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The tick-tock of time: public service motivation and temporal motivation theory

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*****This is an early draft, please do not quote without the authors consent*****

Introduction

Public service motivation is based upon the concept of serving society and the public interest (Perry and Wise 1990; Brewer and Selden 1998; Vandenabeele 2008; Schott, van Kleef, and Steen 2014; Ripoll 2019).This definition enables researchers to examine mechanisms that could explain why PSM leads to certain behavioural outcomes. In a recent review, Ritz et al. (2016) examined more than 25 years of PSM research and found several studies that demonstrate that PSM promotes both positive and negative behavioural outcomes (e.g. turnover intentions or individual performance). Although evidence to test these links mainly comes from surveys (Ritz et al., 2016), there are also recent experimental studies demonstrating such relationships (e.g. Coursey et al., 2012; Bellé, 2013; Esteve et al., 2015). Thus, from an empirical perspective, PSM does play a role in predicting behaviours. However, understanding the decision-making processes that lead to behavioural outcomes remains understudied. This is not only important in order to develop sophisticated causal models between PSM and certain outcomes, but also to advance our understanding of the applied utility of PSM.

In order to dig deeper into causal models of PSM, it is necessary to further analyse the definition of PSM itself. This allows us to understand the importance of values when predicting the behavioural outcomes of PSM. However, as several motivational theories have shown, behaviour is not only the product of weighing different values. Other factors can also impact the likelihood of behaving in one or another way. An example of an additional component in linking motivation to behaviour is how time horizons influence the decision to act (Sonnentag 2012). To account for variations in individuals' preferences across time, researchers use the hyperbolic discounting hypothesis, which hypothesises that people tend to overestimate the present and underestimate the future (Steel and König 2006; Ainslie and Haslam 1992). A direct implication of this idea is that individual actions can be explained by accounting for the value of each action and their place in a temporal continuum. However, they also argue that time and value are still not enough to predict behaviour. As a result of this, temporal motivation theory

(TMT) combines previous theories of motivation such as picoeconomics and expectancy theory to provide an accurate explanation of why behaviour occurs (Steel and König 2006). In particular, it introduces the concept of expectancy, together with value and time, to explain motivations for certain behaviours. Applying this theory to examine the decision-making processes of PSM, we ask: are actions of individuals with high levels of PSM affected by the value associated to each action, by time, and by expectancy of outcomes? And, perhaps more importantly, how can these factors be explained using PSM theory?

In order to answer this question, this article first reviews the definition and conceptualization of PSM. After this, the theory of temporal motivation (TMT) is presented as a framework of analysis. Then, PSM is embedded into this framework and a set of propositions emerge to understand the effect of PSM on certain behavioural outcomes. Next, a study to test the first proposition is presented along with results from this study. Finally, we discuss these results alongside the theoretical and practical contributions of this research.

Theoretical framework

PSM

Conceptualization

The concept of public service motivation stems from the idea of a particular type of motivation to give back society that is heavily concentrated within public sector professions (Perry and Wise 1990). Although PSM has a variety of different definitions, all are based upon Perry and Wise's concept of "an individual's predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations" (Perry and Wise 1990, 368), and focus on the idea of a 'predisposition' towards serving the public interest (or society) (Vandenabeele 2008; Schott, van Kleef, and Steen 2014; Wright, Christensen, and Pandey 2013). While PSM is traditionally thought of as a type of motivation only relevant for the public sector, it is necessary to distinguish PSM from public *sector* motivation, which is a type of motivation that is solely within public sector organisations. (c.f Brewer and Selden 1998). PSM transcends this (Vandenabeele 2007). In fact, theorists have argued that PSM itself includes other types of public service-oriented institutions (i.e. private and third sector organizations) and even mankind at a whole (Moynihan and Pandey 2007;

Vandenabeele 2007; Steen 2008). This means that it can manifest in a variety of different social and institutional circumstances and across a general population. Thus, PSM is based upon specific types of behaviour exhibited by people regardless of sector (Brewer and Selden 1998).

Apart from public sector motivation, other concepts such as prosocial motivation or prosocial behaviour have been confounded with PSM because of their similarities. However, according to Schott et al. (Schott et al. 2019) PSM has two unique aspects that differentiate it from the other motivation theories. First, since the focus of PSM is on the intention or motive to develop certain attitudes or behaviours, prosocial behaviours are possible outcomes of it (Schott et al. 2019). Second, considering the target audience of the intention or motivation, PSM is an other-oriented motivation mainly aimed to benefit the society at large or unidentified beneficiaries (Schott et al. 2019). In the words of Vandenabeele et al. (2018) "PSM is a particular instance of prosocial motivation, in that it is mainly directed at society at large or, at least, unidentified beneficiaries" (265).

PSM is multidimensional in nature, comprising of four 'pillars' related to a person's "attraction to public service", "commitment to the public interest", "compassion", and "self-sacrifice" (Kim et al. 2012). It is argued that a person's PSM can be derived from a compilation of these four pillars. Due to the variation in focus of each of the pillars, many scholars suggest studying each dimension separately as they act differently in terms of their outcomes(Andersen and Serritzlew 2012). However, a 'global PSM' score is also often used to focus on the core component of PSM, which is to serve society or the public interest (Wright, Christensen, and Pandey 2013; Vandenabeele and Penning de Vries 2016; Schott and Ritz 2017; Kim 2017). Hence, a global measure of PSM focuses more on estimating the overall motivation to serve the public interest, than it does on the motives and dimensions underlying this motivation (Wright, Christensen, and Pandey 2013; Vandenabeele and Penning de Vries 2016). As such, we take the approach of some PSM researchers (Schott and Ritz 2017), and take a unidimensional approach because of our desire to focus on the core component of PSM.

Many scholars have argued that PSM develops from the basis of identity development (Breaugh, Ritz, & Alfes, 2017; Perry & Vandenabeele, 2008; Ripoll, 2019; Ripoll & Breaugh, 2019; Schott et al., 2014; Vandenabeele, 2007; Vandenabeele & Breaugh, n.d.forthcoming). Based on the principles of self-determination theory (Ryan and Deci

2000), a social identity, such as PSM, is able to promote behaviours in line with institutional logics. If these logics have been internalized, public service motivated individuals will be likely to self-regulate their behaviour in line with them. By contrast, if the internalization does not take place, behaviours in line with institutional logics will be guided by feelings of pressure, shame or guilt which may impact their behavioural choices (Ripoll, 2019; Vandenabeele & Breaugh, forthcoming). This identity argument also helps to explain pro social behaviours at work and in the public square that have been linked to PSM.

PSM and behavioural outcomes

The behavioural implications PSM was stipulated from early PSM researchers such as Perry and Wise (1990), who argued that PSM is linked to behavioural outcomes such as performance, job and sector choice, and citizenship behaviour. In line with a recent review of PSM research, this has generally been the case, with PSM being positively associated to all of these outcomes (Ritz, Brewer, and Neumann 2016). However, these results are mostly based one research method (survey data), which can limit our understanding of the topic at hand due to endogeneity and causality constraints. Fortunately, the recent rise in interest in experimental methods and longitudinal studies provides a unique opportunity to examine the behavioural implications of PSM even further. In fact, some scholars already provided initial experimental evidence. For example, following students into their careers, Wright et al. (2017), found that PSM could predict students sector choice three years after their graduation, while Coursey et al. (2012) found that PSM is liked to high levels of volunteering, Esteve et al (2015) showed evidence of increased types of collaboration among individuals with high PSM, and Belle (2013) showed that PSM enhanced the performance of Italian nurses when exposed to two different performance conditions.

While these studies are able to establish a link between PSM and specific types of behavioural outcomes, the underlying decision-making and motivational processes in which PSM is linked to behaviour is far less understood. In this paper we propose a means of understanding this link. As previously stated, PSM can be defined as the motivation to serve the public interest or society at large. However, this definition does not explain the motivational processes in which this occurs. In the following section we propose a means in which to do so by first exploring the link between motivation and behaviour, and then presenting TMT as a framework of study.

Motivational processes and behaviour: the case of temporal motivation theory

Fields such as economics, psychology, sociology or human resources management share a common desire to understand why people behave in one way or another. Because motivation refers to the forces that energize, direct and sustain behaviour (Perry and Porter 1982), it is the pillar from which these theories develop (e.g. need theory, picoeconomics or expectancy theory). However, each field has its own interpretation of the motivational processes that lead to behavioural outcomes. TMT arose from a growing desire to integrate various types of motivation theory in order to better understand the complexities of human behaviour. Developed by Steel and König (2006), TMT combines the core elements of four well-established theories of motivation: picoeconomics(Ainslie 1992; Ainslie and Haslam 1992), expectancy theory (Vroom 1964), cumulative prospect theory (Tversky and Kahneman 1992) and need theory (Murray 1938). According to Steel and König (2006), "TMT indicates that motivation can be understood by the effects of expectancy and value, weakened by delay, with differences for rewards and losses" (pg. 897). A simplified formulation of temporal motivation theory developed by Steel at al. (2018) stresses that the motivation to do a certain behaviour comes from three interconnected sources: the *value* of a task, the *time* horizons related to the task and the *expectancy* of achieving the task. While heavily used to understand procrastination behaviour, TMT can also be used to understand a variety of different motivational behaviours when time is an important element under consideration.

The first pillar of TMT theory is value. Within this context, values are defined as how much satisfaction an outcome provides (Steel and König 2006). Both the object and the degree of satisfaction matter in how a value is assessed. Hence, motivation increases if there is a desired reward or outcome. For example, a maths teacher will be more motivated to help one student with difficulties, than supervising the work of an excellent one (i.e. focus). She would also have a stronger desire to provide extra help to 10 students with math difficulties rather than just one (i.e. degree).

The second pillar of TMT theory is time. It refers to the idea that when an event is temporally closer, it generates a greater motivational influence compared to an event in the distant future. However, this can be influenced by a person's sensitivity to delay or impulsiveness and future orientation (Steel and König 2006; Monterosso and Ainslie 1999). To account for variations in individuals' preferences across time, researchers use

the hyperbolic discounting hypothesis. This hypothesis reasons that when a person is faced with deciding on which tasks to complete, they tend to overestimate the value of the present goals and underestimate the value future goals (Ainslie and Haslam 1992; Steel and König 2006), even if the future goals provide a more beneficial outcome. As a result of this, people tend to perceive tasks with a longer delay and their outcomes to be less valuable. However, this is dependent on a person's own sensitivity to delay or impulsiveness, which can be broadly defined as the "tendency to act spontaneously and without deliberation" (Carver 2005, 313). Consequently, impulsive individuals are more motivated by proximity (Steel and König 2006). For example, the maths teacher may be more motivated provide a student with extra help today, than to prepare the needed material to help 10 students in the following week. Nonetheless, if she is not impulsive at all, she would be very likely to pursue the long-term goal.

Third, expectancy is closely related to the idea of self-efficacy (Bandura 1977; Steel and König 2006). It refers to the perceived likelihood an event will occur and/or to the perceived probability of being able to produce an outcome. Thus, if people are confident in acquiring a reward or outcome, motivation increases. For example, a student may approach a maths teacher to ask for help with a geography problem. Even if the maths teacher would like to help this student, she may lack the abilities to do so, and would therefore be less motivated to help.

TMT can be useful to explain the behavioural consequences of PSM because it offers a framework to explore realistic and complex behavioural situations by focusing on the value of each action, its place in the temporal continuum, and the likelihood of doing it.

These three components can be modelled in the following equation:

$$Utility = \frac{Expectancy * Value}{1 + Impulsiveness * Delay}$$

Expectancy refers to the probability of an even to occur or being produced. Value refers to how valuable the event is to the person. Delay refers to the place of the event in the temporal continuum. Impulsiveness refers to the sensitivity of this delay to an individual. The constant 1 avoids the equation approaching infinity when delay is zero. In sum, motivation increases when individuals are confident of acquiring or producing (i.e. expectancy) a desired outcome (i.e. value). By contrast, it is reduced when the event is far in the temporal continuum (i.e., delay) and when individuals are sensitive to

delays (i.e., impulsiveness). In the following section, we connect both streams of research to explain the expected outcomes of public service motivated individuals.

PSM and TMT

This section will attempt to connect the three components of TMT theory with PSM. First, according to TMT, an individuals' motivation to do a task varies depending on the perceived value of that task. Thus, individuals are more task motivated when the task is valuable to them. This is in line with Shamir (1991), who argues that values need to be taken into consideration by motivation theorists, which is underscored by Perry (2000). According to Perry (2000) and Perry and Vandenabeele (2008), values are an important component in understanding PSM as a form of motivation, and it's link to behavioural outcomes. This leads one to the following question: what sorts of tasks are valuable for public service motivated individuals? To answer this question, it is necessary to look at the values outlined in the definition of PSM. As explained above, scholars argue that PSM is a pro-social motivation oriented to serve unidentified beneficiaries or the society at large (Schott et al. 2019; Vandenabeele, Ritz, and Neumann 2018). This shows a will to serve society. As a result of this, a task with an end potential of improving society will be perceived as highly valuable. Therefore, when a task is associated with serving the society, a person with high levels of PSM is more likely to be motivated to do this task. As such, we propose that:

Proposition 1: If a task is oriented to serve the society, public service motivated individuals will be more motivated to do this task.

Second, examining the concept of time, PSM has been argued to be a future-focused type of motivation because of it focuses not only on serving society, but also on the welfare of future generations (Andrews 2016; Breaugh, Ritz, and Alfes 2017; Schott et al. 2019). This means that the motives that drive PSM are more strongly associated with the outcome of these tasks. The concept of time in TMT varies from the PSM conception primarily because TMT theory is heavily based on the concept of time at the task level, while PSM theorists have focused on time at the outcome level due to its focus on improving society. Nonetheless, PSM should be studied at the task level when the culmination of these tasks (i.e. the end goal) is to serve or benefit society due to individual tasks being associated with proximal goals (Simons et al. 2004). However,

there is a lack of theoretical grounding to establish this, and so we attempt to do this below.

Hyperbolic discounting theory argues that time delay 'discounts' the value of a particular outcome. However, apart from delay, there is also the sensitivity of this delay (Steel and König 2006). In effect, the more impulsive a person is, the more vulnerable they may be to hyperbolic discounting and therefore less likely to do tasks with delayed outcomes (Steel and König 2006). Low sensitivity to delay requires impulse control, which is similar to the concept of conscientiousness from the big five personality traits (see Roberts et al. 2012). The literature that links PSM to this particular trait is scarce and the limited results are mixed. One article found no relationship between PSM and conscientiousness (Esteve et al 2015), while another one showed a negative correlational association between conscientiousness and the affective motives (compassion and self-sacrifice) of PSM (Van Witteloostuijn, Esteve, and Boyne 2017). This inconclusively would suggest a very weak link between the two concepts.

Therefore, in order to provide a more concrete link between time delay and PSM it is necessary to examine additional theoretical frameworks that take into consideration the core of PSM, notably, values. First, the concept of valence (the importance of an outcome to a person) can be linked to values and motivations, which can lend itself to delayed gratification (Burdbar Khan and Nisar Sheikh 2012). As a result, if a reward for a particular behaviour is delayed, but aligned with values, then a person is more likely to undertake this. Secondly, the concept of 'future time perspective' (de Volder and Lens 1982), or the ability to anticipate future goals in the present state, is also useful for understanding time delay and PSM. This future time perspective can be long or short. People with longer time perspectives also have longer time horizons for rewards related to their actions (Simons et al. 2004). For this to occur, it is argued that long future time perspectives, such as those related to serving society, can remain long term motivation through the process of proximal goals that act as a means for serving these larger goals (Simons et al. 2004). As a result, it is likely that people with PSM, or the motivation to serve society, are more tolerant of longer time delays, even if there is an inconclusive link to consciousness personality traits. Therefore:

Proposition 2: Public service motivated people will select a delayed task reward if the task is associated with serving society (i.e because it is value aligned).

Third, the concept of expectancy (the final component of TMT), suggests that apart from the value, temporal location or impulsivity, the motivation to do a task is partially dependant on whether or not a person feels that the outcome will occur, and if they will be successful at achieving this outcome or performing the task (Steel and König 2006).

In the PSM literature, it is argued that self-efficacy can strengthen motives related to public service motivation. This is because feeling capable of achieving a particular goal, reinforces one's own worth and abilities and achieving these performance goals is directly linked to serving society (Wright and Grant 2010; Belle 2013). It is more likely that PSM and self-efficacy are mutually reinforcing in so much that if a person feels capable of accomplishing a task with a particular outcome related to the society, then they are more likely to be motivated to undertake this task and be successful at it. In consequence, if the value (i.e. oriented to society) and outcome delay (i.e. no delay) of a task are constant, this task will be more motivating if public service motivated individuals feel that they can accomplish it. Therefore, we propose:

Proposition 3: If public service motivated individuals feel competent to do a task that is oriented to society and not delayed, they will be more motivated to do it.

In order to test these propositions, we develop three different experiential studies based on the three components of TMT

Study 1

The first study focuses on tenants of proposition 1 by testing the concept of values. As suggested above, PSM is a particular instance of prosocial motivation oriented to society or unidentified beneficiaries. In this study, we are interested in showing if task preferences change depending on the values of each task and the level of PSM.

Data

This study uses data from a survey to citizens from Catalonia (Spain). This data was collected between 25th of March and 10th of April 2019. Survey management was done by NetQuest. The survey included questions on socio-demographic characteristics, ideological preferences, health status, and PSM. Moreover, different experiments were included. The experiment included in this research was preceded by an experiment about the impartiality of public television, and followed by a conjoint experiment on work preferences.

After incomplete responses were discarded, the final sample included was 1512 individuals. In order to reduce biases related to the non-probability nature of our sample, quotas were applied on the sampling process. In particular, quotas were asked for gender (50:50), age (18-24 11.9, 25-34 15.1, 35-44 22.3, 45-54 20.4, 55-64 17.2, 65-74 13.1) and education. As table 1 shows, they closely mirror the Spanish population of this region.

<<< Table 1 about here >>>

For this study a sample from the general population, rather than public servants was used. There are two reasons for this. The first is that PSM is universal, and can be found in both public, private and non-profit areas, and while the strength of PSM differs between each of the sectors, the existence of PSM does not. As a result of this, using a general population (with a mix of public, private, and non-profit respondents) captures a better range of PSM responses types. Secondly, as we are interested in theory building, using an occupationally neutral set of respondents (I.e. not just 'teachers' or 'doctors') helps us to generalise our findings. This is important for initial theory building.

Methods

Research design, main variables and hypotheses

To test proposition one, we developed a survey experiment. This design is widely used in public management research as it has both internal and external validity due to the randomisation of treatments across different groups from a representative sample of a larger population (Jilke and van Ryzin 2017). Although different kinds of survey experiments exist, we selected a vignette study because it was an ideal approach for our purpose.

In this study we adopted a between-subjects vignette design. Three different vignettes were created (see appendix 1). To avoid fatigue and other methodological biases, but also to ensure randomization, each respondent only saw one of the three different vignettes. Each vignette asks respondents to imagine they were a maths teacher in a public secondary school. They were then informed that the school director sent them an e-mail asking them to do one out of two possible tasks during their break time. The first task is constant across the three vignettes, the second one varies across three different conditions. The first task is to provide extra math help to two students (pro-social

identified beneficiaries). For the control group, the second task is to attend a meeting, without providing more information about that meeting (i.e no explicit purpose). For treatment group 1, the second task is to attend a meeting to make the school more attractive for new students. Respondents are informed that this will help to increase the number of students and the resources of the school (i.e. pro-organisation). For treatment group 2, the second task was to attend a meeting to improve the maths skills of all students in the school. Respondents were then informed that this will be useful to improve the quality of the education of the students (i.e. pro-social unidentified beneficiaries).

After the vignette was presented, respondents were asked to answer the following question: "assuming you only have time to complete one a single task, what would you choose?" The available options were: "help the two students" or "attend the meeting." After processing the data, a dichotomous variable was created (0=help the two students, 1=attend the meeting). To test for a treatment effect, a manipulation check was presented asking, "in the situation you have just read, do you remember if there was a reason by which the meeting took place?" Response options were: "I do not remember," "Yes, to make the school more attractive" and "Yes, to improve the maths skills of all students in the school."

From a TMT perspective, each vignette manipulates task values while expectancy and time remain constant. With the exception of going to an unspecified meeting, each task relates to a specific value. First, helping two students reflects *a prosocial task oriented to identified beneficiaries.* Second, going to a meeting that has the outcome to increase the resources of the school reflects a *pro organizational task aimed at extrinsic incentives*. Third, going to a meeting to improve the quality of the maths skills in their school reflects a *prosocial task oriented to unidentified beneficiaries*. Because of these links between tasks and values, it is possible to connect each vignette with PSM. As stressed above, PSM is mainly a prosocial motivation oriented to unidentified beneficiaries or the society at large (Vandenabeele et al. 2018). Hence, we hypothesize that PSM individuals will select a prosocial identified task over a task without any clear value (the control group). We also hypothesize that individuals with high levels of PSM will prefer to do a prosocial identified task than a pro-organization task (treatment group 1). This is because the task is prosocial, although oriented to specific beneficiaries. By contrast, when the competing task is prosocial but oriented to unidentified beneficiaries,

then individuals with high levels of PSM will be more likely to prefer this task than the prosocial identified one (treatment group 2). Therefore:

H1. Individuals with high levels of PSM prefer to do a prosocial identified task, rather than a task without a clear value.

H2. Individuals with high levels of PSM prefer to do a prosocial identified task, rather than a pro-organizational task.

H3. Individuals with high levels of PSM prefer to do a prosocial unidentified task, rather than a prosocial identified task.

Other measures of interest

Measurement is an area of contention within PSM research (Bozeman and Su 2014). While Perry (1996) proposed the first measure of PSM, due to subsequent differences that emerged across cultures leading to problems with generalizability, researchers further refined it or proposed alternative measures (Vandenabeele, 2008; Kim et al., 2013; Ballart and Riba, 2017). In the light of this ample spectrum, one of the main criteria for selecting a measure is whether researchers are interested on PSM as a uni- or multidimensional concept. Previous research has found that there are not significant differences in outcomes between uni- or multidimensional measures (Wright et al. 2013, Kim 2017). Moreover, Vandenabeele et al. (2018) suggest that PSM research could be further developed by using an overall measure of PSM that captures the essence of the concept and does not assume specific behavioural inclinations. Therefore, this study uses a 4-item global measure of PSM designed by Vandenabeele and Penning de Vries (2016). Respondents rated their agreement with the 4 statements (see appendix 2) on a 7-point Likert scale (1=strongly disagree, 7=strongly agree). Combining all items, a latent variable emerged (Satorra-Bentler scaled $\chi 2$ [df=2] = 3.888, p = 0.143, RMSEA= 0.025, CFI =0.999, TLI = 0.996, and SRMR = 0.007). Goodness of fit indicators are satisfactory (factor loadings are in appendix 2). Based on this, an average was calculated and rescaled to a 0-1 scale for ease of interpretation with a logistic regression model.

Since we hypothesized heterogeneous effects for PSM, it is important to investigate the distribution of PSM across the three treatment groups. Two actions were taken. First, a comparison of the mean of PSM across each treatment group (table 3) shows that the

mean is similar (almost the same) for the first two groups. By contrast, the mean of PSM is slightly higher (0.02 points in a 0-1 scale) for respondents who saw the pro-social no-identified meeting vignette. Second, ANOVA tests suggests that there is slight variance between the groups $F(2,1509) = 2.31$ p=.10. However, further analysis following the more conservative, Bonferroni multiple-comparison test, showed no significant differences between the groups. In addition, the Bartlett's test (Prob>chi2=0.47) shows that all groups have the same variance in terms of PSM making between group comparisons valid. This suggests that slight differences do exist between the groups, but they are minimal. We therefore proceeded with the analysis.

<<< Table 2 >>>

Results

Because of the dichotomous nature of our dependent variable, we ran a series of logistic regressions to test our hypotheses. Table 1 presents the results. In step one, group effects were examined, with the control group as the baseline. To facilitate the interpretation of the results, we used the predicted probabilities of going to the meeting for the three treatment groups (figure 1). The probability of going to the meeting for individuals who were asked to attend non-value specified meeting (the control group) was 17.4%. This probability increases to 32.36% for the respondents who saw a pro-organizational meeting (treatment 1), and to 67.54% for those with the pro-social non-identified meeting (treatment 2). These coefficients, and the ones shown in table 1, are statistically significant. This indicates that the purpose of each meeting had an impact on the likelihood of going to it. Thus, we can conclude that the manipulation was successful.

<<< Table 3 >>>

<<< Figure 1 >>>

In step two, PSM was added as a covariate to the logistic regression, as well as the interactions between PSM and the treatment groups. The logistic regression results show that PSM has a positive effect on the probability of going to the meeting when it is pro-organizational (treatment 1) or pro-social no-identified (treatment 2). Figure 2 visually presents these results. First, examining the control group, the probability of selecting the task of attending a meeting without a specific purpose for individuals with

the lowest PSM is 33.78%. When the level of PSM is highest, this probability decreases to 11.70%. This shows that the probability to do a task without a specific purpose (compared to a prosocial identified task) decreases as the levels of PSM increase. Therefore, hypothesis 1 is confirmed. Second, examining treatment group 1, the probability of selecting the task of attending meeting with a pro-organisational purpose for individuals with the lowest PSM is 17.86%. When the level of PSM is at its highest, this probability increases to 40.85%. This indicates that the probability of selecting a pro-organizational task (compared to a prosocial identified task) increases with higher levels of PSM. Therefore, hypothesis 2 is not confirmed. Finally, examining treatment group 2, the probability of selecting the task of attending a meeting with a pro-social non-identified purpose for individuals with the lowest levels of PSM is 50.10%. When the level of PSM is the highest, this probability increases to 74.25%. This indicates that the probability to do a prosocial non-identified task (compared to a prosocial identified task) increases as the levels of PSM increase. Therefore, hypothesis 3 is confirmed. These estimated probabilities, as well as the odds ratio shown in table, are all statistically significant.

<<< Figure 2 >>>

Due to the potential violation of randomization that occurs when researchers drop those who failed the manipulation check (see Aronow, Baron, and Pinson 2015), we included all individuals with complete data. However, as a robustness check, we reran the results with and without those who failed the manipulation check. Overall the results are very similar. The main differences are that effects of the treatments are larger (specifically for treatment 2), and that some groups have a significantly higher mean of PSM (also treatment 2). Please see appendix 3 for the complete results.

Discussion

The purpose of this study was to outline the means in which to better understand the motivational processes that occur between PSM and behavioural choices. In doing so, three propositions were presented and one study was used to test the first proposition**.** The empirical components of this study sought to test proposition 1, which argues that task value is an important factor in studying the decision-making processes of public service motivated individuals. In doing so, several contributions are made to the PSM literature.

First, an attempt was made to unpack a means of understanding the decision-making processes related to PSM and behavioural intentions. Given the inconclusively of PSM predicting behavioural outcomes, outlining one potential process in which motivation leads to behaviour could help researchers to better understand the appropriate means in which PSM could lead to behavioural outcomes. TMT offers a novel way of understanding how PSM can lead to behaviours. While researchers have already eluded to the importance of values and self-efficacy in the development and expression of PSM (Perry 2000; Wright and Grant 2010), the novelty of also time provides an additional component that could shape behavioural outcomes. The benefit of TMT is that is consolidates all three components.

Our empirical analysis isolated the concept of values. The results suggest that values attached to specific tasks are important for decision-making, and this influence is even stronger for those with high PSM. It was argued that if a task is oriented towards society, individuals with higher levels of PSM will be more motivated to do this task. First, when choosing between a pro-social identified task and a task of a non-value specified meeting (control group), individuals with higher levels of PSM are more likely to select the pro-social identified task (compared to those with low PSM). This is because, although being oriented to the society at large, PSM is prosocial, which implies that if an action triggers prosocial values, it is likely that public service motivated individuals will do it. This supports the claim that proximal tasks can support and motivate individuals towards longer term goals is they are linked in some way (Simons et al. 2004). These results could also suggest that PSM individuals use pro-social tasks, to sustain their PSM motivation. However, they may also reflect motivational overlap between PSM and pro-social motivation, something that was not covered within this research.

Second, the results show that when choosing between a pro-social identified task and a pro-organizational task (treatment 2), individuals with higher levels of PSM are more likely to select the pro-organisational task. This is contrary to what was expected, however, we offer two possible explanations for such a finding. Firstly, it could be that some individuals interpreted that by helping the organization, their individual impact in the welfare of the society is bigger than by helping just two students. This seems plausible when considering that a better school can have a broad scope of influence in the lives of many individuals. The findings are therefore in line with theories that

suggest that individual motivated by public service tend to be motivated by more broad based goals (Schott et al 2017). Secondly, as we used a sample from the general population, it could be that highly public service motivated individuals simply identified more strongly with school related administrative duties compared to occupational related duties of teaching two students and different forms of motivation become salient at the task level (i.e intrinsic motivation), compared to the organisational level (PSM) (Breaugh et al 2017).

Finally, when choosing between a pro-social identified task and a pro-social non-identified task (treatment 2), individuals with higher levels of PSM were more likely to select a pro-social non-identified task. This finding provides preliminary evidence to support recent theoretical developments in PSM that argue that PSM is a pro-social motivation oriented to serve unidentified beneficiaries or the society at large (Schott et al. 2019, Vandenabeele et al. 2018). Therefore, our finding confirms this interpretation: individuals with higher levels of PSM are more likely to do a task oriented to society, rather than one oriented to identified beneficiaries.

Limitations

While this paper provides a new research avenue within the field of PSM, certain limitations should also be acknowledged. First, behavioural intentions, rather than actual behaviour is studied. While this is exploratory research, future research should try and design experiments that look at actual behaviours. In a lab, this could be via games. In another vignette experiment, it could be asking participants to draft a work priority list. And, in interviews it could be to explore how and why public servants select their tasks, or emphasize certain tasks over others.

Secondly, we used a sample from the general population. While this may lead to problems of generalizability, PSM is a universal motivation that is stronger in public sector institutions. This means that it exists outside the public sector, and therefore, a general population of people are likely to also possess PSM values. In addition, as previously mentioned, using the general population may also offer a more balanced means of testing PSM theory development as we do not use one specific public sector institution or occupation as a sample.

Linked to this, the vignettes were focused specifically on tasks related to the teaching profession and schools in general. While this was specifically chosen as it was thought to be one of the most widely accessible public institutions, where most respondents would have some form of institutional interaction (as students, parents, or employees), the external validly could be problematic. Nonetheless, the tasks themselves were also purposely selected to reduce cognitive taxation as they capture very basic tasks associated with the teaching the profession, which enable the respondents to select which task they would choose without necessarily having direct experience as a teacher. Therefore, further research should use different professional tasks to confirm these results.

Thirdly, in study 1, there is a slight variance of PSM across the three treatment groups. According to our theoretical arguments and empirical results, individuals with higher levels of PSM have a stronger preference for pro-social no-identified values. This could have an impact on the expected probabilities of going to the meeting in the first step of the logistic regression for the group with a slightly higher level of PSM (i.e. treatment 2). To solve this issue, novel studies are encouraged to block randomization depending on the overall levels of PSM.

Finally, although this article presents a theoretical framework to explain the decision-making processes by which PSM leads to behavioural outcomes, the theory's complexity was simplified for initial theory testing. Because of this, conflicting components of the theory were not discussed. For example, how does one explain what happens when two tasks share similar values but their rewards will be obtained in a different point in time? Or, what happens when individuals are only capable of doing the less appealing task? Future studies should address these questions by combining the three components of TMT in the same study.

Conclusion

The purpose of this paper was to study and identify the underlying decision-making processes by which public service motivated individuals engage in certain behaviours. To accomplish this, both theoretical and empirical evidence have been provided. The three theoretical propositions arise from integrating PSM with the three components of TMT (i.e. value, time and expectancy). Empirically, this paper asseses the importance of values when predicting the outcomes of individuals with high levels of PSM. The

results demonstrate that PSM is prosocial, although mainly oriented to the society at large or unidentified beneficiaries. Although interesting, this article only offers the first step to understand why PSM leads to certain behaviours. Therefore, subsequent research needs to consolidate and expand these findings.

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Appendix 1

Vignettes in English and original survey items in Spanish

Please note, the vignette's used in this experiment were in the Spanish language, and were translated into English for ease of international dissemination.

Control group

Imagine you are maths teacher in a public secondary school. One day the director of your school sends you an e-mail asking to do one out of two tasks. The first task is to meet with two students to answer additional math questions they have. The second task is to attend a meeting. Both tasks have to be done during the break time.

Imagina que eres un/a profesor/a de matemáticas en un instituto público de educación secundaria. Un día, el/la directora/a te envía un correo electrónico en el que te pide que realices una tarea entre dos posibles. La primera consiste en recibir a dos estudiantes para responder dudas relacionadas con las matemáticas. La segunda consiste en asistir a una reunión. Las dos tareas deben realizarse durante la pausa del patio.

Treatment group 1

Imagine you are maths teacher in a public secondary school. One day the director of your school sends you an e-mail asking to do one out of two tasks. The first task is to meet with two students to answer additional math questions they have. The second task is to attend a meeting to discuss strategies to make the school more attractive to new students, which will be useful to increase the number of applicants and resources of the school. Both tasks have to be done during the break time.

Imagina que eres un/a profesor/a de matemáticas en un instituto público de educación secundaria. Un día, el/la directora/a te envía un correo electrónico en el que te pide que realices una tarea entre dos posibles. La primera consiste en recibir a dos estudiantes para responder dudas relacionadas con las matemáticas. La segunda consiste en asistir a una reunión en la que se debatirán estrategias para hacer el instituto más atractivo para nuevos estudiantes, lo que será útil para incrementar el número de estudiantes y los recursos del instituto. Las dos tareas deben realizarse durante la pausa del patio.

Treatment group 2

Imagine you are maths teacher in a public secondary school. One day the director of your school sends you an e-mail asking to do one out of two tasks. The first task is to meet with two students to answer additional math questions they have. The second task is to attend a meeting to discuss strategies to improve the maths skills of all students in the school, which will be useful to increase the quality of education. Both tasks have to be done during the break time.

Imagina que eres un/a profesor/a de matemáticas en un instituto público de educación secundaria. Un día, el/la directora/a te envía un correo electrónico en el que te pide que realices una tarea entre dos posibles. La primera consiste en recibir a dos estudiantes para responder dudas relacionadas con las matemáticas. La segunda

consiste en asistir a una reunión en la que se debatirán estrategias para mejorar las habilidades matemáticas de todos los estudiantes del instituto, lo que será útil para mejorar la calidad de la educación. Las dos tareas deben realizarse durante la hora del patio.

Appendix 2

Confirmatory factor analysis for PSM

Public Service Motivation, α = 0.883 ρ = 0.885	**SFL**	**S-B SE**
1. I am very motivated to contribute to society *1. Estoy muy motivado/a para contribuir a la sociedad*	0.787***	0.017
2. I find it very motivating to contribute to society *2. Me parece muy motivador contribuir a la sociedad*	0.862***	0.013
3. Making a difference in society, no matter how small, is very important to me *3. Crear una mejora en la sociedad, sin importar lo pequeña que sea, es muy importante para mí*	0.821***	0.014
4. Defending the public interest is very important to me *4. Defender el interés general es muy importante para mí*	0.770***	0.018

Appendix 3

Table 1. Logistic regression results

VARIABLES	1	2
Pro-organizational	2.418***	0.583
	(0.453)	(0.401)
Pro-social n-i	14.7***	4.301**
	(2.668)	(2.790)
PSM		0.438
		(0.326)
No-specified*PSM		-
		(-)
Pro-organizational*PSM		8.166**
		(8.026)
Pro-social n-i*PSM		6.035*
		(5.609)
Constant	0.175***	0.304**
	(0.026)	(0.156)
Pseudo r2	0.198	0.203
Observations	1,145	1,145

Odds ratio are shown. Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Figure 1. Margins for treatment (estimates from model 1)

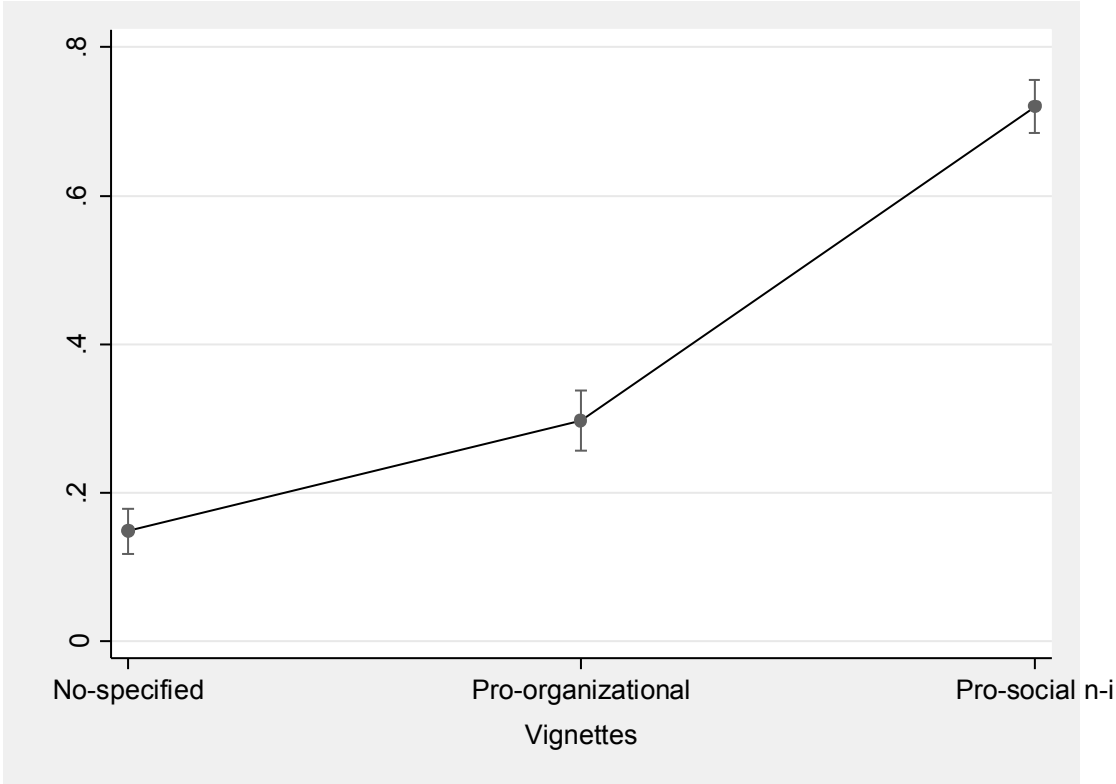

Figure 2. Margins for treatment*PSM (estimates from model 2)

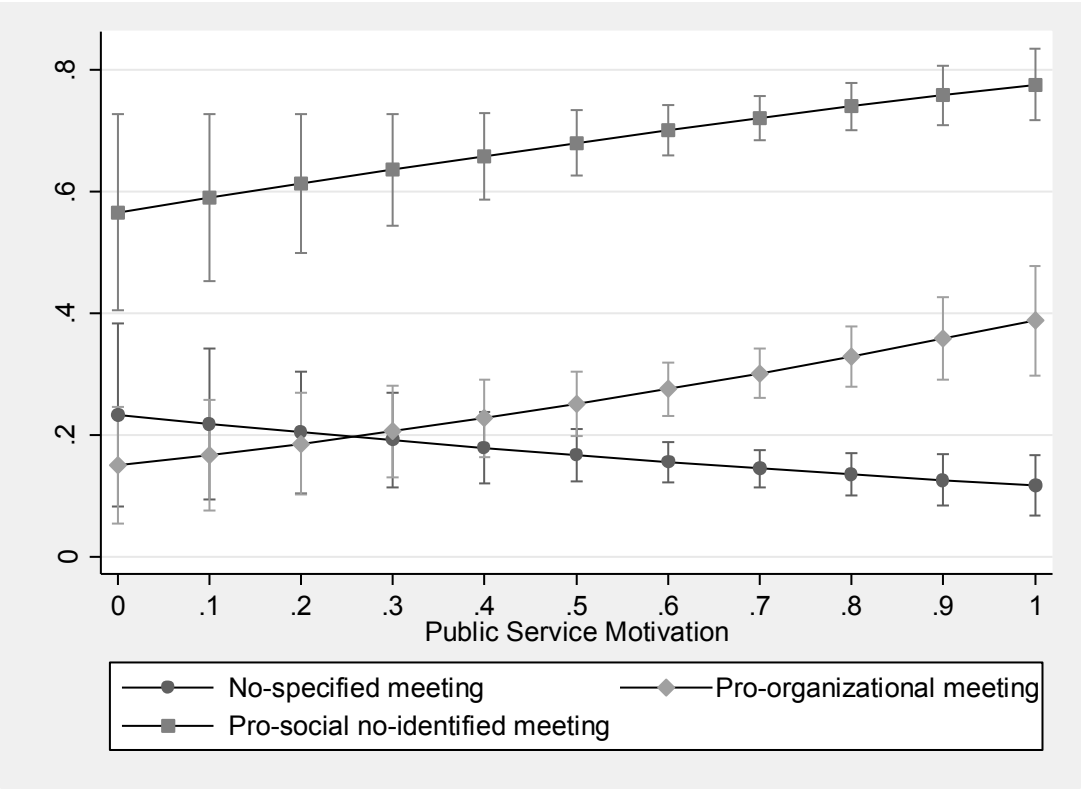

Table 2. Distribution of PSM

Vignette group	Mean PSM (sd)	*n*
0 (no-specified meeting)	.682 (.192)	270
1 (pro-organizational meeting)	.671 (.191)	347
2 (pro-social no-identified meeting)	.702 (.192)	428

Tables and Figures

Table 1. Socio-demographic characteristics

n = 1512	%
Gender	
Female	50.26
Age	
18-24	11.38
25-34	15.15
35-44	22.42
45-54	20.30
55-64	17.79
65-74	12.96
Level of studies	
Up to Primary Education	33.2
Secondary Education and Vocational Training	34.13
University Education	32.67
Work status	
Working	61.11
Housework	4.3
Pensioners	18.25
Unemployed	8.4
Student	6.35
Other	1.59
Work sector	
Public	18.58
Private	41.14
Third	1.39
.	38.89

Table 2. Distribution of PSM

Vignette group	Mean PSM (sd)	*n*
0 (no-specified meeting)	.674 (.201)	500
1 (pro-organizational meeting)	.675 (.191)	513
2 (pro-social no-identified meeting)	.697 (.192)	499

Table 3. Logistic regression results

VARIABLES	1	2
Pro-organizational	2.270***	0.427
	(0.343)	(0.226)
Pro-social n-i	9.875***	1.968
	(0.149)	(1.029)
PSM		0.260**
		(0.149)
No-specified*PSM		-
		(-)
Pro-organizational*PSM		12.222***
		(9.385)
Pro-social n-i*PSM		11.062***
		(8.402)
Constant	0.211***	0.510*
	(0.025)	(0.197)
Pseudo r2	0.141	0.149
Observations	1,512	1,512

Odds ratio are shown. Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Figure 1. Margins for treatment (estimates from model 1**)**

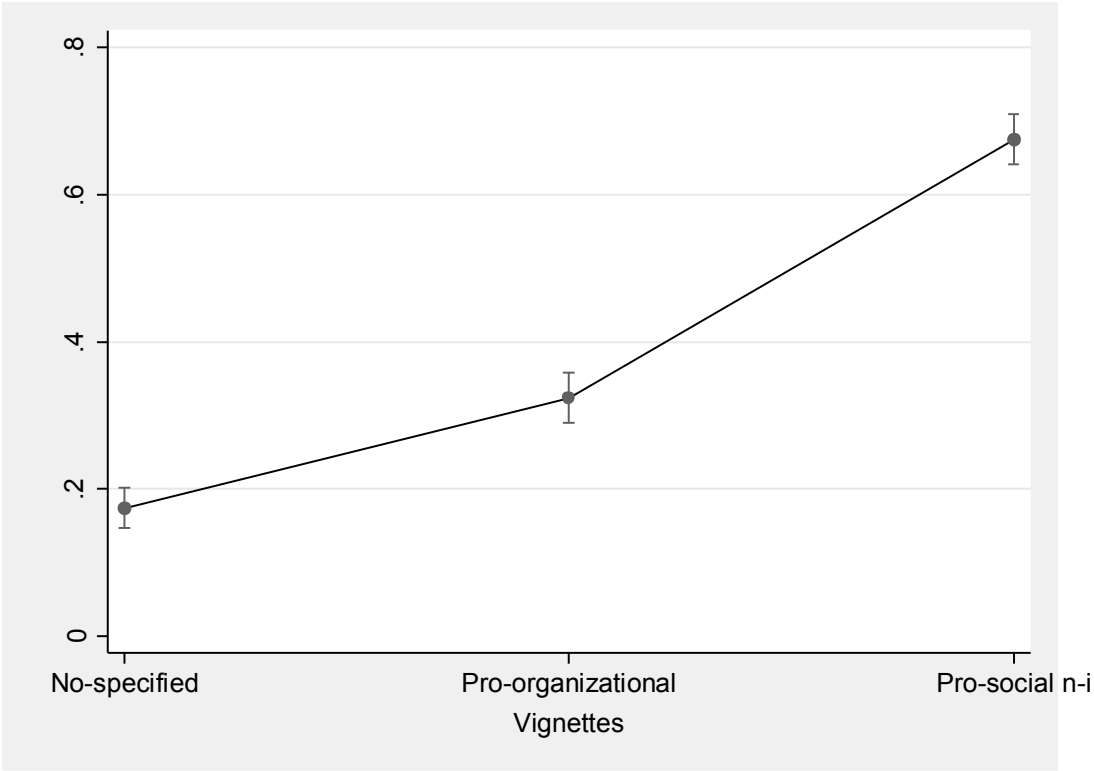

Figure 2. Margins for treatment*PSM (estimates from model 2)