchers to examine how understandings of the meaning of doing good differ across occupational, organizational, and national cultures (Fineman, 2006; George, 2004).

The second contribution lies in bringing job design into positive psychology and positive organizational scholarship. Although researchers have been studying job design and enrichment for five decades, the positive psychology and positive organizational scholarship movements have taken little notice of this rich history. Most of the research to date on positive institutions has focused on *where employees belong*. Researchers have begun to assess how organizational cultures,

climates, routines, and relationships foster compassion (Dutton, Worline, Frost, & Lilius, 2006), authenticity (Gardner, Avolio, Luthans, May, & Walumbwa, 2005), and resilience and reliability (Blatt, Christianson, Sutcliffe, & Rosenthal, 2006). In comparison, much less research has focused on positive institutions that influence *what employees do*. In other words, researchers have predominantly defined positive institutions in terms of the properties of social collectives. My contribution is to remind researchers that the jobs employees perform, not only the social collectives to which they belong, can be understood as positive institutions. Considering the wealth of evidence that well-designed jobs can be a source of positive experiences and positive actions, job design should be a central topic for positive scholarship. This focus on job design calls attention to positive *work and occupational* scholarship to accompany positive *organizational* scholarship. This challenges researchers to complement knowledge about social collectives with research on the structures of work (jobs, roles, tasks, goals, and projects) as positive institutions. For example, a key issue concerns common job design tradeoffs between work simplification, which maximizes efficiency and minimizes strain, and work enrichment, which maximizes motivation and minimizes boredom (see Morgeson & Campion, 2003). Is it possible to achieve positive synergies?

Contributions to job design theory and research

A prosocial lens challenges job design researchers to study how jobs can enable employees to do good along with doing well. This is the first set of studies to test and validate the predicted factor structure of Grant's (2007) prosocial job characteristics. As such, this paper

Table 4. Study 3. Factor loadings and correlations for correlated trait/correlated methods model.

Variables	Factor loadings								
	Traits (prosocial job characteristics)						Methods (sources)		
	PJIM	PJIF	PJIS	CWBF	CWBB	CWBD	JI	DS	RA
Job incumbent									
Impact magnitude	0.70						0.44		
Impact frequency		0.63					0.50		
Impact scope			0.43				0.50		
Contact frequency				0.39			0.85		
Contact breadth					0.38		0.82		
Contact depth						0.45	0.57		
Doctoral student									
Impact magnitude	0.54							0.71	
Impact frequency		0.38						0.78	
Impact scope			0.57					0.49	
Contact frequency				0.76				0.44	
Contact breadth					0.60			0.55	
Contact depth						0.54		0.74	
Research assistant									
Impact magnitude	0.40								0.84
Impact frequency		0.36							0.86
Impact scope			0.53						0.52
Contact frequency				0.65					0.61
Contact breadth					0.71				0.28
Contact depth						0.47			0.74
<i>Factor correlations and standard errors</i>									
Impact magnitude (F1)	1.00								
Impact frequency (F2)	0.85 (0.05)	1.00							
Impact scope (F3)	0.37 (0.10)	0.37 (0.11)	1.00						
Contact frequency (F4)	0.001 (0.12)	0.44 (0.10)	0.003 (0.12)	1.00					
Contact breadth (F5)	-0.17 (0.12)	0.17 (0.12)	0.57 (0.09)	0.77 (0.05)	1.00				
Contact depth (F6)	0.83 (0.05)	0.89 (0.05)	0.24 (0.12)	0.42 (0.09)	0.17 (0.12)	1.00			
Job incumbent (F7)							1.00		
Doctoral student (F8)							0.34 (0.08)	1.00	
Research assistant (F9)							0.46 (0.07)	0.59 (0.06)	1.00

Notes: All factor loadings are statistically significant at the $p < 0.05$ level. For the factor correlations, standard errors are in parentheses. PJIM = prosocial job impact magnitude; PJIF = prosocial job impact frequency; PJIS = prosocial job impact scope; CWBF = contact with beneficiaries frequency; CWBB = contact with beneficiaries breadth; CWBD = contact with beneficiaries depth; JI = job incumbent; DS = doctoral student; RA = research assistant.

supports the proposition that impact on beneficiaries and contact with beneficiaries are empirically distinct, multidimensional job characteristics. Further, the results offer important insights into the psychological mechanisms through which prosocial job characteristics affect employees by showing that job opportunities for impact on and contact with beneficiaries are associated with higher levels of perceived impact on and affective commitment to these beneficiaries, which in turn predict prosocial motivation. The results provide initial support for the theoretical framework

presented by Grant (2007), suggesting that jobs can be prosocially designed to motivate employees to care about doing good.

Additionally, few instruments exist to measure the prosocial characteristics of jobs that enable employees to do good. This paper takes a step toward redressing these gaps by developing and validating an instrument for measuring the prosocial job characteristics that provide opportunities for impact on and contact with beneficiaries. The measures will enable researchers to gain a deeper

Table 5. Study 3. Variance components for measures.

Measure	Trait	Method	Error
Job incumbent			
Impact magnitude	0.49	0.19	0.32
Impact frequency	0.40	0.25	0.35
Impact scope	0.18	0.25	0.57
Contact frequency	0.16	0.72	0.12
Contact breadth	0.14	0.67	0.19
Contact depth	0.20	0.32	0.48
Doctoral student			
Impact magnitude	0.29	0.51	0.20
Impact frequency	0.14	0.61	0.25
Impact scope	0.32	0.24	0.43
Contact frequency	0.58	0.19	0.23
Contact breadth	0.35	0.31	0.34
Contact depth	0.29	0.55	0.16
Research assistant			
Impact magnitude	0.16	0.71	0.13
Impact frequency	0.13	0.75	0.12
Impact scope	0.28	0.27	0.45
Contact frequency	0.42	0.37	0.20
Contact breadth	0.50	0.08	0.43
Contact depth	0.22	0.55	0.24

Note: Variances do not always sum to 1.00 due to rounding error.

and broader grasp of the social foundations of work to complement existing knowledge about the task, knowledge, and physical foundations of work. The robust psychometric properties of the instrument are particularly valuable given that prior job design measures have been hampered by lack of discriminant validity between job characteristics, complex response scales, and negatively worded items (Taber & Taylor, 1990). Accordingly, the evidence across studies supporting the convergent, discriminant, and predictive validity of the prosocial job characteristics with multiple methods, sources, and samples offers important contributions to job design theory and research.

Contributions to prosocial behavior theory and research

Finally, research on prosocial behavior has surged in recent decades, spanning topics such as organizational citizenship behavior, helping, corporate social responsibility, volunteering, and cooperation. However, although researchers have devoted extensive attention to prosocial behaviors, the expression of these behaviors is often shaped by psychological experiences of prosocial motivation, and existing conceptualizations and measures of prosocial motivation are relatively limited (Grant, in press b). This paper begins to redress this gap by identifying three other-focused psychological states that may serve as mechanisms linking organizational contexts to prosocial behaviors, and by

providing parsimonious measures of these states that can be utilized to predict different forms and expressions of prosocial behavior.

Limitations and future directions

It is important to acknowledge several limitations of this paper and their implications for future research. First, further research is necessary to examine whether the prosocial job characteristics items adequately represent the content domain of the constructs. Second, my convergent and discriminant validity analyses focused the dimensions of prosocial job characteristics, rather than comparisons with other jobs characteristics. A key task for future research is to examine whether prosocial job characteristics are more closely related to other social characteristics than task, physical, and knowledge characteristics. Third, the studies presented here assume that opportunities for impact and contact with beneficiaries are relatively stable job characteristics. However, given evidence that employees often alter the characteristics of their jobs, roles, and tasks (e.g., Wrzesniewski & Dutton, 2001), I recommend that researchers investigate how prosocial job characteristics change over time. Fourth, in Study 3, I was only able to use two items per construct rather than three, and I also treated raters as a proxy for methods. I recommend that future research examine MTMM matrices with the full set of items and methodologically distinct measures. Finally, future research should utilize more representative, strategic

sampling to examine how prosocial job characteristics differ across occupational and organizational contexts, with particular attention to the conditions under which the dimensions of job opportunities for impact on and contact with beneficiaries converge versus diverge. For example, in some settings, jobs are designed to provide opportunities for impact that is high in magnitude but low in scope (e.g., service jobs in which employees work with clients one-on-one), and vice-versa (e.g., manufacturing jobs in which employees contribute to products that are widely distributed but offer relatively little benefit to customers). An empirical examination of these types of tradeoffs will be instrumental to developing a deeper understanding of the nature of prosocial job characteristics.

Conclusion

This paper provides new insights into the dimensions and psychological consequences of prosocial job characteristics. It provides psychologists and organizational scholars with an expanded understanding of how jobs can be designed to motivate employees to care about doing good. By guiding the diagnosis and evaluation of jobs designed to do good, this paper may assist researchers in fulfilling their own motivations to do good. As Sackett (1996, p. 416) put it, 'What do people hope to accomplish through careers in academia? Although some are just trying to make a living, many have larger aspirations. Put simply, we want to make a difference. We want to leave the world a better place than we found it as a result of the work we do.'

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Notes

1. It is important to note that these other-focused psychological states are only a starting point for understanding the complex cognitive and emotional consequences of prosocial job characteristics. For example, employees are likely to experience pride, gratitude, warmth, and empathic joy when they succeed in making a difference (Batson, 1990), guilt and shame

when they fail (Tangney, 1995), and inspiration and elevation when they observe their colleagues making a difference (Keltner & Haidt, 2003).

2. Tests of expectancy theory following Vroom's (1964) formulation have generally shown that multiplicative models explain little variance over and above additive models (Van Eerde & Thierry, 1996). As such, an additive rather than multiplicative model is hypothesized.
3. I also conducted a two-group confirmatory factor analysis, comparing the covariance matrices of the prosocial job characteristics data from Study 1 and Study 2, to examine invariance of factor loadings across the two samples. The model displayed good fit with the data, $\chi^2(252) = 402.36$, NNFI = 0.96, CFI = 0.97, SRMR = 0.057, RMSEA = 0.046, RMSEA confidence interval (0.037, 0.054). Following recommendations in the literature (e.g., Byrne, 1994), I consulted the LaGrange Multiplier Test to examine whether any of the constraints for equal factor loadings should be released. Results showed invariance of factor loadings for the two samples for all items except V16, an item measuring the depth of contact with beneficiaries, where the loading was higher for Study 2 (0.93) than Study 1 (0.89). Accordingly, it can be inferred that the factor loadings are largely invariant across the two samples and items measuring general vs. specific beneficiaries, adding to the robustness of the psychometric properties of the scale.
4. The two observers displayed strong interrater reliability. Using a two-way mixed model with consistency agreement, the intraclass correlation coefficients were 0.52 ($p < 0.001$) for single measure reliability and 0.69 ($p < 0.001$) for average measure reliability.
5. I conducted all analyses on both the covariance matrix and the correlation matrix, and the models performed quite similarly on all fit indices. In light of the limitations identified in conducting analyses on the correlation matrix (Cudeck, 1989; Bagozzi & Edwards, 1998; cf. Byrne, 1994), I have reported all analyses on the covariance matrix, consistent with conventions in the literature.

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