

Organisational Citizenship Behaviour, Public Service Motivation and Employee Well-being: a quantitative study into the dark side of OCB



Christa de Geus

5662621

Research Master in Public Administration and Organisational Science

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Christa Janna Cornelia de Geus

5662621

Research Master in Public Administration and Organisational Science

Utrecht University/ Erasmus University Rotterdam

Supervisors:

Dr. Bert George

Prof. Dr. Bram Steijn

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ABSTRACT

In this study a cross-sectional survey was used to investigate the relation between organisational citizenship behaviour and three forms of employee well-being and to investigate the relation between compulsory citizenship behaviour and three forms of employee well-being. We also studied the influence of PSM on these relationships. The study was conducted among 333 PhD-students of five Dutch universities. We found a positive relationship between organisational citizenship behaviour aimed at the organisation and job satisfaction and perceived organisational support. We also found a negative relation between compulsory citizenship behaviour and job satisfaction and POS and a positive relation between compulsory citizenship behaviour and job stress. These results indicate that organisational citizenship done under pressure is associated with a lower employee well-being. We suggest future research investigates the origins of compulsory citizenship behaviour.

SAMENVATTING

In dit onderzoek is een cross-sectionele vragenlijst gebruikt om de relatie tussen *organisational citizenship behaviour* en drie vormen van werknemerswelzijn te bestuderen en om de relatie tussen *compulsory citizenship behaviour* en drie vormen van werknemerswelzijn te bestuderen. Tevens wordt in deze studie de invloed van *public service motivation* op bovenstaande relaties onderzocht. Het onderzoek is uitgevoerd onder 333 promovendi van vijf Nederlandse universiteiten. We vonden een positieve relatie tussen *organisational citizenship behaviour* gericht op de organisatie en werktevredenheid en ondersteuning van de organisatie. Daarnaast vonden we een negatieve relatie tussen *compulsory citizenship behaviour* en werktevredenheid en organisatiesupport en een positieve relatie tussen *compulsory citizenship behaviour* en werkstress. Concluderend blijkt uit deze studie dat *compulsory citizenship behaviour* wordt geassocieerd met een lager werknemerswelzijn. Toekomstig onderzoek moet zich richten op de oorsprong van *compulsory citizenship behavio*

VOORWOORD

Voor u ligt de scriptie ‘Organisational Citizenship Behaviour (OCB), Public Service Motivation (PSM) and Employee Well-being: a quantitative study into the dark side of OCB’. Deze studie is uitgevoerd onder 333 promovendi van 5 Nederlandse universiteiten. Deze scriptie is geschreven in het kader van de Research Master Public Administration and Organisational Science aan de Universiteit Utrecht. Dit onderzoek is uitgevoerd van januari 2017 tot en met juli 2017.

Het thema van dit onderzoek is tot stand gekomen na het schrijven van een literatuur onderzoek naar OCB in de publieke sector. Tijdens dit onderzoek kwam naar voren dat OCB niet altijd geheel vrijwillig gebeurd. Ik vroeg mij dan ook af wat de consequenties zijn als dit het geval is. De keuze voor promovendi was voor mij vrij gemakkelijk. Door de Research Master ben ik veel in contact met wetenschappelijk personeel en met promovendi in het bijzonder. Het viel mij dan ook op dat zij veel stress ervaren en zeer hard werken. De promovendi leken mij dan ook een zeer geschikte groep om onderzoek onder uit te voeren.

Dit onderzoek is begeleid door Dr. Bert George en Prof. Dr. Bram Steijn van de Erasmus Universiteit Rotterdam. Zij stonden altijd voor mij klaar. Vooral in de laatste fase van de scriptie heb ik veel aan hun commentaar gehad om mijn scriptie tot een goed einde te brengen.

Tevens wil ik de PhD-councils bedanken die mij hebben geholpen in het benaderen van respondenten. Natuurlijk wil ik ook alle respondenten bedanken, zonder hun medewerking had ik dit onderzoek niet kunnen voltooien.

Daarnaast wil ik graag mijn vrienden en familie bedanken van wie ik wijze raad heb mogen ontvangen. Tot slot wil ik in het bijzonder mijn vriend bedanken voor de ondersteuning in deze periode. Zonder zijn luisterend oor en relativerend vermogen had deze scriptie mij een stuk zwaarder gelegen.

Ik wens u veel leesplezier toe.

Christa Janna Cornelia de Geus

Rotterdam, 11 juli 2017

INTRODUCTION

Going the extra mile on the job is a subject that has interested scholars for a long time. In 1983 Smith, Organ and Near gave this extra-role behaviour a name: organisational citizenship behaviour (OCB). Organ later defined OCB as “individual behaviour that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organisation” (Organ, 1988, p. 4). Examples of OCB are voluntarily working overtime and voluntarily helping colleagues with their work. Recently, scholars have become interested in studying a type of OCB that is not completely voluntary. In some cases employees can feel a pressure to perform OCB. This pressure can come from several sources. For example, an abusive manager can force an employee to work more hours per day than the normal working hours (Vigoda-Gadot, 2006). Scholars label this involuntary OCB as compulsory citizenship behaviour (CCB) (e.g. Vigoda-Gadot, 2006; 2007), citizenship pressure (e.g. Bolino, Turnley, Gilstrap and Suazo, 2010) and OCB-eliciting demands (e.g. Spector and Fox, 2010).

OCB is seen as a type of behaviour that is beneficial for the organisation. Scholars have, however, suggested that when OCB is performed under pressure from, for example, the manager or colleagues, the beneficial effects for the organisation might diminish. Spector and Fox (2010) suggested that involuntary OCB might explain a positive relation between OCB and the opposite behaviour: counter-productive work behaviour. Vigoda-Gadot (2007) found a relation between CCB, a lower level of job satisfaction and a higher level of job stress as well as burnout. Studies have measured the impact of CCB on some aspects of well-being, but the full effects of CCB on a broader scheme of employee well-being outcomes has received less attention in the literature. Employee well-being can be defined as the overall quality of an employee’s functioning at work and experience at work (Warr, 1987). Employee well-being consists of three dimensions: health, happiness and relationships (Grant, Christianson & Price, 2007).

In the public sector OCB and CCB play an important role. Many public organisations have implemented New Public Management (NPM). NPM can be defined as: “making public sector organisations -and the people working in them!- much more ‘business-like’ and ‘market-oriented’, that is, performance-, cost-, efficiency- and audit oriented” (Diefenbach, 2009, p. 893). The outcomes of NPM are not always positive. With the implementation of NPM customer satisfaction for example increased, but so did job strain (Korunka, Scharitzer, Carayon & Sainfort, 2003). In these organisations where efficiency and performance are important voluntary, OCB might become extra important to deal with increased workloads. But on the other hand, the job strain resulting from NPM might lead to higher levels of CCB.

Research has shown that within the public sector public service motivation (PSM) positively influences the amount of extra-role behaviour employees illustrate (e.g. Caillier, 2015; Campbell & Tobin, 2015).

We propose that not only does PSM influence OCB, PSM also influences the relationship between OCB and well-being as well as the relationship between CCB and well-being. If public employees do their job well, they contribute to society. We therefore expect that if an employee shows a lot of PSM, the positive effect of OCB on the dimensions of well-being are even stronger and the negative effects of OCB on dimensions of well-being will be weaker. Podsakoff, LePine and LePine (2007) argued that employees can perceive stressors in two ways; there are hindrance stressors which hinder an employee from reaching his or her goals, and challenge stressors which are seen as an opportunity to grow. Having a high amount of PSM might make employees view CCB as a challenge stressor instead of a hindrance stressor and thus reduce the negative effect of CCB on well-being.

Vigoda-Gadot (2007) suggested that further research on CCB should take place in a sector that is experiencing much pressure. One sector within the public sector that has a high level of competition among employees and that experiences a lot of pressure is higher education. A recent study by the largest Dutch labour union FNV showed that work pressure among academic personnel is very high (FNV, 2017). Sixty-seven percent of academic personnel experiences a high to very high work pressure. Personnel experience such a high work pressure that in the last 3 years 62% of the respondents felt that they did not have the time to be sick. Personnel also worked through vacations and 42% of the personnel worked 6 or more hours per week extra. Academics felt that this was at the cost of personal life, free time and vacation. According to the study by the FNV (2017) this work pressure is a result of, among other things, a lack of personnel, publication pressure, increasing amounts of students and an unrealistic low amount of contract hours. The high work pressure felt by academics makes this sector an interesting one to investigate OCB and CCB. The results of this study contribute to a better understanding of the impact resulting from the pressure academics feel in their work and thus provides potential solutions for managers to solve this problem within universities. The results of this study can result in a better understanding of the pressure academics feel in their work and the effects of OCB and CCB on the well-being of academics.

The aim of this study is twofold. First, we examine the prevalence of OCB and CCB in a public-sector setting and the influence of OCB and CCB on different aspects of employee well-being. Second, we examine the moderating influence PSM has on these relationships. This will be done by conducting a quantitative study drawing on survey data from 333 PhD students grouped in 6 Dutch universities. The research question of this study is: *“To what extent are organisational citizenship behaviour and compulsory citizenship behaviour related to well-being among PhD-students in the Netherlands, and does PSM influence this relationship?”*

In the next chapter we present a literature review of OCB, CCB, well-being and PSM. We define each concept and discuss the consequences for the organisation, the employee and the co-workers. Next, we propose a conceptual model as well as hypotheses based on theory. The following chapter discusses the

methods of this paper, including the sample, data collection, measures and descriptive statistics. We present the results of our multiple linear regression analysis and conclude with the implications of our findings for theory and practice.

LITERATURE REVIEW

In this chapter we will discuss prior research on OCB, CCB, well-being and PSM. We will elaborate on the different dimensions underlying OCB, CCB, well-being and PSM and we will discuss the antecedents and outcomes of these constructs.

Organisational Citizenship Behaviour

In 1964 Katz made a distinction between in-role and extra-role behaviour. He described in-role behaviour as the assigned roles towards an employee and extra-role behaviour as innovative and spontaneous behaviour that is not indicated in the assigned roles. Smith, Organ and Near (1983) elaborated on the idea of extra-role behaviour under the concept organisational citizenship behaviour (OCB). These authors distinguished two dimensions within OCB: OCB aimed at helping specific people called altruism and an impersonal form of OCB called generalized compliance. Organ defined the concept of OCB further in 1988 as a voluntary act, that is not formally rewarded and which benefits the organisation. According to Organ (1988) OCB consists of five different dimensions: altruism, sportsmanship, conscientiousness, courtesy and civic virtue. Altruism is the behaviour of helping others directly. Sportsmanship is accepting and not complaining about little frustrations and inconveniences. Conscientiousness is helping behaviour aimed at the whole organisation. Courtesy is having the intention to prevent problems for co-workers and civic virtue is being involved in issues that concern the organisation. Williams and Anderson (1991) argued that these five dimensions have a lot of overlap and therefore conceptualized two dimensions of OCB: OCBI, aimed at other individuals in the organisation and OCBO, aimed at the organisation itself. OCBI corresponds with altruism and courtesy while OCBO corresponds with the other three dimensions distinguished by Organ (1988) An overview of the different dimensions of OCB used in the literature can be found table 1.

Before the 1990s, OCB did not receive much attention in the literature, but since 1990 the attention for OCB and concepts relating to it, such as extra-role behaviour, prosocial organisational behaviour, organisational spontaneity and contextual performance, increased drastically (Podsakoff, MacKenzie, Paine & Bachrach, 2000). Early research on OCB focused principally on the antecedents of OCB (Podsakoff et al., 2000). In their meta-analysis Podsakoff et al. (2000) distinguish four different types of antecedents that have been linked to OCB, or one of its dimensions. Firstly, the presence of certain characteristics within the employee correlate with a higher OCB. Podsakoff et al. (2000) mention for example job satisfaction and commitment as antecedents that have a positive correlation with OCB. Secondly, the authors distinguish task characteristics such as task feedback as antecedents of OCB. Thirdly, they mention organisational characteristics such as the cohesion of the group and the perceived organisational support that are positively related to OCBs. Lastly, according to Podsakoff et al. (2000) leadership behaviour such as leader-member exchange have a positive influence on the OCB of employees. Thus, this meta-analysis makes it clear that managers and organisations can improve the OCB of employees by using legitimate means such as increasing the group cohesion.

The consequences of OCB for employees, co-workers and the organisation have received less attention in the literature. And most of these studies focus on the effects of OCB on types of performance (Podsakoff et al. 2000). Smith et al. (1983) argued that OCB could contribute to a better organisational performance, because the flexibility provided by employees with OCB is needed to work through unforeseen contingencies and because OCB facilitates interdependency of employees. Several empirical studies give evidence of the contribution of OCB to organisational performance (e.g. Kim, 2004).

Table 1:

Dimensions OCB and CCB

Organisational Citizenship Behaviour	
Voluntary OCB	Involuntary OCB
Smith, Organ and Near (1983) 1. OCB altruism 2. OCB generalized compliance	Vigoda-Gadot (2006;2007) 1. Compulsory Citizenship Behaviour (CCB) "OCB which arrives from other motives, some of them less voluntary or less self-initiated" (Vigoda-Gadot 2007, p.3) For example from an abusive manager.
Organ (1988) 1. OCB altruism 2. OCB sportsmanship 3. OCB Conscientiousness 4. OCB Courtesy 5. OCB Civic virtue	Bolino, Turnley, Gilstrap and Suazo (2010) 1. Citizenship pressure "A specific job demand in which an employee feels pressured to perform OCB" (Bolino et al. 2010, p. 836)
Anderson (1991) 1. OCB aimed at individual (OCBI) 2. OCB aimed at organisation (OCBO)	Spector and Fox (201) 1. OCB-eliciting demands "Demands that exert strong pressures on people to go beyond their assigned tasks ." (Spector & Fox, 2010, p.133)

Compulsory Citizenship Behaviour

In recent years, scholars have been giving more attention to the dark side of OCB (e.g. Vigoda-Gadot, 2006; Spector & Fox, 2010) . The meta-analysis of Podsakoff et al. (2000) illustrated that management and colleagues can enhance OCB by using legitimate means such as improving the organisational climate. However, several scholars argue that an environment that tries to enhance the amount of OCB of an employee results in pressure that leads to involuntary OCB. This idea has been given different names in the literature: Vigoda-Gadot (2006; 2007) calls this compulsory citizenship behaviour (CCB),

Bolino et al. (2010) discuss citizenship pressure and Spector and Fox (2010) call this OCB-eliciting demands.

Vigoda-Gadot (2006) hypothesized that OCB does not always originate from a voluntary motive, but that other, less voluntary factors play a role. In this case the OCB is coercive or compulsory. Vigoda-Gadot (2006; 2007) calls this type of OCB compulsory citizenship behaviour (CCB). CCB is extra-role behaviour that the employee would not show if there was no external pressure. Examples of motives that lead to CCB are abusive or exploitive supervisors and pressure by peers or by management.

The second concept used in the literature to describe involuntary OCB is demand-elicited OCB coined by Spector and Fox (2010). According to them, OCB-eliciting demands puts pressures on employees to go beyond their tasks. The term OCB-eliciting demands is used by the authors as a synonym for CCB.

The last concept used in the literature to describe involuntary OCB, is citizenship under pressure by Bolino et al. (2010). Citizenship pressure is defined as: “a specific job demand in which an employee feels pressured to perform OCB” (Bolino et al., 2010, p. 836) and “an individual’s perception regarding how much pressure there is to engage in supposedly voluntary acts of citizenship behaviour” (Bolino et al., 2010, p. 838). Citizenship pressure is very subjective; in the same department employees can feel a different amount of citizenship pressure than their direct colleagues.

Most studies on CCB investigated the association between pressures to perform OCB and OCB itself, but the nature of this association is disputed. Vigoda-Gadot (2007) argued that the relation between CCB and OCB is negative, because a high CCB leads to a feeling of exploitation and abusing with the employees, which leads to a lower willingness to put effort in OCB. Vigoda-Gadot (2007) did not find a significant relation between CCB and OCB measured by supervisors, but found a negative relationship between CCB and group-level OCB. According to Zhao, Peng and Chen (2014) the negative association between CCB and OCB can be explained by a mediating effect of organisational identification. These authors argued and found that a high amount of CCB results in a lower level of organisational identification, which leads to a lower amount of OCB. Bolino et al. (2010) argued that citizenship pressure would be positively related to OCB because individuals increase their job performance as a result of different job pressures. Bolino et al. (2010) found a positive association between citizenship pressure and subjective OCB. These differences in the nature of the association between citizenship pressure and OCB might be because different methodologies and conceptualisations are used to measure CCB and OCB (Zhao et al., 2014).

Although authors disagree on the nature of the relationship between pressures to perform OCB and OCB, authors do agree on the negative effects these pressures can have on the employee and the organisation. Citizenship pressure has been found to lead to more job stress, a greater intention to quit and more conflict both between work and family and between work and leisure (Bolino et al. 2010). Indeed, CCB has been positively associated with job stress, organisational politics, intention to leave,

negligent behaviour, and burnout. And CCB has been found to relate negatively with innovation, job satisfaction and in-role performance (Vigoda-Gadot, 2007).

Thus, as can be seen in table 1 there are multiple concepts to describe involuntary OCB. All prior studies on involuntary OCB agree that CCB can negatively impact some aspects of employee well-being. However, a full insight of the impact CCB has on well-being is missing. In this study we define well-being as an aspect with multiple dimensions.

Well-being

Well-being can be defined as the overall quality of the experience and functioning at work of a certain employee (Warr, 1987). A high employee well-being is seen as a positive feature of an organisation. Warr (1999) for example showed that a higher well-being leads to a better job performance. Grant et al. (2007) divided well-being into three separate dimensions: psychological well-being, physical well-being and social well-being. *Psychological well-being* can be described as the happiness dimension. This dimension falls apart in a eudaimonic and hedonic side. The eudaimonic side focusses on meaning and fulfilment. While the hedonic side focusses on the experience of pleasure, for example job satisfaction. Research has shown that a higher job satisfaction among employees is beneficial for the organisation. Numerous studies give evidence for a positive relation between job satisfaction and job performance (e.g. Judge, Thoresen, Bono, Patton, 2001). The *physical dimension* of well-being can be described as a dimension focussed on health. Work can have three different effects on health: it can lead to injury or disease, can cause stress and can be a source of healthcare benefits. Especially job stress received much attention in the literature. Several job stressors can be identified in the literature. For example workload, number of hours worked, number of people worked for and autonomy (Spector, Dwyer & Jex, 1988). These job stressors have several negative consequences, both for the employee and for the organisation. Studies showed that job stress is for example positively related to burnout and a lower mental health (Tank, Au, Schwarzer & Schmitz, 2001). The third dimension focusses on *social well-being* or the relationships a person has in the workplace. Relationships can exist between equal co-workers or between a supervisor and an employee. Relationships at work play an important role in the well-being of employees. For example mistrust of co-workers can lead to a lower job satisfaction and a lower psychological well-being. And jealousy in the workplace can lead to workplace violence (Cooper & Cartwright, 1994; Vecchio, 1995 as summarized in Danna & Griffin, 1999).

Public Service Motivation

In public sector organisations motivation to do the job well can come from the motivation to serve the public, also known as public service motivation (PSM). PSM is “ an individual’s predisposition to respond to motives grounded primarily or uniquely in public institutions and organisations” (Perry & Wise, 1990, p. 368)”. Perry (1996) argues that there are three different categories of motivational dimensions underlying the PSM construct. First, there are rational motives which are based on the utility maximization of an individual. An example of a rational motive is the attraction to public policy making. This motive “can be exciting and dramatic and can reinforce one’s image of self-importance” (Perry, 1996, p.6). An example of a rational motive is a person choosing to work in a public institution to be able to participate in formulating public policy (Kelman, 1987). Second, there are normative motivations for public service. One of these motivations is the commitment to the public interest. Thus, what an individual wants to contribute to society either through public service or through supporting policies unselfishly. Last, there are affective motivations such as compassion with other individuals in society or patriotism.

PSM is seen as a positive attribute to have as an employee, because it contributes to several factors of well-being, such as job satisfaction and organisational commitment, but is also associated with a better performance (Vandenabeele, 2009). One of the core concepts of PSM is altruism (Shim & Faerman, 2015). It is thus not strange that several studies show that PSM contributes to extra-role behaviour outside the organisation, such as social altruism (Brewer, 2003) and links with more voluntary activities (Houston, 2005). On top of this, recent work shows that PSM also links with exhibiting more OCB (e.g. Pandey, Koumenta, 2015; Shim & Faerman, 2015).

THEORY AND HYPOTHESES

Relation between OCB, CCB and well-being

In this chapter we will discuss prior literature on the relation between OCB and CCB and the three dimensions of well-being. We will also discuss literature on the relationship between PSM and the relation between OCB/CCB and well-being. Based on the literature we will formulate our hypotheses.

Psychological well-being

As mentioned above, psychological well-being is the amount of happiness people experience. Some aspects that fall within this dimension are organisational commitment and job satisfaction (Van de Voorde et al. 2012). A meta-analysis by Podsakoff et al. (2000) shows that organisational commitment is positively related to OCB. Later studies confirm this relationship (e.g. Cohen, Ben-Tura & Vashdi, 2012; Chih, Yang & Chang, 2012) Research on the relationship between organisational commitment and CCB is missing. The second aspect that falls within the psychological dimension of well-being is job satisfaction. Many articles found a positive association between job satisfaction and OCB (for example: Williams and Anderson, 1999; Moorman, Niehoff & Organ, 1993 and Schappe 1998). Podsakoff et al. (2000) found numerous articles that measure job satisfaction as an antecedent to OCB. In this article we propose that the relationship can also be the other way around; OCB can be an antecedent of job satisfaction, because if an employee goes the extra mile on the job he or she will be more satisfied with his or her job. Only one study investigated the effects CCB has on job satisfaction. Vigoda-Gadot (2007) concluded that CCB relates to a lower amount of job satisfaction. Based on these previous studies we formulate the following two hypotheses:

H1a: OCB is positively correlated with the psychological dimension of well-being.

H1b: CCB is negatively correlated with the psychological dimension of well-being.

Physical well-being

Physical well-being centres on the health of employees. Spector and Jex (1998) make a distinction within this dimension between stressors and strains. Stressors are events which cause stress; for example a high workload. Miles, Borman, Spector and Fox (2002) found a positive significant relation between workload and OCB. Responses to stressors such as a high workload is called a strain (Spector & Jex, 1998). An example of a strain is job stress which is “an unpleasant emotional experience associated with elements of fear, dread, anxiety, irritation, annoyance, anger, sadness, grief, and depression” (Motowidlo, Packard, & Manning, 1986, p. 618). Few studies investigated the relation between OCB and job stress. Bolino and Turnley (2005) found that if OCB is the result of individual initiative, the amount of job stress increases. The few studies that have investigated CCB all conclude that the extra

pressure to conduct extra-role behaviour relates to more job stress (Vigoda-Gadot, 2007; Peng and Zhao, 2012; Bolino, 2015).

Thus we hypothesize that both OCB and CCB have a negative effect on physical well-being. We therefore formulate the following hypotheses.

H2a: OCB is negatively correlated with the physical dimension of well-being.

H2b: CCB is negatively correlated with the physical dimension of well-being.

Social well-being

Social well-being is the dimension concerned with the relationships of the employee. These relationships can be vertical, with a supervisor or the organisation, or horizontal, with colleagues. There are several ways to measure social well-being based on Van de Voorde et al. (2012). The first dimension that falls under social well-being is the perceived support of the organisation (POS). This dimension focuses on the relationship between the employee and the organisation itself. Studies show that there is a positive relationship between POS and OCB (Podsakoff et al. 2000; Hopkins, 2002) We found no prior research on the relation between CCB and POS. This study investigates the relationship between OCB and POS as well as CCB and POS. We suspect that OCB relates with a more positive view of the support of the organisation, while CCB relates with less perceived organisational support. We therefore formulate the following hypotheses:

H3a: OCB is positively correlated with perceived social well-being.

H3b: CCB is negatively correlated with perceived social well-being.

Moderating role of PSM

Previous studies have shown that when an employee has more PSM this employee shows more OCB (e.g. Caillier, 2015; Campbell & Tobin, 2015). To our knowledge, no studies have looked into the relationship between PSM and CCB. In this study we argue that PSM influences the relationship between OCB and the different dimensions of well-being as well as CCB and the different dimensions of well-being. Based on the literature we suggested in the previous hypotheses that OCB relates to a higher psychological, a lower physical and a higher social well-being. We also hypothesized that CCB relates to a lower level of psychological, physical and social well-being. In the next chapter we suggest that if an employee has a high level of PSM, the positive relationship between OCB and dimensions of well-being are stronger, while the negative relationship between OCB and dimensions of well-being are less strong. And we hypothesize that the relationships between CCB and the dimensions of well-being are less strong.

OCB and PSM

When discussing employee behaviour in the public sector it is important to be aware of the fact that the motivation of public-sector employees is different than the motivation of private-sector employees. In the public sector, public sector motivation plays a key role. If employees who work in a public institution do their job well, they contribute to society. We therefore expect that if an employee shows a lot of PSM, the positive effect of OCB on the dimensions of well-being are even stronger. And the negative effects of OCB on dimensions of well-being will be weaker. We formulate the following hypothesis:

H4: PSM moderates the relationship between OCB and psychological and social well-being such that these positive relationships become stronger and moderates the relationship between OCB and physical well-being, such that the negative relationship between OCB and physical well-being becomes less strong.

CCB and PSM

In the public sector the influence of stressors such as CCB on well-being might be influenced by PSM. The influence PSM can have on the relationship between stressors and well-being was shown by Liu et al. (2014) and Shim, Park and Eom (2015). Liu et al. (2014) found that employees who experience a lot of stressors with a high level of PSM have a higher level of mental well-being than employees with a lower level of PSM. However, this mitigating role of PSM was only found for the relation between stressors and mental well-being, not between stressors and physical well-being. Shim et al. (2015) argued that PSM could also mitigate the effect between high job demands and turnover intentions and the relation between work exhaustion and turnover intentions. The underlying reasoning is that employees with a high level of PSM want to altruistically contribute to society and are therefore less disturbed by stressors such as work exhaustion and a high level of job demands.

Podsakoff et al. (2007) argued that there are different types of stressors employees can experience. First, there are challenge stressors. These stressors are seen as an opportunity to grow and achieve goals. The second type of stressors are hindrance stressors. These stressors are perceived as constraining factors which prevent employees to grow and to reach their goals. Employees with a high level of PSM might see certain stressors as challenge stressors, for example an employee with a high level of PSM might see a lot of job demands as a challenge, while an employee with a low level of PSM might see this as a hindrance stressor.

Thus, previous research showed that PSM moderates the association between certain stressors and (types of) well-being. The same logic can be applied to CCB. The negative influence (i.e. pressure to perform) extra-role behaviour has on well-being might be less strong for employees who have a high level of PSM because their intention to contribute to society, which public sector employees do through

their job, disturbs them less. We therefore expect that PSM weakens the negative relationship between CCB and well-being.

H5: PSM negatively moderates the relationship between CCB and well-being, such that the negative relationship between CCB and dimensions of well-being becomes less strong.

Figure 1 Illustrates the conceptual model underlying this research paper and thus summarizes our hypotheses.

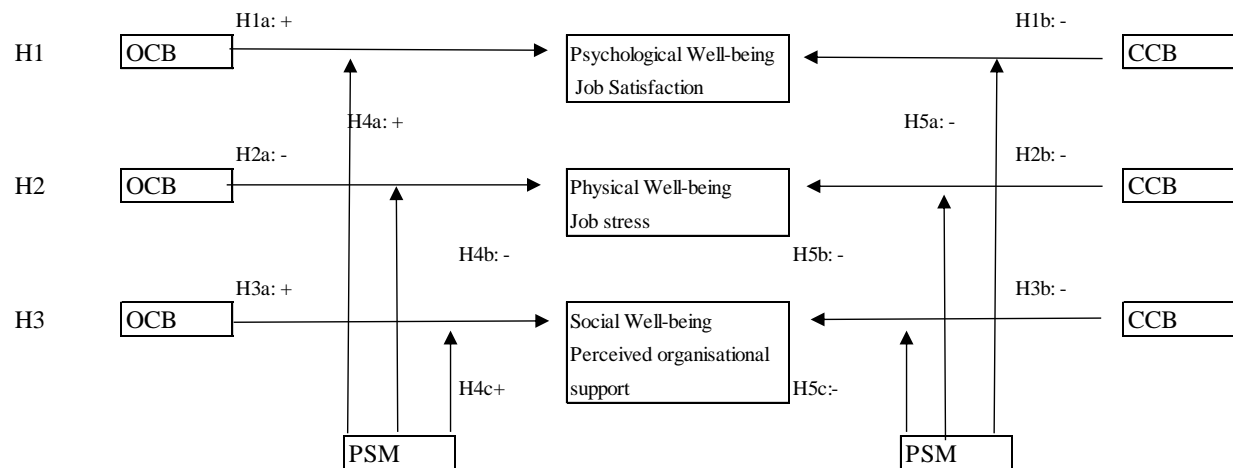


Figure 1: Conceptual Model

METHODS

Sample

The sample for this study consists of Dutch PhD-students. In the Netherlands there are four different types of PhD-students (VSNU, 2013). There are students who are employed by a university or medical centre, who are the employee PhD-students. There are students who work at a university or medical centre but are not employed firstly as a PhD-student. Third, there are PhD-students who are not employed at a university or medical centre but who received a grant. Lastly, there are PhD-students who are not employed at a university nor medical centre and do not receive a grant (VSNU, 2013). The last type of PhD-students are not taken into account in this study. In 2014 there were 8741 PhD-students in the Netherlands (KNAW, 2016).

Recent studies have highlighted the work pressure and well-being of academics and PhD's specifically. Young academics such as PhD-students are sensitive for stress since they experience high levels of job insecurity (Kinman, 2001). A recent study conducted among PhD-students in Belgium indicated that PhD-students have a higher risk to have or develop common psychiatric disorders. This is the result of a high level of job demands, job control, leadership style of the supervisor, team decision-making culture, the perception of a career outside academia and work-family conflict (Levecque et al. 2017). Because of the indications that PhD-students experience large amounts of work pressure, PhD students are interesting units of analysis to study for possible effects of OCB and CCB on well-being.

Data collection

Data was collected through a web-based survey among PhD-students at Dutch universities. Two methods were used to contact PhD-students. First, local PhD councils were asked to distribute the survey among their members. Second, we contacted 1378 PhD-students directly via email. These email addresses were collected from via the websites of three randomly chosen Universities after the heads of the departments or the HR managers were notified. The last survey was sent in June 2017. Multiple data collection methods were used because some universities were hard to access via the PhD-council. This might lead to an unrepresentative sample of the Dutch PhD-students.

Seven hundred and twenty-two PhD-students filled out the survey. Next we excluded the external PhD-students, the incomplete survey's and the PhD-students of universities which had less than twenty respondents. This was done because we want to see if there are significant differences in employee well-being between the different universities. Our final sample consists out of 333 cases (n=333) of five different universities. The respondents of three of these universities (D, E and I, n= 242) were contacted directly via email and the respondents of the other three universities (F and N, n=91) were contacted via the local PhD-council. A flowchart of the data collection can be found in figure 2.

The respondents of our sample are derived from five universities. With one of the universities accounting for almost 20% of the PhD-students. Most PhD-students (70%) are funded PhD-students, which means they are appointed at the university. The majority of the PhD-students in our sample are doing a PhD in sciences (35%) or social sciences (33%). The largest part of the PhD-students are currently in the executing stage of their PhD (66%). One hundred and thirty-five (41%) respondents are male and the age of the participants ranges from 22 to 50 years ($M=28.7$, $SD=4.02$). Other descriptive statistics of the sample can be found in table 2.

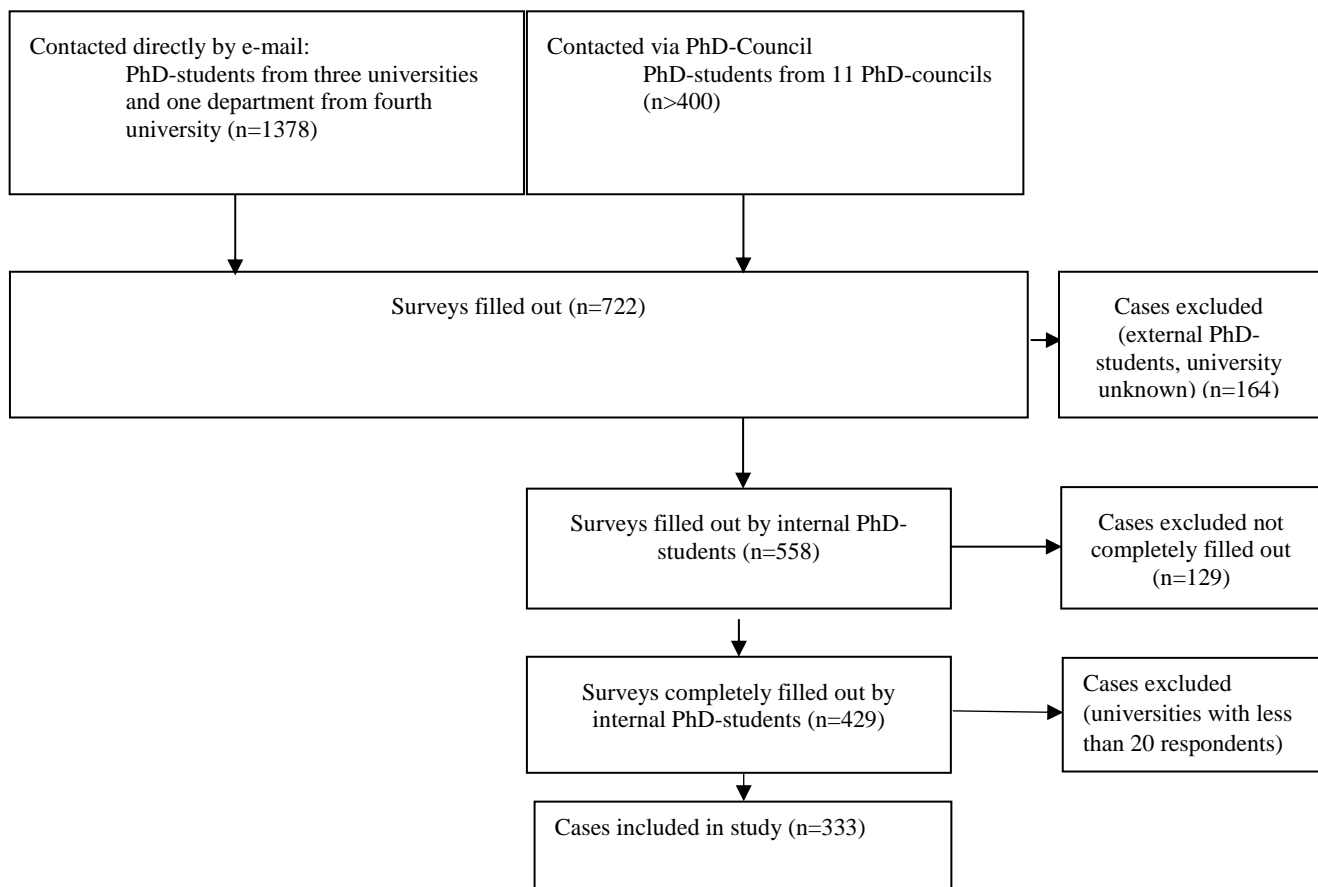


Figure 2: flow chart data collection

Table 2:

Descriptive statistics of sample

		%	M	SD	Min- Max
Age			28,7	4,03	22-50
Male		40,8			
University					
	D	7,2			
	E	17,4			
	F	19,2			
	I	48			
	N	8,1			
Field of study					
	Sciences	35			
	Biomedical Sciences	16,6			
	Applied Sciences	12,1			
	Humanities	3			
	Social Sciences	33,2			
Type of appointment					
	Funded PhD student	69,7			
	Contract PhD student	25,5			
	Other internal PhD student	4,8			
Phase PhD					
	Planning	8,4			
	Executing	66,3			
	Finishing	25,3			

Characteristics of PhD students (N= 333): percentage (%), mean (M), standard deviation (SD) minimum-maximum (Min-Max).

Dependent variables

Organisational Citizenship behaviour (OCB) was measured with a scale developed by Allen and Lee (2002). This scale uses eight items to measure OCBI and eight items to measure OCBO. One item of OCBI and two items of OCBO were not measured because they are not suitable for the situation of PhD-students. Although this scale was originally developed for co-worker reported and supervisor reported measurements, this scale has also been used for self-reported measurements of OCB (e.g. Finkelstein & Penner, 2004; Saks, 2006). Items were given on a 5- point Likert scale ranging from (1) never to (5) always. An example item for OCBI is “How often do you help others who have been absent?” And an example item for OCBO is: “How often do you attend functions that are not required but that help the organisational image?” The full scale can be found in Appendix 1. We conducted a principal component

analysis with oblique rotation to determine the factors of OCB. We choose an oblique rotation because we assume that all factors are correlated with each other. The Kaiser-Meyer-Olkin measure indicated that the sample was adequate for the analysis (KMO= 0.78). Bartlett's test of sphericity ($\chi^2 (78)= 972,327$, $p<0.001$) was significant and thus showed that the correlations between the items were sufficient for PCA. Three components had an Eigenvalue greater than Kaiser's criteria of 1, however the Eigenvalue of the third value was close to one. We therefore consulted the scree plot to determine the number of components. Based on the scree plot we formed two components: OCBI and OCBO. Component 1 represents OCBI and Component 2 represents OCBO. The two components both explain 42.5% of the variance. The results of this factor analysis can be found in appendix 2.

The internal reliability of both subscales was acceptable (Cronbach's $\alpha=0.73$ for OCBI and Cronbach's $\alpha= 0.74$ for OCBO).

Compulsory Citizenship Behaviour (CCB) was measured with a scale developed by Vigoda-Gadot (2007). This scale uses five items to measure CCB. An example item is: "The management in this organisation puts pressure on employees to engage in extra-role work activities beyond their formal job tasks"; Responses were given on 5-point Likert scale ranging from (1) never to (5) always. The full scale can be found in appendix 1. Principal component analysis indicated that one component could be distinguished with an Eigenvalue greater than Kaiser's criterion of 1. This component explained 56.58 of the variance. The Kaiser-Meyer-Olkin measure indicated that the sample was adequate for the analysis (KMO=0.78). Bartlett's test of sphericity $\chi^2 (10)= 521,323$, $p<0.001$. was significant and thus showed that the correlations between the items were sufficient for PCA. This scale was also found to be reliable with Cronbach's $\alpha= 0.81$. The factor analysis can be found in appendix 3.

Independent variables

Well-Being

To be able to give a full insight into the relationship between OCB, CCB and well-being, we chose variables that measure all three dimensions of well-being: happiness, health and relationships (Grant et al. 2007). Based on the literature review by Van De Voorde, Paauwe and Veldhoven (2012) measurements were selected to operationalise the different dimensions of well-being. We use job satisfaction to measure psychological well-being, job stress to measure physical well-being and perceived organisational support to measure social well-being. Unless otherwise stated, responses were given on a seven-point Likert scale with answers ranging from 1 (strongly disagree) to 7 (strongly agree). The full scales can be found in appendix 1.

Job satisfaction was measured with one item obtained from the Michigan Organisational Assessment Questionnaire- Job Satisfaction subscale (Cammann, Fichman, Jenkins & Klesh, 1979). Validity and reliability were tested by Bowling and Hammond (2008). The item reads: "All in all I am satisfied with my job."

Job Stress was measured using a scale developed by Motowidlo et al. (1986). This scale uses four items to measure job stress: “My job is extremely stressful”, “Very few stressful things happen to me at work” (reverse scored), “I feel a great deal of stress because of my job,” and “I almost never feel stressed because of my work” (reverse-scored). Internal reliability was satisfactory (Cronbach’s $\alpha = 0.85$).

Perceived Organisational Support (POS) was measured using the short version of the Survey of Perceived Organisational Support (Eisenberger, Cummings, Armeli & Lynch, 1997; Lynch, Eisenberger, Armeli, 1999). This scale uses 8 items to measure POS. Example items are “My organisation strongly considers my goals and values” and “My organisation cares about my opinions”. Internal reliability of POS was acceptable (Cronbach’s $\alpha = 0.87$).

A principal component analysis with oblique rotation (Appendix 4) was conducted to distinguish the several factors of well-being. PCA was selected because we want to reduce our data rather than build theory. Oblique rotation was chosen because it is likely that the factors are correlated. The Kaiser-Meyer-Olkin measure indicated that the sample was adequate for the analysis (KMO= 0.87). Bartlett’s test of sphericity ($\chi^2 (78) = 1992,408, p < 0.001$) indicated that the correlations between the different items were significant and thus showed that the correlations between the items were sufficient to carry out PCA. Two components had eigenvalues higher than Kaiser’s criterion of 1 and in total explained 56.94% of the variance in the scale. Both the eigenvalues and the scree plot indicated two components were suitable for this scale. The first component represents POS and the second component represents job stress. The item that measures job satisfaction loaded on both factors. Based on theoretical grounds, we however chose to take job satisfaction as a separate, third dimension of well-being. POS and job stress both have a high internal reliability of respectively Cronbach’s $\alpha = 0.87$ and Cronbach’s $\alpha = 0.85$.

Moderating variables

Public Service Motivation was measured using a scale developed by Coursey and Pandey (2010). This abridged version of the 1996 PSM scale designed by Perry measures three type of PSM. We choose this scale, because it might be that some dimensions of PSM do influence the relation between citizenship behaviour and well-being while other dimensions of PSM might not. Three items are used to measure *attraction to public policymaking*, four items are used to measure *commitment to public interest and civic duty* and three items are used to measure *compassion*. Example items are: attraction: “Politics is a dirty word” (reversed), commitment: “I unselfishly contribute to my community” and compassion: “It is difficult for me to contain my feelings when I see people in distress”. The full scale can be found in Appendix 1. Responses were given on a 7-point Likert-scale ranging from 1 (I strongly disagree) to 7 (I strongly agree).

A principal component analyses (PCA) with oblique rotation was conducted to determine the factors of PSM and reliability tests were conducted to test the internal reliability (Appendix 5). We choose PCA because we want to reduce our data rather than build theory. Oblique rotation was chosen

because it is likely that the factors are correlated. The Kaiser-Meyer-Olkin measure indicated that the sample was adequate for the analysis (KMO= 0.74). Bartlett's test of sphericity ($\chi^2(45)=600,801, p<0.001$) was significant and thus showed that the correlations between the items were sufficient for PCA. Three components had eigenvalues higher than Kaiser's criterion of 1 and in total explained 55.95% of the variance. The scree plot showed that two components could also be the case. Based on Kaiser's criterion and theoretical support three components were retained. Component 1 represents PSM commitment, component 2 represents PSM attraction and component 3 represents PSM compassion.

Next, we tested the internal reliability of the PSM subscales. One item of the commitment subscale did not load on the same factor as the other three items of this subscale. The reliability analysis also indicated that the reliability of the subscale increased if this item was deleted. We therefore deleted this item from the subscale. The Cronbach's alpha for this subscale was, after deletion of the item satisfactory (Cronbach's $\alpha=0.76$). The reliability of PSM attraction was slightly lower with Cronbach's $\alpha=0.68$. Cronbach's alpha would not increase if an item was to be removed. Since it is a scale with just a few items a Cronbach's α of 0.68 is acceptable (Hair, Black & Babin, 2010). The internal consistency of the compassion scale was problematic (Cronbach's $\alpha=0.29$). The internal consistency of this scale could not be increased to an acceptable level by deleting an item. The factor analysis also indicated that the items were not measuring the same phenomenon. We therefore chose to not take this scale into account in our analyses.

Control variables

In line with the study by Levesque et al. (2017) on the mental health of Belgian PhD-students we selected measures concerning the perceived career perspective of the PhD-student, the ambition of the PhD-student, the discipline of the PhD, university and the current phase of the PhD trajectory. In line with previous studies (Noblet & Rodwell, 2009; Decramer, Van Waeyenberg, Claes & van Loon, 2014) on the determinants of employee wellbeing, we also selected supervisor and co-worker support and demographic variables as control variables to include in our statistical model. All full scales can be found in appendix 1.

Ambition to pursue an academic career was measured using one item developed by Levecque et al. (2017). This item is: "To what extent are you interested in working at the university in the future?" With three answer possibilities: not, a little or much.

Perception of high chance of an academic career was measured using one item developed by Levecque et al. (2017). This item is: "How big do you perceive your chance of finding a job in academia?"

Perceived chance of finding a job after a PhD was measured using two items developed by Levecque et al. (2017). An example item is “A PhD in my field of study prepares one sufficiently for a career outside academia.”.

Supervisor support and co-worker support were both measured with three items each derived from a scale developed by House (1981) and modified by Yoon & Thye (2000). Example items are “My supervisor can be relied on when things get tough on my job.” And “My co-workers are helpful to me in getting my job done”. Answers were given on a 7-point Likert scale ranging from (1) I strongly disagree to (5) I strongly agree.

We conducted a PCA to indicate if co-worker support and supervisor support could be divided in subscales (Appendices 6 & 7). The PCA of co-worker support indicated that there was 1 component which had an Eigenvalue greater than Kaiser’s criterion of 1. The Kaiser-Meyer-Olkin measure indicated that the sample was adequate for the analysis (KMO= 0.72). Bartlett’s test of sphericity χ^2 (3)= 360,587, $p < 0.001$. was significant and thus showed that the correlations between the items were sufficient for PCA. This component explained 74.02 of the variance. The PCA of supervisor support also indicated that there was 1 component which had an Eigenvalue greater than Kaiser’s criterion of 1. The Kaiser-Meyer-Olkin measure indicated that the sample was adequate for the analysis (KMO= 0.70). Bartlett’s test of sphericity χ^2 (45)= 438,421 $p < 0.001$. was significant and thus showed that the correlations between the items were sufficient for PCA. The component explained 76.29 of the variance. Internal reliability of these scales was satisfactory Cronbach’s $\alpha = 0.84$ for supervisor support and Cronbach’s $\alpha = 0.82$ for co-worker support.

Common method bias

When conducting a survey that uses self-reported measures for both the independent and dependent variables it is important to tackle issues of common source bias. McKenzie & Podsakoff (2012) argue that common source bias does not make this type of data unusable if certain steps are taken. We used the flowchart developed by George and Pandey (2017) to keep the effects of common source bias on the data as small as possible. Based on this flowchart we asked ourselves four questions as proposed by George and Pandey (2017). First, we checked if the variables were strongly correlated with each other (i.e. see our correlation table) and if common method variance was so high as to create dangers of common source bias (i.e. through Harman’s one-factor test). As evident from Table 3 there were no high correlations between the different variables tested in this study. OCBO, CCB and OCBI all correlated significantly with each other. There were positive significant correlations between OCBO and job satisfaction and POS. CCB correlated negatively significant with job satisfaction and POS significantly positive with job stress. However none of these correlations were higher than $r = 0.5$. Next, we performed a Harman’s one-factor test to establish the amount of common method variance. This was seemingly limited: the most explained variance in the factor was 15%. Second, we checked if one of our variables

are mentioned in the four studies of CSB in public administration. This was not the case. Third, we established that the variables we use are by nature perceptual variables. This means we have to use a survey and cannot rely on other sources such as archival data. Last, we use multiple items to measure our variables and checked the scale reliability of our items. All scales had a satisfactory internal reliability (Appendices 2-7).

Next to keeping above points in mind we also followed the advice of Podsakoff et al. (2012) to design the survey in such a way that respondents are motivated to fill it in accurately. We for example labelled all scale points and included motivations in the cover text and introductory e-mail. Thus, we are aware of the fact that using a survey to collect our data leads to a risk of common source bias. But, because we took measures to reduce the impact of common source bias we do not expect a significant influence of CSB on our correlation. Second, a meta-analysis conducted by Carpenter (2014) established that there is no significant difference in measuring OCB via other-reports than when OCB is measured using self-reported measures – thus further validating our usage of a single self-reported survey.

Descriptive statistics and correlations

The Pearson's correlations (table 3) indicate that OCBI and OCBO are positively correlated ($r(327)=0.30$, $p<0.01$, two-tailed). These correlations also indicate that there is a positive significant relation between OCBI and CCB ($r(327)=0.18$, $p<0.01$, two-tailed), no significant relation was found between OCBO and CCB. There are also significant positive correlations between PSM commitment and OCBI ($r(328)=0.16$, $p<0.01$, two-tailed), PSM commitment and OCBO ($r(329)=0.26$, $p<0.01$, two-tailed) and between PSM commitment and CCB ($r(330)=0.144$, $p<0.05$, two-tailed). No significant correlations were found between PSM attraction and OCB and CCB. The correlations also indicate that there are no significant relations between OCBI and the outcome variables. OCBO is significantly positive related with job satisfaction ($r(328)=0.23$, $p<0.01$, two-tailed) and POS ($r(328)=0.31$, $P<0.01$, two-tailed). Last, CCB is significantly negative related with job satisfaction ($r(329)=-0.36$, $p<0.01$, two-tailed) and POS ($r(328)=-0.39$, $p<0.01$, two-tailed) and significantly positive related with job stress ($r(329)=0.48$, $p<0.01$, two-tailed).

Table 3:

Descriptives and Pearson's correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. OCBI	1													
2. OCBO	,30**	1												
3. CCB	,18**	,11	1											
4. PSM attraction	-,04	,09	-,05	1										
5. PSM commitment	,16**	,26**	,14*	,16**	1									
6. Age	,07	,04	,02	,07	,19**	1								
7. Gender	-,08	-,01	,05	-,05	,02	-,07	1							
8. Supervisor support	,06	,08	-,39	,02	,01	-,04	-,14**	1						
9. Co-worker support	,1	,12*	-,18**	,14*	-,01	-,11*	-,07	,18**	1					
10. Perceived job chance outside	,03	,10	-,12*	,03	,03	-,10	-,07	,29**	,21**	1				
11. Academic ambition	,17**	,26**	-,19**	,08	,13*	,17**	-,10	,22**	,11*	-,01	1			
12. Perceived chance job academia	,15**	,09	-,16**	-,04	,06	,01	-,04	,14*	,16**	,13*	,32**	1		
13. Job satisfaction	,06	,23**	-,36**	,13*	,08	-,03	-,13*	,51**	,35**	,26**	,33**	,20**	1	
14. job stress	-,01	,00	,48**	-,09	,03	,04	,08	-,24**	-,16**	-,11*	-,16**	-,19**	-,45**	1
15. POS	,07	,310**	-,39**	,06	,03	-,06	-,12*	,43**	,32**	,28**	,19**	,20**	,47**	-,29**

Note: N=333, *= $p < 0.05$, **= $p < 0.01$

Statistical analysis

A multiple linear regression (table 4) was conducted to create a model to test our hypotheses concerning the relation between two forms of OCB, CCB and three forms of well-being: psychological, physical and social well-being. Statistical analyses were undertaken with SPSS 23 for Windows.

Data were screened for violations of the assumptions of multiple regression as indicated by Field (2009). We checked, among others for outliers and influential cases, multicollinearity, homoscedasticity, independent errors and normally distributed errors. The regression with job satisfaction had one case that did not withstand the Mahalanobis test and was thus removed from the analysis. All other assumptions for this regression were met. The regression model with job stress as dependent variable had one case that did not have a covariance ratio between the norm and this case also had a very high standard residual. This indicates that this case is probably an influential case. This case was therefore deleted from the analysis. All other assumptions for this regression model were met. Last, three cases were deleted from the regression model with POS as dependent variable. These three cases did not meet the criteria for the covariance ratio and were therefore considered influential cases. All other assumptions for this regression were met.

To reduce multicollinearity between the variables used in the interaction (e.g. OCBI and PSM attraction) the variables were centred by subtracting the variable mean from the variable. Next the interaction terms were developed.

Next, three different models were created based on the three different dependent variables. Blocks of independent, interaction and control variables were entered in the following order: (1) independent variables and control variables, (2) PSM variables and (3) interaction variables. In the next chapter we discuss the results of the multiple linear regression.

RESULTS

Table 4:

Results of multiple regression analyses

Independent variable	Job satisfaction		Job stress		POS	
	B	SE	B	SE	B	SE
Step 1						
Constant	0.31	.83	4.07***	.83	1.79**	.52
OCBI	-.05	.12	-.12	.12	.02	.08
OCBO	.33**	.11	-.05	.11	.44***	.07
CCB	-.30***	.09	.77***	.09	-.35***	.06
Gender* (Male = 0)	-.14	.12	.12	.13	-.07	.08
Age	.00	.02	.01	.02	.00	.01
Chance job outside	.08	.05	-.02 ⁺	.06	.09	.04
Supervisor Support	.32***	.06	-.02	.06	.13***	.04
Co-worker support	.31***	.07	-.07	.07	.15**	.04
Ambition working in academia	.29**	.10	-.05	.10	.02	.06
Chance working in academia	.08	.09	-.17	.09	.14	.06
Uni D (Uni I=zero)	.09	.27	-.14	.28	-.26	.17
Uni E (Uni I=zero)	-.06	.20	.03	.20	-.24 ⁺	.13
Uni F (Uni I=zero)	-.06	.20	-.65**	.20	-.10	.13
Uni N (Uni I=zero)	-.40	.26	.13	.26	-.19	.17
Discipline: Biomedical science (science =0)	.34	.22	.14	.23	-.12	.14
Discipline: applied (science =0)	.14	.20	.12	.20	-.16	.13
Discipline: humanities (science =0)	.59	.38	-.14	.38	.12	.24
Discipline: Social (science =0)	.22	.18	-.06	.18	-.17	.11
Phase: Planning(Finishing= 0)	.54*	.24	-.55*	.25	.41*	.16
Phase: Executing (Finishing= 0)	.43**	.14	-.12	.15	.17 ⁺	.09
R2	.44		.33		.49	
Adjusted R2	.40		.29		.45	
F	11.88***		7.44***		14.20***	
Step 2						
Constant	0.15	.85	4.23***	.85	1.76**	.53
OCBI	-.05	.12	-.12	.12	.02	.08
OCBO	.31**	.11	-.04	.11	.43***	.07
CCB	-.30***	.09	.77***	.09	-.35***	.06
Gender* (Male = 0)	-.14	.13	.11	.13	-.07	.08
Age	.00	.02	.01	.02	-.01	.01
Chance job outside	.08	.05	-.01*	.06	.09**	.04
Supervisor Support	.32***	.06	-.02	.06	.13***	.04
Co-worker support	.30***	.07	-.05	.07	.15**	.05
Ambition working in academia	.28**	.10	-.05	.10	.02	.06
Chance working in academia	.09	.09	-.18	.09	.14*	.06
Uni D (Uni I=zero)	.09	.28	-.15	.28	-.26	.17
Uni E (Uni I=zero)	-.05	.20	.03	.20	-.24 ⁺	.13
Uni F (Uni I=zero)	-.07	.20	-.63**	.20	-.10	.13
Uni N (Uni I=zero)	-.39	.26	.12	.26	-.19	.17
Discipline: Biomedical science (science =0)	.34	.23	.13	.23	-.13	.14
Discipline: applied (science =0)	.13	.20	.12	.20	-.17	.13
Discipline: humanities (science =0)	.55	.38	-.11	.39	.11	.24

Discipline: Social (science =0)	.19	.18	-.03	.18	-.18	.12
Phase:						
Planning(Finishing= 0)	.54*	.24	-.55*	.25	.40*	.16
Phase: Executing (Finishing= 0)	.42**	.14	-.11	.15	.17	.09
PSM attraction	.05	.07	-.08	.07	.00	.04
PSM commitment	.04	.08	.00	.08	.03	.05
R2	.44		.3		.49	
Adjusted R2	.40		.28		.45	
F	10.80***		6.80***		12.84***	
Step 3						
Constant	0.23	.86	4.37***	.85	1.76**	.53
OCBI	-.11	.13	-.16	.13	.00	.08
OCBO	.33**	.11	-.03	.11	.46***	.07
CCB	-.27**	.09	.78***	.09	-.36***	.06
Gender* (Male = 0)	-.13	.13	.09	.13	-.04	.08
Age	.00	.02	.01	.02	.00	.01
Chance job outside	.09	.06	-.01**	.06	.09*	.04
Supervisor Support	.32***	.06	-.01	.06	.12**	.04
Co-worker support	.30***	.07	-.07	.07	.15**	.05
Ambition working in academia	.30**	.10	-.06	.10	.04	.06
Chance working in academia	.08	.09	-.19	.09	.15*	.06
Uni D (Uni I=zero)	.10	.28	-.16	.28	-.27	.17
Uni E (Uni I=zero)	-.03	.20	.02	.20	-.22+	.12
Uni F (Uni I=zero)	-.06	.20	-.68**	.20	-.08	.13
Uni N (Uni I=zero)	-.33	.26	.11	.26	-.17	.16
Discipline: Biomedical science (science =0)	.30	.23	.10	.23	-.10	.14
Discipline: applied (science =0)	.09	.20	.07	.21	-.14	.13
Discipline: humanities (science =0)	.46	.38	-.15	.39	.10	.24
Discipline: Social (science =0)	.16	.18	-.06	.19	-.17	.12
Phase:						
Planning(Finishing= 0)	.54	.25	-.58*	.25	.45**	.16
Phase: Executing (Finishing= 0)	.42*	.14	-.12	.15	.18*	.09
PSM attraction	.05**	.07	-.05	.07	.00	.04
PSM commitment	.01	.08	.03	.09	.00	.05
OCBI* PSM attraction	.28	.14	.03	.14	.10	.09
OCBI*PSM commitment	-.09*	.14	-.07	.14	-.11	.09
OCBO*PSM attraction	-.16	.10	.00	.10	-.04	.06
OCBO*PSM commitment	-.07	.12	.23+	.12	-.01	.08
CCB*PSM attraction	-.02	.09	.18*	.09	-.20***	.06
CCB*PSM commitment	-.04	.10	.13	.10	.00	.06
R2	.45		.35		.51	
Adjusted R2	.40		.29		.47	
F	8.72***		5.74***		11.07***	

Note. Sample size =job satisfaction =323, job stress 323, POS 321

+ p < .10, * p < .05, ** p < .01 and *** p < .00.1

Job satisfaction

The results from the regression (table 4) indicate that the independent variables and the control variables together explain 44% of the variance in job satisfaction ($R^2=0.44$, $F(11,884)=20,322$, $p<0.001$), the full model explained 45% of the variance in job satisfaction ($R^2=0.45$, $F(8,722)=28,322$, $p<0.001$). The model provides partial support for hypothesis 1a and full support for hypothesis 1b. OCBO correlates significant positively with job satisfaction ($B=0.33$, $p<0.01$), while CCB correlates negatively significant with job satisfaction ($B=-0.27$, $p<0.01$). The model provides partial support for the hypotheses on interaction. There is a significant negative interaction by PSM commitment on the relationship between OCBI and job satisfaction. The model furthermore shows that PSM attraction ($B=0.05$, $p<0.01$) ambition to work in academia ($B=0.3$, $p<0.01$) supervisor support ($B=0.32$, $p<0.001$) and co-worker support ($B=0.30$, $p<0.001$) significantly contribute to job satisfaction. Last, the model shows that PhD-students who are in the executing phase of their PhD experience a significantly higher job satisfaction than PhD-students in the finishing phase of their PhD ($B=0.42$), $P<0.05$).

Job stress

Next, we developed a multiple linear regression (table 4) to predict job stress based on OCB and CCB and to test the interaction variables. The model with just the independent variables and control variable explains 33% of the variance in job stress ($R^2=0.33$, $F(20,322)=7.436$, $p<0.001$) while the full model explains 35% of the variance in job stress ($R^2=0.35$, $F(28,322)=5.741$, $p<0.001$). The model does not provide support for hypotheses 2a. In line with hypotheses 2b CCB correlates positively with job stress ($B= 0.78$, $p<0.001$). The model provides partial support for the hypotheses on interaction. PSM commitment interacts significantly positive the relation between OCBO and job stress and PSM attraction interacts significantly positive with the relation between CCB and job stress ($b= 0.18$, $p<0.05$). The model also indicates that perceived chance of job outside of academia reduces job stress slightly ($B=-0.01$, $p<0.01$). The model also shows that the PhD-students of University F experience significantly less job stress than PhD-students of University I ($B=-0.68$, $P<0.01$). Last, the model shows that PhD-students who are in the planning phase of their PhD experience significantly less job stress than PhD-students in the finishing phase of their PhD ($B=-0.58$, $P<0.05$).

POS

Last, we developed a multiple linear regression (table 4) to predict POS based on OCB and CCB and to test the moderation of PSM. The results indicate that the independent variables and control variables explain 49% of the variance in POS ($R^2=0.49$, $F(20,320)=14.20$, $p<0.001$). The full model explains 51% of the variance ($R^2=0.51$, $F(28,320)=11.07$, $p<0.001$). The results of the multiple regression provides partly support for hypothesis 3a. A significant positive relation was found between OCBO and POS ($B=0.46$, $p<0.001$). The results of the regression also provides support for hypothesis 3b. A negative

relation was found between CCB and POS ($B=-0.36, p<0.001$). The model also shows partial support for hypothesis h5. The interaction between CCB and PSM attraction was significant ($B= -0.20, p<0.001$) such that the negative relation between CCB and POS is less strong. Both supervisor support ($B=0.12, p<0.01$) and co-worker support ($B=0.15, p<0.01$) have a positive significant relation with POS. Next, both perceived chance of a job outside of academia ($B=0.09, p<0.05$) and the perceived chance of a job inside academia ($B=0.15, P<0.05$) have a significant positive correlation with POS. Last, both PhD-students in their planning phase ($B=0.45, p<0.01$) and PhD-students in their executing phase of their PhD ($B=0.18, p<0.05$) experience a significantly higher POS than PhD-students in their finishing phase of their PhD.

DISCUSSION

The contributions of our study to the field of public management are threefold. First, the results of this study contribute to the discussion on the effects of OCB on employee well-being. Prior studies found a positive relation between OCB and job satisfaction and OCB and POS. On the relation between OCB and job stress were not many studies conducted. Although prior studies showed that OCB has a positive influence on employee well-being the results of this study showed that, in the case of Dutch PhD-students, this is not always the case. The results of this study do not give evidence for a relation between OCBI and the three dimensions of employee well-being. The results of this study do suggest that there is a positive correlation between OCBO and job satisfaction and OCBO and POS. We did not find evidence for the negative relation between OCB and job stress. Thus, our study provides some evidence for a positive relation between OCBO and employee well-being and does not give evidence for a link between OCBI and employee well-being. Two arguments may explain these outcomes. First of all, the characteristics of the job of a PhD-students might explain these results. A PhD-trajectory is an individual one. Collaboration with colleagues might therefore be less than in any other job within the public sector. This could mean that the prevalence of OCBI, and the outcomes of OCBI on well-being might be different among PhD-students than in another profession. Second, the difference in significant relations between OCBO and OCBI might be the result of the operationalisation of employee well-being used in this study. For example, POS is a concept aimed at how an employee perceives the support of the organisation, not the support of other colleagues. This might be an explanation for why OCBI does not have a significant relation with POS and OCBO does have a significant relation with POS.

Second, the results of this study contribute to the discussion on the dark side of OCB. Recently, some studies suggested that OCB is not always a voluntary behaviour, but is the result of internal and external pressure (Vigoda-Gadot, 2006) This involuntary OCB is among others, called CCB. The empirical evidence from the few studies on CCB indicated that CCB has a negative influence on employee well-being (e.g. Bolino et al. 2010). Vigoda-Gadot (2007) for example found evidence of this negative relation in the context of teachers. Vigoda-Gadot (2007) called for more studies on this relation in other high pressure sectors. This study was therefore conducted among Dutch PhD-students who experience a lot of work pressure. This study confirms the results of prior studies that CCB relates to a lower employee well-being. By giving evidence for a negative relation between CCB and job satisfaction and CCB and POS. And by giving evidence for a positive relation between CCB and job stress.

Third, the evidence of this study suggest that in some cases PSM moderates the relation between OCB and employee well-being and CCB and employee well-being. Prior studies did look into the relationship between PSM and OCB (e.g. Koumenta, 2015; Shim & Faerman, 2015), but did not study the

moderating role of PSM on the relationship between OCB and well-being and CCB and well-being. We hypothesized that PhD-students with a high level of PSM would have a more positive relation between OCB and well-being because they would feel fulfilment from showing OCB. We also hypothesized that PhD-students with a high level of PSM might see the pressure to perform OCB as a challenge stressor and therefore their level of CCB might have a lower negative effect on employee well-being. The results of this study only partially support the hypotheses. In some cases we even found an opposite effect of what we expected. More studies on the moderating role of PSM on the relationship between citizenship behaviours and well-being is necessary.

Based on our study we identify several subjects for future studies. Firstly, the results of this study showed a relation between CCB and several dimensions of employee well-being. Due to the cross-sectional nature of this study we are not able to determine the direction of these relationships. Future studies with a longitudinal nature should focus on determining this direction. Secondly we suggest a study of qualitative nature to investigate the nature of the concept of CCB. The measure used in this study takes several potential influences of CCB into account: the organisation, the supervisor and colleagues. But most of all it measured an internalized pressure to show extra-role behaviour. It would be very interesting to see where this pressure originates from and how the organisation and individuals within that organisation play a role in this pressure. With such a study more solutions on reducing CCB could be developed.

Practical implications

Prior studies showed that PhD-students have a lower well-being than higher educated employees in another sector (Levesque et al.) 2017. This was mainly the reason to choose PhD-students as the sample of this study. This study adds further fuel to the evidence on the discussion on the well-being of PhD-students.

Based on this study universities should be aware that the pressure PhD-students feel to go beyond their formal job description can lead to a lower employee well-being. Universities, their HR-departments and PhD supervisors should try to reduce this internal pressure PhD-students experience by for example preventing working in free time and reducing publication pressure. But also PhD-students themselves should be aware that other PhD-students also experience this pressure. Universities should try to create a climate where this pressure is discussable.

Not only universities, but also other public sector organisations should be aware of the consequences of increased pressure on employees. Since the introduction of NPM in public organisations pressure on employees has increased (Korunka et al. 2003). In these organisations OCB might become extra important, but CCB might be more prevalent than before. This study shows that CCB has negative consequences on employees: it contributes to job stress and reduces job satisfaction and POS.

Organisations that are trying to work in a more business-like way, should be aware of the consequences this has on employees.

Based on this study we also suggest that universities look into the well-being of external PhD-students. External PhD-students were excluded from this study because they have a different working and living situation compared to internal PhD-students. We however received several mails from external PhD-students who were disappointed that they could not participate in this study. For example one PhD-student send us the following:

“I won’t have time to fill it [the survey] in tough, but I would like to give some comments to help. As PhD and close to other students I can tell that our mind, energy stays completely consumed by it. Most students have problem to sleep, stress, even follow some treatment. You don’t have your own life as when you were not a PhD. The social life is compromised. Some people face problem of not having close supervision or difficulty of communication with their professors, supervisors. Most of them doesn’t do anything about it. Nonetheless, the ones who love what they do feel satisfied because it is the time of our lives as researchers. The main chance to construct one new thing.”

These mails could be a sign of a low well-being of external PhD-students. We therefore suggest that universities study the well-being of this group of students. Not only should universities be aware of the consequences of CCB, other sectors with a lot of work pressure should take CCB into account and make it discussable.

Limitations

There are several limitations of this study that should be taken into account when interpreting the results of this study. Unfortunately, the universities were very hard to access to be able to collect data. Several methods were therefore used in this study to contact PhD-students. This may lead to an unrepresentative sample of the population. Second, selection bias may also be inflicted by the sensitive and personal topic of this study. PhD-students who for example experience a high level of job stress might be more inclined to fill out the questionnaire than PhD-students with a lower level of job stress. We however also received a mail from one of the respondents that in her department people with a lot of stress did not fill out the survey.

CONCLUSION

The goal of this study was to investigate the influence OCB and CCB have on employee well-being and to study the influence of PSM on these relationships. We studied the effects of OCB and CCB on three dimensions of well-being: psychological, physical and social well-being. We conducted the study among internal PhD-students of five Dutch universities.

The results of three multiple linear regression shows that opposed to prior research OCBI does not have a significant relation with employee well-being. OCBO has a positive correlation with job satisfaction and POS. In line with our hypotheses CCB correlates significantly negative with employee-well-being. Concerning the hypotheses on the moderation effects only four significant correlations were found. PSM commitment moderates the relationship between OCBI and job satisfaction negatively and PSM commitment also moderates the relationship between OCBO and job stress positively. PSM attraction moderates the relationship between CCB and job stress positively and moderates the relation between CCB and POS negatively. Thus we only found partial support for our hypotheses on interaction. Further research should investigate the nature of CCB and should identify the direction of the relationship between citizenship behaviour and well-being.

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APPENDIX 1: SCALES

OCBI (Allen & Lee, 2002)

1. Help others who have been absent.
2. Willingly give your time to help others who have work-related problems.
3. Adjust your work schedule to accommodate other employees' requests for time off.
4. Go out of the way to make newer employees feel welcome in the work group.
5. Show genuine concern and courtesy toward co-workers, even under the most trying business or personal situations.
6. Give up time to help others who have work or nonwork problems.
7. Assist others with their duties.

OCBO (Allen & Lee, 2002)

1. Keep up with developments in the organisation.
2. Defend the organisation when other employees criticize it.
3. Show pride when representing the organisation in public.
4. Offer ideas to improve the functioning of the organisation.
5. Express loyalty toward the organisation.
6. Demonstrate concern about the image of the organisation

CCB (Vigoda-Gadot, 2007)

1. The management in this organisation puts pressure on employees to engage in extra-role work activities beyond their formal job tasks.
2. There is social pressure in this organisation to work extra hours, beyond the formal workload and without any formal reward.
3. I feel that I am expected to invest more effort in this job than I want to and beyond my formal job requirements
4. I feel that I am forced to help colleagues beyond my formal obligations and even when I am short on time or energy.
5. I feel that I am forced to assist my supervisor against my will and beyond my formal job obligations.

PSM (Coursey & Pandey, 2008)
Attraction to Public Policymaking

OCB, PSM AND EMPLOYEE WELL-BEING

1. Politics is a dirty word (r).
2. The give and take of public policy-making does not appeal to me (r).
3. I don't care much for politicians (r).

Commitment to public interest/civic duty

4. I unselfishly contribute to my community.
5. Meaningful public service is very important to me.
6. I would prefer seeing public officials do what is best for the whole community, even if it harmed my interests. (*deleted from scale*)
7. I consider public service my civic duty.

Compassion (*not used in analysis*)

8. It is difficult for me to contain my feelings when I see people in distress.
9. I am often reminded by daily events about how dependent we are on one another.
10. I have little compassion for people in need who are unwilling to take the first step to help themselves (r).

WELL-BEING

Job satisfaction (Cammann et al. , 1979)

1. All in all I am satisfied with my job.

Job stress (Motowidlo et al., 1986)

1. My job is extremely stressful.
2. Very few stressful things happen to me at work (r).
3. I feel a great deal of stress because of my job.
4. I almost never feel stressed because of my work (r).

Perceived organisational support (Eisenberger et al. 1999)

1. My organisation strongly considers my goals and values.
2. My organisation really cares about my well-being.
3. My organisation shows very little concern for me (r).
4. My organisation would forgive an honest mistake on my part.
5. My organisation cares about my opinions.
6. If given the opportunity, my organisation would take advantage of me (r).
7. Help is available from my organisation when I have a problem.
8. My organisation is willing to help me when I need a special favour.

PhD ambition (Levecque et al. 2017)

1. To what extent are you interested in working at the university in the future?

Chance of career inside academia (Levecque et al. 2017)

2. How big do you perceive your chance of finding a job in academia?

Perception of career outside academia (Levecque et al. 2017)

3. A PhD in my field of study prepares one sufficiently for a career outside academia.
4. A PhD in my field of study can represent added value for future employers outside of academia.

Supervisor support (Yoon & Thye, 2000)

1. My supervisor can be relied on when things get tough on my job.

OCB, PSM AND EMPLOYEE WELL-BEING

2. My supervisor is willing to listen to my job-related problems.
3. My supervisor really does not care about my well-being (r).

Co-worker support (Yoon & Thye, 2000)

1. My co-workers are helpful to me in getting my job done.
2. My co-workers are willing to listen to my job-related problems.

APPENDIX 2: FACTOR ANALYSIS OCB

Table 5:

Principal component analysis OCB

Item	Factor OCBI	1: OCBO	Factor 2:
How often do you help colleagues who have been absent from work?	0.64		
How often do you willingly give your time to help colleagues who have work-related problems?	0.74		
How often do you adjust your work schedule to accommodate other employees' requests for time off?	0.40		
How often do you go out of the way to make newer employees feel welcome in the work group?	0.58		
How often do you show genuine concern and courtesy towards co-workers, even under the most trying business or personal situations?	0.60		
How often do you give up time to help others who have work or nonwork problems?	0.77		
How often do you assist others with their work duties?	0.62		
How often do you keep up with developments in the organisation?		0.50	
How often do you defend the organisation when other employees criticize it?		0.75	
How often do you show pride when representing the organisation in public?		0.74	
How often do you offer ideas to improve the functioning of the organisation?		0.56	
How often do you express loyalty toward the organisation?		0.78	
How often do you demonstrate concern about the image of the organisation?		0.57	
Eigenvalue	3.53	2.00	
R ²	0.27	0.15	
A	0.73	0.74	
N	329	330	

Note: Only factor loadings over 0.40 are shown.

APPENDIX 3: FACTOR ANALYSIS CCB

Table 6:

Principal component analysis CCB

	Factor 1: CCB
The management in this organisation puts pressure on employees to engage in extra-role work activities beyond their formal job tasks.	0,74
There is social pressure in this organisation to work extra hours, beyond the formal workload and without any formal reward	0,80
I feel that I am expected to invest more effort in this job than I want to and beyond my formal job requirements.	0,79
I feel that I am forced to help colleagues beyond my formal obligations and even when I am short on time or energy.	0,76
I feel that I am forced to assist my supervisor against my will and beyond my formal job obligations.	0,67
Eigenvalue	2.83
R ²	0.57
α	0.81
N	331

APPENDIX 4: FACTOR ANALYSIS WELL-BEING

Table 7:

Principal component analysis well-being

	Factor 1: POS	Factor 2: Job Stress
All in all I am satisfied with my job.	0,41	-0,44
My job is extremely stressful.		0,89
Very few stressful things happen to me at work (r)		0,72
I feel a great deal of stress because of my job.		0,88
I almost never feel stressed because of my work (r)		0,83
My organisation strongly considers my goals and values.	0,84	
My organisation really cares about my well-being.	0,81	
My organisation shows very little concern for me (r)	0,50	
My organisation would forgive an honest mistake on my part.	0,78	
My organisation cares about my opinions.	0,58	
If given the opportunity, my organisation would take advantage of me (r)	0,71	
Help is available from my organisation when I have a problem.	0,75	
My organisation is willing to help me when I need a special favor.	0,84	
Eigenvalue	5.05	2.35
R ²	0.39	0.18
A	0.87	0.85
N	331	330

Note: Only factor loadings over 0.40 are shown.

APPENDIX 5: FACTOR ANALYSIS PSM

Table 8:

Principal component analysis PSM

	Factor 1: commitment	Factor 2: attraction	Factor 3: compassion
Politics is a dirty word (r).		0,75	
The give and take of public policy-making does not appeal to me (r).		0,77	
I don't care much for politicians (r).		0,75	
I unselfishly contribute to my community.	0,69		
Meaningful public service is very important to me.	0,79		
I would prefer seeing public officials do what is best for the whole community, even if it harmed my interests.	0,41		0,56
I consider public service my civic duty.	0,75		
It is difficult for me to contain my feelings when I see people in distress.	0,42	-0,36	
I am often reminded by daily events about how dependent we are on one another.	0,57		
I have little compassion for people in need who are unwilling to take the first step to help themselves (r)			0,91
Eigenvalue	2.69	1.83	1.08
R ²	0.27	0.18	0.11
α	0.75	0.68	0.29
N	333	331	333

Note: Only factor loadings over 0.40 are shown.

APPENDIX 6: FACTOR ANALYSIS SUPERVISOR SUPPORT

Table 9:

Principal component analysis supervisor support

	Factor 1: supervisor support
My supervisor can be relied on when things get tough on my job	0.79
My supervisor is willing to listen to my job-related problems	0.82
My supervisor really does not care about my well-being (reverse coded).	0.68
Eigenvalue	2.29
R ²	0.76
α	0.84
N	331

APPENDIX 7: FACTOR ANALYSIS CO-WORKER SUPPORT

Table 10:

Principal component analysis co-worker support

	Factor 1: co-worker support
My co-workers are helpful to me in getting my job done	0.71
My co-workers are willing to listen to my job-related problems	0.74
My co-workers can be relied upon when things get tough on the job	0.76
Eigenvalue	2.22
R ²	0.74
α	0.82
N	332