TALKING THE TALK, BUT NOT WALKING THE WALK

A COMPARISON OF SELF-REPORTED AND OBSERVED PROSOCIAL BEHAVIOR

The claim that Public Service Motivation is an antecedent of prosocial behavior has often been empirically tested and supported. However, close inspection of this literature reveals large disparities in relating the two constructs. One reason that could explain such differences is that the relationship between PSM and prosocial behaviors has been primarily tested using self-reported cross-sectional, single-rater and same-survey data. While all of these are widely used methodological approaches in social sciences, they are also susceptible to potential biases. We conduct two comparative studies to re-examine this relationship. Study 1 utilizes self-reported cross-sectional, single-rater and same-survey data linking PSM and prosocial behavior, revealing a positive relationship with PSM's Compassion dimension. Study 2 involves observing actual prosocial behavior in a real-life setting. Then, the correlation between PSM and prosocial behavior disappears. We conclude by discussing the possible reasons that could lead to the differences found across the two studies.

Keywords: Public Service Motivation, Prosocial Behavior, Common-Method Bias, Behavioral Public Administration

INTRODUCTION

The acknowledgement that Public Service Motivation (PSM) broadly entails doing good for others (Perry & Hondeghem, 2008) has led Public Administration (PA) scholars to embrace the idea that prosocial behavior is inherent to (public) employees with high PSM. This positive relationship has been substantiated on the basis of the PSM construct, which predisposes high-PSM individuals to indulge in meaningful public service actions such as community and social service (Brewer & Selden, 1998). Indeed, an impressive series of empirical studies largely provide support for a positive relationship between PSM and prosocial behavior. However, a close inspection of this empirical work reveals certain potentially critical inconsistencies, which makes a re-examination of this fundamental link necessary. Specifically, we find at least two types of important potential weaknesses in the extant literature. The first is related to the measurement of prosocial behavior, and the second to the different dimensions of PSM that serve as antecedents of prosocial behavior.

A careful analysis of the existing PA literature on the topic reveals that the vast majority of the studies dealing with prosocial behavior rely on self-reported single-rater and same-survey measures of this concept in the context of a cross-sectional design. This lends credibility to the comments of previous scholars regarding the lack of maturity of the empirical and methodological tools used in the PA field (Kelman, 2007). Rather surprisingly, close to none of the studies has used observable individual prosocial behavior in a real-life setting. A rare exception from the standard cross-sectional, self-reported and same-survey design is Esteve et al. (2016). However, although they study the effect of PSM on incentivized behavior in a computer lab setting (i.e., investments in a public goods game), they still do not observe actual prosocial behavior in a real-life setting.

The usage of self-reported data from a single rater in combination with the collection of the dependent as well as independent variables in the same survey makes the measures

susceptible to several possible biases. The reliance on a common rater may introduce systematic variance between the two variables, known as common-method bias (CMB) or variance (CMV), giving an indication of a relationship between the two that may not actually exist, hence threatening the validity of the results (Chang et al., 2010; Podsakoff et al., 2003). Despite these well-established risks associated with the usage of cross-sectional self-reported, single-rater and same-survey data, PA research has heavily relied on this methodological approach, and still does so, for empirical theory testing (Jakobsen & Jensen, 2015). This gives us reason to re-examine the relationship between PSM and prosocial behavior.

We are cognizant of the warnings against the exaggeration of the threats posed by CMB (Spector, 2006) and against the avoidance of single-survey method in all circumstances (George and Pandey, 2017). George and Pandey (2017, p. 260) argue that some variables like judgments and feelings are "by their very nature, perceptual", and so the usage of self-reported surveys is an appropriate method of measurement for these variables. However, our variable of interest does not fall into that category and does, in fact, involve overt behavior. Spector (2006) proposes that rather than accepting the presence of CMB, alternative methods should be used to control for the source of the bias, citing the example of the usage of observational data in the presence of the threat of social desirability bias, which is precisely the strategy that we use in our study.

Furthermore, the multidimensional nature of PSM is still an unsettled issue. While there is a widespread support in the extant literature for the positive impact of PSM on individual prosocial behavior, consensus about which dimensions of PSM are more strongly linked with prosocial behavior is not in sight. We suspect that a differential understanding of what constitutes prosocial behavior across studies, resulting in measurement incongruence, may contribute to the inconsistencies in the findings of previous studies. While some researchers have operationalized prosocial behavior as financial donation and volunteering intentions,

other scholars have taken whistle-blowing behavior as their measure. An interesting take is Andersen and Serritzlew's (2012). Their novel operationalization is based on the rationale that while Danish physiotherapists receive the same fee for servicing disabled and ordinary clients, more time and efforts are invested in servicing disabled clients. This implies that physiotherapists who serve more disabled clients make a larger contribution toward the public good.

The different operationalizations and associated measurements of prosocial behavior in combination with the possible exposure to common-method bias may be the reason behind the contradictory evidence in the literature. For instance, Clerkin et al. (2009) associate prosocial behavior with the PSM dimension Compassion, whilst Esteve et al. (2016) report a stronger link of PSM with prosocial behavior when the Compassion dimension is excluded. Yet Andersen and Serritzlew (2012) provide evidence of a positive impact of the PSM dimension Commitment to the Public Interest (CPI) on Danish physiotherapists' prosocial behavior. Given the possible exposure to CMB in extant PSM work in combination with inconsistent evidence regarding PSM's dimensionality, further investigation of the link between PSM and prosocial behavior using a novel design with more precise measurement instruments is necessary. Clearly, the salience of prosocial behavior for (public) organizational performance (Podsakoff et al., 2000) warrants clarification of the role of PSM in influencing individual prosocial behavior.

In the current paper, we aim to provide a first step toward resolving this conundrum by designing and conducting two studies of prosocial behavior, one using self-reported measures of prosocial behavior and the other targeting an example of observed real-life prosocial behavior. Specifically, we decided to take a measure of prosocial behavior that is seen as a pure case of prosocial behavior (Masseret et al., 2008): blood donation. This has been used in numerous economic and sociological studies pertaining to prosocial behavior (see, for example,

Bénabou & Tirole, 2006; Stutzeret et al., 2011). Scholars regard blood donation as an "important expression of prosocial behavior in modern society" (Blackie & Cozzolino, 2011, p. 998). Hence, blood donation is frequently used by economists and sociologists in their attempts to understand the voluntary provision of public goods (Laceteraet al., 2012; Stutzeret et al., 2011). Of course, blood donation is not directly relevant for (public) organizations, but due to the costly valuation process involved in the donation process (Stutzeret et al., 2011), this manifestation of a prosocial deed is similar to types of prosocial behavior performed in the organizational context that require the investment of individual resources from the employee (Bolino & Grant, 2016).

Additionally, we run analyses for both PSM overall and the underlying dimensions. In so doing, by comparing the results from both studies and across PSM overall and the underlying dimensions, we provide further clarity with respect to the role of PSM in fostering prosocial behavior. Hence, our contribution is twofold. First, we examine the potential impact of CMB by comparing findings for self-reported vis-à-vis actual prosocial behavior. Second, we contribute to resolving the discrepancy between the results of previous studies regarding the dimensions of PSM that are claimed and found to act as an antecedent of prosocial behavior. Specifically, we conduct two quasi-experiments that differ in an important and crucial way with respect to their design and measurement. Both studies use questionnaires to measure individual PSM (and its dimensions), but the measurement of prosocial behavior differs. The first study utilizes self-reported (cross-sectional, single-rater and same-survey) measures of past prosocial behavior, in line with extant work. Conversely, the second study relies on an act of observed actual prosocial behavior displayed by the analyzed individuals in a real-life context. The two different research designs and measurement methods yield varying results, leading to different conclusions regarding the impact of (the dimensions of) PSM on prosocial behavior. We argue that these varied results have important implications for public sector

researchers measuring both their independent and dependent variables with the same (and single-rater) survey instrument. We will discuss how the results of our study highlight issues related to the measurement of PSM. Lastly, looking at the extant literature on prosocial behavior, we argue that making the distinction between different types of prosocial behavior can help in reconciling the differential results in the literature.

To avoid overstating the importance of our findings, we explicitly recognize the fact that the results of our studies are based on student samples, implying that the generalizability of these results to public sector employees may be limited. However, on the other hand, student samples tend to reduce the influence of noise, as well threats from endogeneity and sample selection biases (van Witteloostuijn, 2015). Moreover, student samples have been described as appropriate in studies focusing on fundamental human processes (Bello et al., 2009), as is common practice in much of the psychology literature. We believe that the examination of potential drivers of a prosocial behavior is a clear example of such fundamental human processes.

PSM AND PROSOCIAL BEHAVIOR

The concept of PSM was first introduced by Perry and Wise in 1990, who defined this construct as an "individual's predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations" (1990, p. 368). It was built on prior scholarly arguments that the motivations of individuals involved in the delivery of public services differ significantly from those working in private organizations (Perry, 1996). PSM offered an alternative to the rational theories of motivation based on self-interest (Moynihan & Pandey, 2007), and was embraced as an important contribution to the existing theories of human behavior in PA (Brewer, Selden, & Facer II, 2000). Since then, an impressive stream of work has emerged, with an abundance of empirical studies regarding the measures of PSM overall

and its dimensionality, as well as the antecedents and consequences of both PSM and its dimensions.

Initial theoretical PSM work drew a clear distinction between public and private sector employees in terms of motivations and intentions. Rainey and Steinbauer (1999) expanded the scope of PSM to be more inclusive, defining the concept as the "general altruistic motivation to serve the interests of a community of people, a state, a nation or humankind" (1999, p. 23). In so doing, they again emphasized the distinctive motivations of individuals engaged in the public sector to provide services that benefit others. However, what was unique about this definition was the allusion to the wider concept of altruism, which had not been done previously. The earlier definitions presented PSM as the unique domain of public sector personnel, and this restriction was now lifted by the newer conceptualization. This broader conception is echoed in the recent literature, which defines PSM as the "belief, values and attitudes that go beyond self-interest and organizational interest, that concern the interest of a larger political entity and that motivate individuals to act accordingly whenever appropriate" (Vandenabeele, 2007, p. 547). Throughout this process of an evolving conception of PSM, what has remained unchanged is the affirmation that PSM entails an individual motivation to engage in acts to benefit others, and society at large (Jensen & Vestergaard, 2017).

The four-dimensional PSM construct rests on co-existing rational, normative and affective motives of individuals (Perry & Wise, 1990), and is conceptualized as a formative construct with the dimensions "attraction to public making", "commitment to public interest", "compassion" and "self-sacrifice". Attraction to Policy Making (APM) reflects an individual's desire to participate in the policy formulation process. Engaging in the policy formulation process can be exciting and can bolster self-image, hence satisfying personal needs (Perry, 1996). This utility maximization by engaging in policy formulation provides the rational motivation for involvement in public service. Commitment to Public Interest (CPI) is borne

out of a sense of duty and obligation that is felt toward society at large, which represents the normative foundation of PSM. Another motivation to engage in public service stems from a sincere belief in the social importance of public programs (Perry & Wise, 1990). This affective component, based on individual emotional responses to the social context (Perry, 1996), is reflected in Compassion (COM) and Self-Sacrifice (SS).

The introduction of PSM also fueled debate regarding its implications for public sector organizations and the specific benefits accrued to public organizations due to a distinctly motivated workforce. As Ritz, Brewer, and Neumann (2016) note, a number of behavioral implications of PSM have been established as a result of two decades of international, multi-disciplinary, and multi-sector research on PSM (i.e., Clerkin et al., 2009; Esteve et al., 2015; Pandey et al., 2008). One behavioral manifestation tested repeatedly is the link of PSM with prosocial behavior, in different forms and shapes.

Rainey and Steinbauer's (1999) reference to PSM as an altruistic motivation led to the acknowledgement that individuals with high PSM are predisposed to act in a prosocial manner (Pandey et al., 2008) as, by definition, individuals with high PSM are "characterized by an ethic built on benevolence", and hence indulge in behaviors that benefit others (Houston, 2006, p. 68). Here one should take note of the fact that a specific behavioral measure is an incomplete reflection of a general attitude (Fazio, 1990). Nonetheless, gathering evidence regarding the impact of PSM on guiding individual behavior can be of considerable use to practitioners in managing behavioral outcomes in the public sector. Therefore, multiple scholarly attempts have been made to gauge the link between PSM and prosocial behavior.

To the best of our knowledge, the first such study was conducted by Brewer and Seldon (1998), who noted the lack of behavioral outcomes of PSM documented in literature, and hence proceeded to find evidence. They supplied "hard behavioral evidence" linking PSM with "an actual behavior that occurs in the public sector" by looking at whistle-blowing as a form of

prosocial behavior of public sector employees (Brewer & Selden, 1998, p. 414). They used archival data measuring self-reported whistle-blowing behavior and what they described as "PSM-related attitudes", namely the regard for public interest and job security. Their findings revealed that whistle-blowers are characterized by a lower regard for job security (implying a higher willingness to accept self-sacrifice) and a higher regard for the public interest. These measures are taken as an indicator for the presence of PSM. Without any doubt, this early study of the behavioral implications of PSM is commendable. However, no direct and explicit measurement of PSM was conducted, leaving room for further investigations into this relationship. Additionally, the proxies used in this study originated from archival data based on individual self-reported whistle-blowing behavior.

Although Brewer and Seldon conclude only that PSM is a cluster of attitudes that lead to prosocial behavior (1998, p. 422), their study is widely used to justify the assertion that PSM itself, and not the cluster of attitudes, is an antecedent of prosocial behavior. Houston (2006) employed a different approach and analyzed prosocial behavior of public sector employees in comparison with their counterparts employed in the private and non-profit sector. The results indicate a higher likelihood of individuals employed by government or government agencies to engage in volunteering, triggering the conclusion that "public service motivation is evident in the charitable acts of public administrators" (Houston, 2006, p. 82). Again, although individual PSM was not explicitly measured and employment in the public sector is regarded as an indication of higher PSM, the results of this study reporting higher self-reported donations of time and money by public sector employees have become a standard reference providing a testament of the positive link between PSM and prosocial behavior.

Taking an angle different from the above meso-level sector perspective, the micro-level organizational implications of PSM with respect to individual prosocial behavior have been examined by, for instance, Kim (2006) and Pandey et al. (2008). Both studies look at the impact

of PSM on the incidence of organizational citizenship behavior of public sector employees. Their findings are similar, as they both report a positive link between PSM and organizational citizenship behavior. Given that a one-dimensional measure of PSM was used in both studies, no specific dimension was singled out to be more strongly linked with this specific aspect of prosocial behavior. Both studies rely on self-reported, cross-sectional and single-rater measures with questionnaire items regarding both the dependent as well as the independent variables collected via the same survey instrument.

Clerkin et al. (2009) empirically test the link between PSM and donation behavior in a student sample. Their results reveal a significant positive relation of donating time and money with two dimensions of PSM: Compassion and what they refer to as Civic Duty. These findings correspond with the arguments developed in the PSM conceptualization literature, which purport that PSM predisposes individuals to act in a manner beneficial to others (Pandey et al., 2008; Rainey & Steinbauer, 1999). This study provided much needed empirical evidence of the relationship between PSM and prosocial behavior. However, the sample respondents were informed beforehand that the purpose of the study was to understand individual motivations for donating money or volunteering time, being asked to read information about a fictional organization and subsequently reveal their intent to donate a hypothetical sum of money or amount of time to this organization. In so doing, consistency and desirability concerns may have been induced among respondents (Batson & Powell, 2003; Podsakoff et al., 2003).

A unique way of looking at organizational prosocial behavior was employed by Andersen and Serritzlew (2012) by studying two types of patients serviced by Danish physiotherapists. A key strength of their design is that they use actual client data, rather than self-reported assessments. Since servicing disabled patients is more time-consuming for physiotherapists as compared to other patients, while receiving the same payment, a higher proportion of disabled patients serviced by a physiotherapist is regarded as higher prosocial

behavior. However, this type of prosocial behavior can be argued to fall in the category of role-prescribed prosocial behavior, as opposed to extra-role prosocial behavior (Katz, 1964). While extra-role prosocial behavior is not specified in the formal role requirements, role-prescribed prosocial behavior is part of the individual's formal role. The care-providing professions are considered good examples of jobs where helping and cooperating are considered as "legitimate dimensions of job performance" (Brief & Motowidlo, 1986, p. 712). Furthermore, Andersen and Serritzlew (2012) concede that the ethical code of the professional body governing the conduct of physiotherapists directs physiotherapists to cater to those in need, and to allocate a fair share of resources to those in need. Hence, this form of role-prescribed prosocial behavior, which is part of the individual's professional role, is very different from extra-role prosocial behavior that has been studied by a majority of scholars of prosocial behavior in the public sector. Perhaps, this is the reason why Commitment to the Public Interest and not Compassion, as hypothesized in earlier work (Wright & Grant, 2010), is linked with this specific type of prosocial behavior.

The most recent investigation into the relationship between PSM and prosocial behavior is Esteve et al.'s (2016) incentivized quasi-experimental lab design, utilizing the well-established public goods game. In line with previous studies, they find that individuals with higher PSM are more likely to act prosocially in the sense of investing more in the public good. Their findings show that the composite measure of PSM is significantly related with prosocial behavior, but that this relationship is further strengthened with the exclusion of Compassion from PSM. This contrasts with the results of Clerkin et al. (2009), who find empirical support for a positive relationship between Compassion and prosocial behavior. Moreover, Esteve et al. (2016) indicate that the prosocial behavior of high-PSM individuals is contingent on the prosocial behavior of others. Although this study relies on a solid and incentivized quasi-experimental design, their conceptualization of prosocial behavior has a few limitations.

According to Batson and Powell (2003), due to the problems of "demand characteristics, evaluation apprehension, social desirability, self-presentation, and reactive measures", the solicitation of intended responses while being presented with a hypothetical scenario, even when incentivized, is inadequate for the purpose of studying real-life prosocial behavior. Instead, an actual commitment to behavior is necessary (Batson & Powell, 2003, p. 479). Individual responses in a public goods game reflect hypothetical (albeit incentivized) and not actual situations faced by individuals, making the responses non-representative of "natural" behavior. This is the classic question regarding the external validity of findings reported in artificial lab studies (van Witteloostuijn, 2015).

STUDY 1 – TALKING THE TALK

Methods and Measures

Research Design. Study 1 adopts the cross-sectional, self-reported, single-rater and same-survey design that is standard in much of the PA literature and PSM work. The participants are undergraduate students in Business Administration enrolled in either the first, second or third year of study at a major Spanish university. The participants were administered a pen-and-paper questionnaire pertaining to their demographics, as well as the dependent and independent variables. Although participation in the survey study was voluntary, a few minutes of class time were dedicated to complete the questionnaire. Participants also signed a consent form before proceeding with the questionnaire. The questionnaires were filled in anonymously, and each participant was asked to generate a unique identifying code only known to her or him (this was needed for Study 2). The code was based on personal information, asking for the first two letters of the respondent mother's and father's first names, respectively, the participant's birth date, and the year of enrollment in the undergraduate program. The usage of a unique

code guaranteed anonymity to the participants, and hence reduced the risk of common-method bias (Podsakoff et al., 2003). Furthermore, the participants were informed that the data analysis would be performed using aggregated data in order to further decrease their identification concerns. Respondents were administered the English or the Spanish version of the questionnaire, depending on their program of enrollment. Participants were informed that the purpose of the research was to gather information about individual habits and personalities. No incentives were offered for completing the questionnaire.

Dependent Variable. In the extant literature, prosocial behavior is operationalized and measured in various ways, including blood donations, monetary gifts to charity, number of hours volunteered, contributions to public goods games, whistle-blowing behavior, and number of unpaid over-time hours worked. We use blood donation to the local blood bank as our measure of prosocial behavior. Study 1 operationalizes this as self-reported retrospective blood donation during the earlier blood donation drive at the university campus. The act of donating blood is a voluntary, intentional and extra-role act performed in order to benefit someone else, placing this act within the purview of the widely accepted definition of prosocial behavior (Eisenberg & Miller, 1987). Blood donation has also been used as a classic example of prosocial behavior in numerous prior studies, being well recognized as a prosocial act (i.e., Bénabou & Tirole, 2006; Lacetera & Macis 2010a; Lacetera & Macis 2010b; Houston 2006). Accordingly, the participants were asked in the questionnaire to indicate whether they had donated blood in the campus blood donation drive in the previous academic term.

Study 1 measures prosocial behavior with the blood donation behavior of an individual, an act in which some people are unable to partake due to certain personal characteristics and / or specific restrictions imposed by the blood collection entity. These restrictions include having traveled to certain countries in the past few years prior to blood donation, usage of certain medicines, a minimum body weight, and the like. Additionally, some individuals are

apprehensive of needles, making them highly unlikely to donate blood, notwithstanding their potential desire to help others. Those participants who had not donated blood were asked to indicate the reason for their decision to refrain from doing so. The respondents were given several options, which included "unable due to use of medication", "unable due to recent piercing / tattoo", and "unable due to travelling history". All these participants were excluded from the sample before proceeding with the data analysis, as their abstinence from donating blood would not adequately reflect their (lack of) desire to indulge in prosocial behavior. After removing these cases, the sample size was reduced from 671 to 395 respondents.

Explanatory Variables. A number of PSM scales circulate in the PA literature. For instance, both three-dimensional and four-dimensional scales have been validated and used in prior work. We employ the four-dimensional scale to be able to examine the relationship of prosocial behavior with each of the four theoretically identified dimensions of PSM. We took a 12-item PSM measure from a prior study (van Witteloostuijn et al., 2017), which we slightly modified by adapting the wording to undergraduate respondents. The responses were indicated on a seven-point Likert scale, ranging from "Strongly Disagree" to "Strongly Agree". The Cronbach's α of the 12-item measure is 0.83. The individual dimensions have reliability coefficients of 0.60, 0.74, 0.58 and 0.76 for Attraction to Policy-Making (APM), Commitment to Public Interest (CPI), Compassion (COM) and Self-Sacrifice (SS), respectively. While these values are not particularly high for APM and COM, they are broadly in line with the reliability estimates of PSM reported in previous studies (e.g., Jensen & Andersen, 2015; van Witteloostuijn et al., 2017).

Control Variables. In prior work, a few personal characteristics have been linked with blood donation in particular, and prosocial behavior in general. Religious affiliation has been related to higher prosocial behavior (Ahmed, 2009), and religious socialization has also been identified as an antecedent of PSM (Perry 1997). This extant work suggests that the religiosity

of the individual in general matters, and not so much any particular religion. Therefore, we coded individuals as religious (1) or not (0). As the questionnaires were administered in English or Spanish depending on the respondents' command over either language, this was also added to the control variables (with Spanish coded as 0, and English as 1). Additionally, gender was added as a control variable (female coded as 1, and male as 0). The descriptive statistics reveal that approximately 63% of the sample is composed of males as opposed to 37% females, and 60% of the respondents have a religious affiliation and 40% of the respondents do not affiliate themselves with any religion.

Results

According to the survey data, a total of 96 participants (24.30%) reported having donated blood, whereas 299 participants (75.70%) indicated not having donated blood in the previous academic term. The descriptive statistics and bivariate correlations of the variables are displayed in Table 1. Before running the statistical analysis to assess the relationship between PSM and self-reported blood donation behavior, a preliminary comparison of the two groups (donors vis-à-vis non-donors) was performed. The results suggest that the two groups differ significantly only in Compassion ($p < 0.01$) with individuals who report having donated blood, on average, scoring higher on Compassion. So, the results of this preliminary intuitive non-parametric bivariate analysis reveal that the two groups differ significantly with respect to motivation.

[Insert Table 1 about here]

To further analyze the data, the probit model using the maximum likelihood estimation is utilized as the binary nature of the dependent variable makes this the appropriate technique to test for our relationships (Aldrich & Nelson, 1984). The use of the probit model relaxes a number of assumptions necessary for OLS regression. The requirements of a large enough data

set and independent observations are met by our data set. Three separate models were estimated in order to test for the absence or presence of a relationship between PSM and prosocial behavior. Model 1 includes only the control variables to identify their explanatory power for prosocial behavior. In addition to these control variables, Model 2 incorporates the aggregate PSM measure, whereas Model 3 disaggregates PSM to discern the relationship of each separate dimension of PSM with prosocial behavior.

Although there is no measure corresponding to the R^2 of a traditional OLS model, there are a number of alternatives known as pseudo-R^2's that are reported for probit models (Hoetker, 2007). Based on the strength of the relationship of various pseudo-R^2s with the OLS-R^2, McKelvey and Zaviona's R^2 is seen as the most appropriate pseudo-R^2 for probit models (Veall & Zimmermann, 1996). Accordingly, we report the McKelvey and Zaviona's R^2 for each of the estimated probit models. All findings are provided in Table 2.

[Insert Table 2 about here]

Model 1 shows that gender is significantly linked with self-reported prosocial behavior. We test for a relationship of PSM with self-reported prosocial behavior in Model 2, in line with previous work that found a positive association between PSM and prosocial behavior (Brewer & Selden, 1998; Esteve et al., 2016; Houston, 2006). Interestingly, the results of Model 2 do not show support for this relationship. Hence, on this basis, we cannot conclude that the aggregate measure of PSM is significantly related to individual prosocial behavior, as self-reported retrospectively by our respondents.

Next, we disaggregate the PSM construct to analyze the impact of each dimension of PSM separately on self-reported prosocial behavior. We test for a positive relationship of each of the four dimensions of PSM with prosocial behavior, as self-reported retrospectively by our respondents. On the one hand, we find no evidence for a relationship of Attraction to Policy Making, Commitment to Public Interest, and Self-Sacrifice with prosocial behavior. On the

other hand, however, the regression results show a significantly positive relationship of Compassion ($p < 0.01$) with prosocial behavior. Hence, overall, the results provide partial support for a relationship between PSM and self-reported prosocial behavior, particularly for PSM's Compassion dimension.

Discussion

Kim (2006) and Pandey et al. (2008) reported evidence to support the link between the aggregate measure of PSM with prosocial behavior, albeit operationalized as organizational citizenship behavior. No such support was received in our Model 2. Esteve et al. (2016) also found a positive relationship between PSM and prosocial behavior in a computer lab setting. However, their results differ markedly from our Study 1. Their aggregate measure of PSM is significantly related with individual prosocial behavior, but this relationship is further strengthened with the omission of Compassion from the aggregated PSM measure. Conversely, in Model 3, we find support for a positive relationship between only Compassion and prosocial behavior. This corresponds to the findings of Clerkin et al. (2009), who also revealed a positive relationship between prosocial behavior and Compassion. However, they also report a significantly positive relationship with Commitment to Public Interest, as well as a significantly negative relationship with Attraction to Policy Making.

STUDY 2 – WALKING THE WALK

Method and Measures

The participants in Study 2 were the same as those in Study 1, hence yielding the same descriptive information and reliability estimates relating to the control and independent variables as reported above (see Table 1). In addition, the same self-reported survey measure of PSM (our central independent variable) was utilized across Study 1 and Study 2. The point

of departure of Study 2 vis-à-vis Study 1 is the measure of prosocial behavior. In order to keep the findings across both studies comparable, the operationalization of prosocial behavior is again done using blood donation. However, Study 2's measure follows from observing the actual blood donations made by the participants. This implies two crucial design differences of Study 2 versus Study 1. First, the dependent variable is measured at a different point in time from the measurement of the independent variable. Second, we use another rater and source for measuring prosocial behavior, which is now actual rather than self-reported. Both design elements imply that we avoid important roots of common-method bias.

The blood bank responsible for running the on-campus campaign was contacted at an earlier date and their explicit permission to observe actual blood donation behavior was received. As always, the date of the blood donation drive was decided in coordination with the university to ensure that no other student event was organized on the same day and that classes were planned as per normal schedule. Additionally, this event was more than four months after the previous blood donation drive, making the participants eligible to donate once again. This gave the students maximum opportunity to take part in the blood donation drive. On the day of the blood donation drive, one medical doctor, three nurses and two staff members of the blood bank were present to examine the donors, carry out the donation procedure, and facilitate the donors.

As the respondents' data pertaining to the independent variable(s) had been collected earlier in the context of Study 1, only observing blood donation behavior was required for Study 2. In order to avoid invoking desirability concerns, the participants were initially unaware of the observation of their behavior. It was only once the participants approached the blood donation stand and indicated their intent to donate blood that they were asked: (a) the permission to be included in Study 2, and (b) to recall the unique identifier generated by them whilst answering the questionnaire in Study 1. This was done by a single researcher during the

time the respondents were queued in line to donate blood. Since this was done only after they had revealed their intention to donate blood, we deliberately avoided any impact relating to desirability concerns that might have been triggered would they have been aware of the observation of their behavior.

Results

Our observation of blood donations shows that 45 (11.39%) out of a total of 395 participants actually donated blood in this blood donation drive. As in Study 1, a preliminary comparison of the two groups (donors and non-donors) was performed to examine if the two groups significantly differ. The mean comparisons reveal that the two groups differ significantly only with respect to Commitment to Public Interest ($p < 0.05$). The individuals who were observed to have donated blood scored, on average, higher on Commitment to Public Interest. The absence of any further between-group differences goes against the intuitive bivariate findings in Study 2. As in Study 1, to further analyze the data, we again estimated three separate probit models with the observed blood donation behavior. Model 4 only includes the control variables. In Model 5, we add the aggregate PSM measure, and Model 6 uses the disaggregated measures of PSM to identify potential links of actual prosocial behavior with each dimension. As in Study 1, McKelvey and Zaviona's R^2's are reported. All results are reported in Tables 3.

[Insert Table 3about here]

In Model 4, all the control variables were regressed on actual prosocial behavior, whereas the aggregate measure of PSM was added to the regression in Model 5. In line with Study 1, the estimates reveal no significant findings with respect to the aggregate measure of PSM and blood donation behavior, albeit now actual rather than self-reported. In Model 6, each of the dimensions of PSM is regressed on actual blood donation behavior. In contrast with Study 1 with self-reported prosocial behavior as the dependent variable, Study 2's results show that

none of the dimensions is significantly related to actual blood donation behavior. This presents a noteworthy difference in results when compared to the self-disclosed blood donations used in Study 1. Note that we ran robustness analyses with rare events logistic regression (Tomz, King, & Zeng, 1999), which is recommended for samples with less than 5% positive values for the dependent variable (this percentage is about 11% in our case, and hence above this threshold). The pattern of results is equal to what we report in Table 3, with a few of the coefficients being slightly larger (available upon request).

Discussion

The (lagged) direct observation of actual prosocial behavior was utilized in Study 2 in order to minimize the threat to validity as posed by common-method bias. The results indicate meaningful non-findings or nulls (Meyer et al., 2017) that, we believe, are important as these do present evidence that goes against prior empirical work purporting a positive link between PSM and prosocial behavior. Our Study 2 reveals that observed prosocial behavior has no significant relationship with the aggregate PSM measure, nor with any of its underlying dimensions. These non-findings may point toward a possible overestimation of PSM's relationship with prosocial behavior, being an artefact of the biases associated with the dominant use of self-reported measures of the dependent variable in the context of a cross-sectional single-rater and same-survey design. As a result, the published findings may, to a large (but unknown) degree, be false positives (van Witteloostuijn, 2016). We further discuss this issue, including the possible causes and implications for future research, in our general discussion and conclusion section.

When presenting non-findings in what is essentially an extended replication study, it is important to see if the study has adequate statistical power to able to reject the null hypothesis (Walker et al., 2018). An established convention for acceptable statistical power is 0.80

(Cohen, 1992). Using Stata power calculator, and setting the alpha level at 0.05, we find that Study 1 has a power of 0.72, which is very close to the value proposed by Cohen. As for Study 2, this is somehow underpowered at 0.58, as smaller sample sizes have a lower likelihood of detecting a statistically significant relationship (Balkin & Sheperis, 2011) (donor n = 45 in Study 2 compared to donor n = 96 in Study 1). This indicates the possibility of committing a Type II error, which means that the statistical test may fail to detect a relationship that does actually exist. This signals that the results of this Study 2 should be interpreted with caution.

Having said that, to further probe into this issue, we also calculated the effect sizes to compare standardized effect sizes for the two studies, a suitable measure for which is the Cohen's *d*. We also plotted the mean and standard deviations of the donors and non-donors of the two studies in Figures 1 and 2, respectively. We see a decrease in the Cohen's *d* from 0.380 from Study 1 to 0.207 in Study 2. This points to the possibility that even if a relationship between PSM and prosocial behavior would exist, it is weaker when an observable measure of prosocial behavior is used.

[Insert Figures 1 & 2 about here]

DISCUSSION AND CONCLUSION

Although our two studies examine the very same relationship, they yield meaningful differences in the key result: the significantly positive association of PSM's Compassion in Study 1 is no longer significant in Study 2 (which gives no PSM-related significant results at all). We suspect that a number of reasons could be responsible for this. One possible reason for this is the different measurement methods across the two studies. Study 1 employed cross-sectional self-reported (single-rater and same-survey) measures for all the variables, including the predictor as well as the criterion, as done in most prior studies testing the relationship

between PSM and prosocial behavior, whilst Study 2 adopts a lagged, observational and other-source measure of prosocial behavior.

True, reliance on self-reported measures for the independent as well as the dependent variables is not always discouraged (Conway & Lance, 2010), and scholars warn against the over-estimation of CMV as this bias does not manifest in all single-method and self-reported surveys (Spector, 2006; George & Pandey, 2017). But certain settings and variables are more prone to measurement bias in self-reported data than others. This design is particularly problematic when the common source of bias is shared by the two measured variables. In our study, where the constructs measured through self-reported survey scales are PSM as the independent and prosocial behavior as the dependent, the common source of bias is relevant due to social desirability and response consistency concerns, which both bias the responses to the items measuring the pair of central constructs. Moreover, the theory here involves simple main effect hypotheses, and not complicated mediation and / or moderation relationships, making CMV more likely (Siemsen, Roth, & Oliveira, 2010).

The bias introduced due to measurement error poses a risk to the results of Study 1, as "measurement error threatens the validity of the conclusions" (Podsakoff et al., 2003, p. 879). The systematic variance due to the measurement method, or common-method variance (CMV), is a challenge in behavioral research, potentially indicating a relationship between variables where none exists (Podsakoff et al., 2003). Hence, CMV may produce false positives (van Witteloostuijn, 2016). The positive relationship between the Compassion dimension of PSM and prosocial behavior in Study 1 may well be an artefact due to CMV, as both variables are prone to common-source bias. Our suspicion is that the basis for this bias lies in the response consistency and social desirability motives highlighted by Podsakoff et al. (2003). The response consistency motive implies that respondents' attempt to seem consistent and rational in their answers, thus "creating" a relationship that does not exist in reality. The social

desirability motive induces individuals to present a more favorable image of themselves, resulting in the potential indication of spurious relationships. The nature of the PSM construct as well as that of prosocial behavior make them highly susceptible to both these biases.

A suggested way to reduce common-method variance is the use of a self-reported measure for either one of the key variables (independent or dependent), and employing another measuring technique for the other variable (Spector, 2006; for other possible remedies, please consult Chang et al., 2010). This research strategy was adopted in the design elements of Study 2, which relies on linking a self-reported measure of PSM with observable actual prosocial behavior, effectively reducing common-method variance to zero. Of course, as any measure, this measurement technique of observing behavior may be prone to other biases, but what is critical here is that variance due to sourcing data from the same rater is eliminated from Study 2. Hence, we can attribute higher validity to the findings of Study 2 vis-à-vis Study 1, as both studies shared all other design elements. Of course, we concede that Study 2 has lower statistical power to detect our relationship of interest. However, the decrease in the effect size across the two studies lends further support to our assertion of a reduction of the impact of Compassion on blood donation behavior when observed behavior is used.

We believe that this conclusion has wider ramifications for PA at large. Indeed, Meier and O'Toole (2013) acknowledge the potentially high frequency of spurious results published in the PA literature. Moreover, "although estimates of the strength of the impact of common method biases vary, their average level is quite substantial" (Podsakoff et al., 2003, p. 897). Correspondingly, in a recent study examining the impact of the usage of subjective data for research, Jakobsen and Jensen (2015) also found that the significant relationships indicated by relying on subjective data disappeared when objective data was employed to measure the same behavior. This implies that PA would benefit from designs that avoid CMV (Chang et al.,

2010), as well as reporting practices that involve (comparison of) effect sizes (Meyer et al., 2017) in tandem with systematic replication (Walker et al., 2018).

Despite the large downsides associated with the use of self-reported data, there has been an over-reliance on single-rater and same-survey data in the PA literature (Favero & Bullock, 2015). This can be clearly seen in our analysis of prior work that sought to examine the foundation of the widely held belief that PSM serves as an antecedent of prosocial behavior. As we extensively argued above, the systematic measurement error due to the methods employed in past research is not unlikely to have led to an inflation of the estimated strength of the true relationship between PSM and prosocial behavior. Of course, we are not the first to argue that "how we measure variables matters" (Favero & Bullock, 2015, p. 303), but this advice has not been heeded; a large portion of PA's empirical literature still utilizes self-reported data where the independent and the dependent variables are both collected from the same respondent (Jakobsen & Jensen, 2015). In future work, we hope to see PA research move away from the dominance of the single-rater – same-survey design, adopting other designs next to the survey-only ones.

Another noteworthy aspect of existing research on prosocial behavior is that much of the literature has treated prosocial behavior as a homogenous interchangeable group of behaviors. In fact, prosocial behavior is a behavioral category entailing different types of behavior. For instance, management scholars have distinguished between two fundamentally different types of prosocial behavior in organizational settings: prosocial behavior targeted toward a specific person, on the one hand, and prosocial behavior targeted toward an organization or larger entity, on the other hand (Organ, 1997; Williams & Anderson, 1991). Moreover, these different types of prosocial behavior are also triggered by different underlying emotional and psychological mechanisms (McNeely & Meglino, 1994). Similarly, in their review of literature on prosocial behavior, Penner et al. (2005) conclude that the antecedents

and facilitating mechanisms of prosocial behavior differ depending on context: i.e., whether the behavior is performed within a dyad or in the context of a larger group or organization.

In the PA literature, Kim (2006) and Pandey, Wright, and Moynihan (2008) emphasize the importance of this distinction, but these studies are the exception rather than the norm. Making this demarcation in the study of prosocial behavior in the public sector will indeed lend clarity as to the antecedents of various types of prosocial behavior. This may also explain the variation in the results of previous studies. Blood donation is a specific instance of prosocial behavior directed at society, and not at a specific person. This differs significantly from the decision made by physiotherapists to treat disabled patients, or donations to charity and whistle-blowing behavior. Hence, a clearer demarcation of the type of prosocial behavior and its link with the dimensions of PSM could further contribute to reconciling the divergent results of past PA research.

Another concern shared by scholars relates to the measurement of PSM. Using experimental survey research, Kim and Kim (2016) assess the bias induced in the measurement of PSM using survey methodology, and point out that the PSM dimensions of Compassion, Self-Sacrifice and Commitment to Public Interest are especially prone to social desirability concerns due to their ethical and normative associations. This raises the fundamental question of the suitability of the measurement techniques used so far to measure PSM. For instance, scholars in other management disciplines have demarcated the two types of motives for individual action: explicit and implicit motives. Explicit motives are consciously held, and so can be easily measured using self-reports; however, the same cannot be said of implicit motives that operate at a sub-conscious level (Slabbinck et al., 2018). As individuals are not fully aware of their implicit motives, indirect measurement of these motives is required. Marvel and Resh (2018) have recently presented an implicit measure of public service motivation, and recommend its use to supplement traditional survey measures of PSM. Future PSM scholars

may consider the suitability of using such implicit measures for obtaining richer proxies of PSM and for evaluating its true impact on individual outcomes.

We acknowledge that, just like all empirical examinations, our pair of studies too have certain limitations. We have chosen blood donation as our dependent variable, to capture the individual's predisposition to act prosocially. While this measure has been widely used in previous studies (Bénabou & Tirole, 2006; Lacetera & Macis, 2010a; 2010b; Houston, 2006), blood donation is one specific type of prosocial act. Whether our results apply to other prosocial behaviors remains to be tested. Furthermore, we acknowledge the different statistical power of the two studies. Due to the relatively large number of individuals that could not donate blood in Study 2, its statistical power is low. Hence, we cannot claim to have provided clear evidence of the non-existence of the relationship between PSM and prosocial behavior, but only an indication that further examination of this relationship is needed. In addition, Study 2's longitudinal design implies that we were unable to keep track of the students present on campus on any given day, which may have resulted in attrition from our Study's 1 sample in the second study. Lastly, the reliance on a student sample for our studies exposes our analysis to external validity concerns, which means that the inferences from this study may not be generalizable to other populations (Shadish, Cook & Campbell, 2002). This indicates that further behavioral testing of this relationship using better measures and other (different and larger) samples is warranted in order to provide more substantial evidence for the existence (or non-existence) of this relationship. Therefore, without any doubt, our study cannot be but a first step toward the unraveling of the "true" relationship between PSM and prosocial behavior, by using designs that are not plagued by a high likelihood of common-method bias.

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Tables and Figures:

Table 1

Descriptive statistics and bivariate correlations Study 1 and Study 2

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
Blood donation reported	.24	.43									
Blood Donation observed	.11	.32	.21*								
PSM	4.56	.85	.06	.08							
PSM_APM	5.07	1.11	.04	.04	.70*						
PSM_CPI	4.24	1.20	.01	.10	.82*	.46*					
PSM_COM	4.80	1.04	.16*	.07	.71*	.32*	.42*				
PSM_SS	4.14	1.17	-.03	.04	.79*	.35*	.58*	.45*			
Gender	.36	.48	.14*	.08	.06	-.09	.10	.16*	.01		
Religious	.59	.49	-.03	-.12	.03	-.05	.06	.01	.05	.05	
Language	.29	.45	-.08	.02	-.03	-.03	.07	-.15*	.02	-.09	.07

Note: *$p \leq .01$

Table 2

Regression analysis for self-reported blood donations Study 1

	Model 1	Model 2	Model 3
	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)
Gender	.402 (0.146)***	.395 (0.147)***	.354 (0.153)**
Religious	-.082 (0.146)	-.086 (0.146)	.066 (0.149)
Language	-.180 (0.167)	-.178 (0.167)	-.074 (0.173)
PSM		.077 (0.084)	
PSM_APM			.043 (0.078)
PSM_CPI			-.036 (0.082)
PSM_COM			.282 (0.089)***
PSM_SS			-.131 (0.083)
McKelvey & Zavoina R^2	.046	.051	.106
n	395	395	395

Note: *$p \leq .10$; ** $p \leq .05$; and ***$p \leq .01$. Non-donor $n = 299$, donor $n = 96$

Table 3

Regression analysis for observed blood donations Study 2

	Model 4	Model 5	Model 6
	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)
Gender	.339 (.180)*	.339 (.180)*	.308 (.186)*
Religious	-.454 (.180)**	-.454 (.180)**	-.466 (.181)***
Language	.063 (.201)	.063 (.201)	.050 (.206)
PSM		.147 (.107)	
PSM_APM			-.044 (.096)
PSM_CPI			-.071 (.101)
PSM_COM			.065 (.105)
PSM_SS			.048 (.010)
McKelvey & Zavoina R^2	.066	.082	.088
n	395	395	395

Note: *$p \leq .10$; ** $p \leq .05$; and ***$p \leq .01$. Non-donor $n = 350$, donor $n = 45$

Figure 1

Mean comparison of donors and non-donors in Study 1

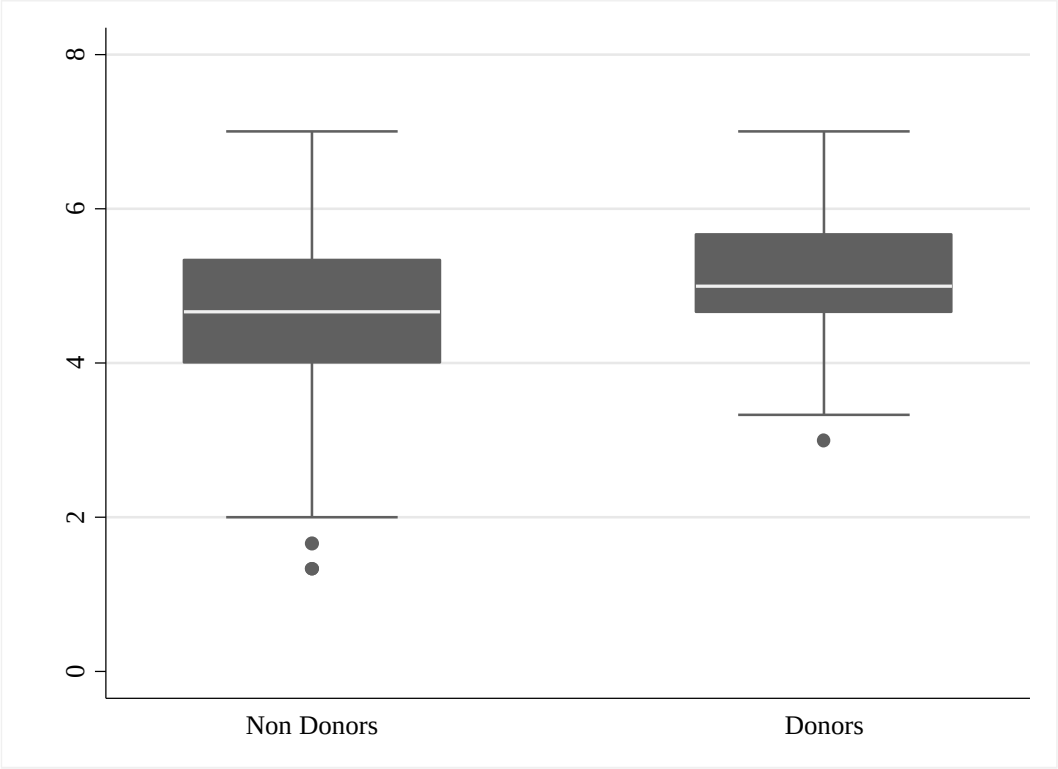

Figure 2

Mean comparison of donors and non-donors in Study 2