Teachers' organizational citizenship behaviour: Considering the roles of their work engagement, autonomy and leader—member exchange

Piety Runhaar [a,b,*], Judith Konermann [b,c,d], Karin Sanders [b,e]

[a] Wageningen UR (University & Research Centre), Education and Competence Studies, P.O.Box 8130, 6700 EW Wageningen, The Netherlands
[b] Department of Organizational Psychology and Human Resources Development, University of Twente, The Netherlands
[c] Accenture, The Netherlands
[d] KPC Group, The Netherlands
[e] School of Management, ASB, UNSW, Australia

HIGHLIGHTS

► The trait-activation model is used to examine the influence of autonomy and LMX.
► Autonomy moderated the relationship between teachers' work engagement and OCBI.
► LMX moderated the relationship between teachers' work engagement and OCBO.

ARTICLE INFO

ABSTRACT

The increasing demands that schools are confronted with recently, require teachers' commitment and contribution to school goals, regardless of formal job requirements. This study examines the influence of teachers' work context, in terms of autonomy and leader—membership exchange (LMX), on the relationship between their work engagement and organizational citizenship behaviours (OCBs). A distinction is made between OCBI, targeted at benefits for the individual, and OCBO, targeted at benefits for the organization. Survey data from six Dutch schools for secondary education ($n = 211$), showed that autonomy and LMX both weakened the relationships between work engagement and OCBI and OCBO respectively.

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1. Introduction

Schools are increasingly faced with ever growing demands, like enhanced diversity in the classroom, higher expectations regarding pupil achievements, and new psychological insights concerning pedagogy and learning that require educational changes (OECD, 2006). These demands make the schools' success more and more dependent on teachers' willingness to go above and beyond the call of duty in order to attain their schools' goals and objectives (Somech & Ron, 2007). For example, in order to cope with increased diversity in classrooms, schools need teachers who take the initiative in gathering information on this topic, who experiment with new pedagogical approaches, and who share this information with colleagues. As such, teachers' organizational citizenship behaviour (OCB) - defined as: 'individual behaviour that is beneficial to the organization, is discretionary, is not directly or explicitly recognized by the formal reward system, and in aggregate contributes to the effective functioning of the organization' (Organ, 1988: p. 4) - has become increasingly important. OCB's - like helping out colleagues who are overloaded with work, coaching newcomers in the organization, or suggesting pedagogical or didactic improvements (Belogolovsky & Somech, 2010) - are essential because these activities provide the school with additional resources (Christ, Van Dick, Wagner, & Stellmacher, 2003; Organ, 1997). Moreover, because formal job- and task-descriptions can never cover the entire array of behaviours that are needed to successfully respond to continuously changing demands, schools depend on teachers' willingness, when needed, to take the extra effort and show initiative (George & Brief, 1992).

* Corresponding author. Wageningen UR (University & Research Centre), Education and Competence Studies, P.O.Box 8130, 6700 EW Wageningen, The Netherlands. Tel.: +31 317484383.

E-mail address: piety.runhaar@wur.nl (P. Runhaar).

Research findings, both in public and private organizations, have indeed shown the importance of organizational citizenship behaviours (OCB's) for the effectiveness and efficiency of work teams and organizations (e.g., Felfe & Heinitz, 2009; Organ, 1997; Podsakoff, Whiting, Podsakoff, & Blume, 2009). For example, employees who show OCB's exhibit less absenteeism, have less turnover intention, are more productive and efficient, and are able to increase customer satisfaction (Podsakoff et al., 2009).

In our study, we adopted the two-dimension construct of Williams and Anderson (1991) who make a distinction between OCBI, referring to helping-behaviour towards individual colleagues – for example, employees helping colleagues who have been absent or employees helping colleagues cope with work-related problems – and OCBO, referring to helping-behaviour directed towards the organization as a whole – for example, when an employee volunteers to perform additional tasks as needed at a given time, or helps to organize informative gatherings on topics that are relevant to all employees, like new teaching methods or new rules and regulations. This categorization covers most other OCB-related constructs (Podsakoff et al., 2009).

1.1. Work engagement and OCB

The role of individual job attitudes in explaining OCB is widely acknowledged (e.g. Organ & Ryan, 1995). More specifically, increasing attention is being paid to the positive relationship between work engagement and OCB (e.g. Babcock-Roberson & Strickland, 2010; Chughtai & Buckley, 2009). Work engagement is defined as the positive and fulfilling work-related state of mind of the individual employee, which is characterized by vigour, dedication, and absorption (Bakker & Schaufeli, 2008). Not only do engaged employees perform better, they also show beneficial behaviour towards the organization like a low intention to quit and a commitment to organizational goals (Schaufeli & Salanova, 2008). They are also proactive and keen to take initiative (e.g., Sonnentag, 2003). Although work engagement and OCB's are closely related to each other, they are considered different concepts (Schaufeli & Bakker, 2010): while work engagement is a motivational construct (Hakanen, Bakker, & Schaufeli, 2006) which is not directed towards any specific individual, object, or event (Schaufeli & Bakker, 2004), OCB's are described as behaviours which are directed towards an individual or the organization (Williams & Anderson, 1991).

The mechanism underlying the relationship between work engagement and OCB's can be explained using social exchange theory (SET), according to which reciprocal interactions between people exist; people tend to reciprocate benefits they receive from others (Blau, 1964; Cropanzano & Mitchell, 2005). Translated to the relationship between work engagement and OCB, this means that when engaged teachers show beneficial behaviours towards their colleagues or towards the organization, these behaviours will likely be reciprocated by recognition and beneficial behaviours from others. As a result of this, teachers may become even more engaged (Saks, 2006). Previous research findings support the reciprocal relationship between engagement and OCB (e.g., Babcock-Roberson & Strickland, 2010; Wat & Shaffer, 2003). Therefore, in line with former research, our study assumes a positive relationship between teachers' work engagement and OCB's.

1.2. Contribution of the present study: autonomy and LMX as moderators

As mentioned by different authors, research on OCB's within schools is scarce (e.g. Bogler & Somech, 2004). Moreover, since individual characteristics tend to interact with contextual variables in explaining organizational behaviour in general (Schneider, 1983)

– and OCB specifically (Somech & Ron, 2007) – there is a need to understand how individual characteristics interact with contextual variables in explaining OCB's (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). Our paper aims to address this need by examining if and how the relationship between work engagement and OCB is influenced by teachers' work context.

The work environment, in terms of opportunities and constraints, influences the relation between individual characteristics of employees and their behaviour (Johns, 2001). In other words, employees' tendency to engage in certain behaviours because of their personality or intrinsic motivation can be strengthened or weakened by work environmental characteristics. We were interested in how the relationship between teachers' work engagement and OCB would be influenced by characteristics of their work environment. Since organizational psychological research consistently shows an impact of the way employees perceive their autonomy and leadership on OCB's (Podsakoff et al., 2000) and because in educational literature there is increasing evidence showing the beneficial effects of autonomy and leadership on the way teachers experience and react to their jobs for instance in terms of retention (Ingersoll & Smith, 2003) or job satisfaction (Bogler, 2001), we examined the moderating roles of autonomy and leadership on the relationship between work engagement and OCB.

Autonomy refers to the extent to which employees have the power to organize their job activities for themselves. More specifically, autonomy concerns the discretionary powers and freedom with respect to work goals, setting priorities, shaping task elements, and determining the order and tempo in which tasks are executed (e.g. Kwakman, 2003; Xanthopoulou, Demerouti, Bakker, & Schaufeli, 2007). The more autonomy employees have in their jobs, the more opportunity they have to show extra-role behaviour like OCB. Moreover, autonomy is a task characteristic that has a major impact on the psychological states of employees, like feeling responsible for work outcomes and job satisfaction (Hackman & Oldham, 1980; Podsakoff et al., 2000). As such, autonomy enhances employees' motivation to put extra effort into their work and show organizational citizenship behaviour (see for instance, Chen & Chiu, 2009). Concerning leadership we focused on Leader Membership eXchange (LMX). LMX theory is based on the assumption that effective leadership derives from mature relationships between leaders and followers (Dansereau, Graen, & Haga, 1975; Gerstner & Day, 1997). More specifically, in mature relationships – characterized by mutual trust, influence, and respect – leaders and followers develop mutual obligations. For example, leaders can count on employees to provide them with assistance when needed, or to provide them with constructive feedback. Employees in turn may rely on leaders' support and encouragement when needed, or on career investments (Graen & Uhl-Bien, 1995). In this way, mutual trust and obligations empower and motivate employees to expand beyond the formalized work contract and show organizational citizenship behaviour (Podsakoff et al., 2000).

Using data from 211 teachers in six secondary education schools in The Netherlands, we answered the following question: 'To what extent and how do autonomy and LMX moderate the relationship between work engagement on the one hand and OCB's on the other?'.

The research context is comparable to that of most other western countries. More specifically: like elsewhere, Dutch schools are increasingly being held accountable for student outcomes and consequently for teacher quality (OECD, 2009); new learning and psychological insights have stimulated schools to implement educational innovations which are characterized by enhanced self-regulation by pupils, cooperative learning and context-based

education (e.g. Bakkenes, Vermunt, & Wubbels, 2010); and teachers are confronted with an increase in diversity within the classroom, which leads to new pedagogical and didactic challenges (e.g. Darling-Hammond, 2006).

By answering the research question our study contributes to theories about the combined impact of organizational and individual factors on organizational citizenship behaviour in general and within schools in particular. The practical value of our study is reflected in the guidelines for managers to stimulate organizational citizenship behaviour within their teams, which we were able to formulate on the basis of the outcomes.

2. Conceptual background and hypotheses

We expect that in work contexts where high levels of autonomy and LMX are perceived by teachers, the relationship between work engagement on the one hand and organizational citizenship behaviours (OCBI and OCBO) on the other to be weaker than in work contexts with lower levels of autonomy and LMX. In these latter contexts − where teachers perceive more restrictions in their jobs (low autonomy) and perceive the relationship with their leader as of low-quality (low LMX) − we expect the relationship between work engagement and OCB's to be stronger.

Our expectations concerning these moderating effects of autonomy and LMX on the relationship between work engagement and OCB's, derive from the trait activation theory (Tett & Guterman, 2000) which has its foundations in the belief that both personal and contextual characteristics influence behaviour (Schneider, 1983). According to trait activation theory, behaviour can be explained on the basis of people's responses to 'trait-relevant cues' which surface in situations. Trait-relevance refers to the degree to which a situation provides cues for the expression of 'trait-relevant behaviour' (Tett & Burnett, 2003). Translated to our topic, a situation can provide a higher or lesser number of cues for teachers that have a high work engagement (the trait in our case) to engage themselves in OCB's (the trait-relevant behaviour in our case). Autonomy and LMX can both be viewed as trait-relevant cues in the workplace. As already mentioned above, autonomy gives teachers more opportunity to display a wider range of 'extra-role' behaviours than when they feel restricted and, for example, perceive little discretionary leeway or freedom to help out others (Gellatly & Irving, 2001). Next to augmented opportunities to engage in helping behaviours, autonomy also enhances the intrinsic motivation and satisfaction of employees (Hackman & Oldham, 1980) which in turn are important antecedents of organizational citizenship behaviours (Podsakoff et al., 2000). LMX can be viewed as a trait-relevant cue for engaged teachers to exhibit OCB's as well. More specifically, the basis for a high quality relationship between a leader and a follower lies in mutual trust, loyalty and obligation (Dansereau et al., 1975; Waismel-Manor, Tziner, & Berger, & Dikstein., 2010). OCB's in this sense can be viewed as a means for teachers in maintaining a well-balanced and equitable social exchange relationship with their leader (Wayne, Shore, Bommer, & Tetrick, 2002; Zhong, Lam, & Chen, 2011).

The trait activation theory has helped us to understand that behaviour can be explained by people's responses to trait relevant cues. Translated to our case, autonomy and LMX can be viewed as trait-relevant-cues that elicit trait-relevant-behaviour (OCB). However, we still need to figure out whether these cues strengthen or weaken the relationship between traits (in our case work engagement) and trait-relevant behaviour (OCB in our case). According to the research on 'situation strength' (Waismel-Manor et al., 2010), we expect the latter, namely that autonomy and LMX weaken the relationship between WE and OCB; strong situations are present when employees perceive clear cues of what behaviour is expected and rewarded and when these cues enhance the likelihood that employees − despite their personality or preferences −

will show the expected behaviour (Mischel, 1977). It is for this reason that behaviour in weak situations largely depends on personal characteristics − like traits − instead of situational characteristics, whereas the opposite is true for strong situations (Schneider, Salvaggio, & Subirats, 2002). To illustrate this mechanism, Mischel (1977) found that jobs that are characterized by high autonomy create fewer constraints on employee behaviour and that jobs that are characterized by low autonomy allow employees' personality to drive behaviour. As for LMX, Hochwater, Witt, Treadway, and Ferris (2005) found that when employees reported a low degree of perceived organizational support, individual differences in social skills predicted work behaviour. Based on these theoretical notions, we expect that the more teachers perceive trait-relevant cues in their work environment (i.e. autonomy and LMX), the weaker the relationship between their traits (work engagement) and their behaviour (engagement in OCB) will be. In other words, the work context is expected to have a compensatory effect since its impact is expected to be especially strong in cases where the work engagement of teachers is relatively low.

Finally, since OCB's targets are on different levels − in that it can be directed towards individual colleagues (OCBI) or towards the organization as a whole (OCBO) − Somech and Drach-Zahavy (2004) proposed that the antecedents of both types of OCB probably exist on different levels as well. Following this reasoning, we expect that since autonomy is related to individual tasks, this cue will primarily moderate the relationship between work engagement and helping behaviour directed to individual colleagues (OCBI). Viewing leaders as representatives of the organization, we expect that LMX will likely be more related to helping behaviour which is beneficial to the organization at large (OCBO).

In sum, our hypotheses were formulated as follows:

Hypothesis 1 (H1). *Autonomy moderates the relationship between work engagement and OCBI*

Hypothesis 2 (H2). LMX moderates the relationship between work engagement and OCBO.

For the purpose of clarity, in Fig. 1 *we depicted the different relationships.*

3. The study context: Dutch secondary education

At the age of 12, once Dutch children have completed their eight years of primary schooling (or special education), they are admitted to secondary education where they have the choice of: a four year pre-vocational secondary education (VMBO), a five year senior general secondary education (HAVO) or a six year pre-university education (VWO). Most secondary schools have recently been enlarged by a series of mergers and nowadays combine various types of education allowing pupils to easily transfer from one type to another. All types of secondary education start with a bridging period of basic secondary education wherein the range of subjects studied is virtually the same for all pupils. At the end of the second year schools will advise pupils which type of schooling is most
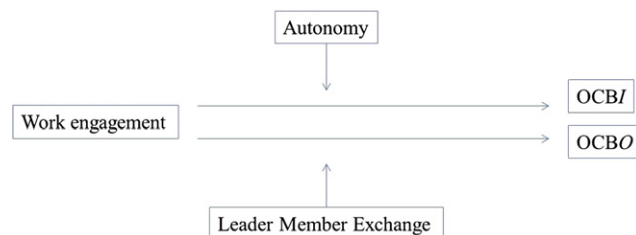

Fig. 1. A summary of the expected relationships between the study variables.

suitable to them. The Netherlands has freedom of education, which means that one is allowed to found private schools on the basis of a specific principle or religion. Both public and private schools are funded by the government. While schools are largely free to choose *how* they teach, the Ministry of Education, Culture and Science determines *what* is to be taught − attainment targets, examination syllabuses and the contents of national examinations − and sets requirements, like the number of teaching hours per year, the training and qualifications required for teachers, the participation of pupils/parents and staff in planning and reporting etc. The Education Inspectorate is responsible for enforcing these educational standards (for more information, see Bal & De Jong, 2007).

Due to the enlargement of schools coupled with government decentralization, the Dutch educational system is characterised by a variety of management structures, putting school leaders in differing roles and setting them different tasks. In general, schools consist of a number of locations, each led by a location head. Locations can have different departments, based on educational level (VMBO, HAVO, VWO). Departments are in turn often further divided into teams which are responsible for students in lower or higher secondary education (ages 12 to 15 and 16 to 18 respectively) (Education Council, 2005). The central board of school directors is responsible for strategic issues, like policy development and formulation of long-term goals. Location and department managers provide input for policy development and are responsible for the execution of general policies and the implementation of long-term goals; they also often have responsibilities in the fields of finance and personnel. Team leaders are usually teachers with additional coordinating tasks, like coaching other teachers and facilitating the execution of tasks (Education Council, 2002). Finally, there is the Dutch Council for Secondary Education (in Dutch this is called the VO-Raad) which represents all 334 school boards and, as an employer association, conducts negotiations with trade unions on the labour agreements that cover over 120,000 staff members (www.vo-raad.nl).

4. Method

4.1. Respondents and procedure

We sampled 211 teachers from six schools for secondary education in the Netherlands. Table 1 shows the characteristics of the different schools. As can be seen, the schools varied in terms of the type of education, being part of a larger institute, organisational structure, and the number of students and teachers.

47 per cent of the sample was male. Ages ranged from under 30 years (21%), 31–40 years (21%), 41–50 years (20%), 51–60 years (33%), to 61 years and older (5%). The respondents' teaching experience varied from less than five years (23%), 6–10 years (24%), 11–15 years (9%), 16–20 years (6%), to more than 20 years (38%).

We contacted board members or school supervisors from the second author's network. In one case (school A) the contact person

asked one whole department to participate in the study. In the other five schools, the board members asked their team managers to motivate all team members to participate in the research. Teachers received an e-mail in which the aims of the research were explained and which contained a link to the on-line questionnaire. Also supplementary information was given about the subjects included in the questionnaire and respondents were assured that their answers would be treated with the utmost confidentiality. The data were only used by the researchers and no details regarding individual employees were shared with others. Respondents had two weeks to fill out the questionnaire. The response rates within these schools varied between 17 and 56 per cent and it appeared that a lack of time or a lack of sense of importance were the main reasons for teachers not to cooperate.

4.2. Instruments

We used validated scales which have proven to be reliable in earlier research, apart from the OCB items which we translated, in part, to the situation within schools. An overview of used items and references to earlier studies in which they were used can be found in Table 2. Respondents indicated their responses to the questionnaire on a 5-point Likert-type scale with anchors (1) 'do not agree at all' to (5) 'totally agree'.

4.2.1. Organizational citizenship behaviours (OCB's)

We measured OCB's using an abbreviated 11-item scale based on the OCB scale used by Williams and Anderson (1991). Five items were used to measure OCBI, one example question being: 'I help out colleagues with heavy workloads.' The reliability of this scale was sufficient (Cronbach's $\alpha = .76$). Six items were used to measure OCBO, one example question being: 'I voluntarily perform tasks in the common interest of the department.' To improve reliability, one item was removed from the scale (I come in to work early so I'm ready to start teaching when classes begin.). The reliability was sufficient (Cronbach's $\alpha = .71$).

4.2.2. Work engagement

Work engagement was measured using the short version of the Utrecht Work Engagement Scale (UWES) (Schaufeli & Bakker, 2003), containing three vigour items, like: 'In my work, I feel I have plenty of energy'; three dedication items, such as, 'My work is challenging'; and three absorption items, like, 'Time flies when I am working'. We measured work engagement as one variable, similar to what was done in previous research on work engagement (e.g., Bakker & Bal, 2010). The reliability for work engagement was good (Cronbach's $\alpha = .82$).

4.2.3. Autonomy

Autonomy was measured using a six-item scale, based on the NOVA-WEBA questionnaire (Houtman, Bloemhoff, Dhondt, &

Table 1
Overview of characteristics of the participating schools.

Type of education	A	B	C	D	E	F
	VMBO, Havo/VWO, Gymnasium	Mavo Havo/VWO, Gymnasium	Mavo, Havo/VWO, Gymnasium	HAVO, VWO, Gymnasium	VMBO	VMBO, Havo/VWO, Gymnasium
Part of larger institute	Yes	Yes	No	Yes	Yes	Yes
Organization structure	One location, Two departments, Five teams	Three locations, Six teams	Four locations, Four departments 24 teams	One location Four teams	One location Five teams	Two Locations Two departments, Eight teams
Number of students	1.500	1.900	3000	1000	400	1.650
Number of teachers	90	153	235	60	88	160
Response rate	100% (31%)[a]	19%	17%	42%	47%	30%

[a] In this particular case, the questionnaire was sent to just a single department, consisting of 28 teachers. Of this department, all 28 teachers participated.

Table 2
Scales and items used in the study.

Organizational Citizenship Behaviour Based on Williams and Anderson (1991; 1994) and transposed to the situation within Dutch schools for secondary education	1. I take on tasks of colleagues who are absent or having a break 2. I help out colleagues with heavy workloads. 3. I go out of my way to help new employees, even when not asked 4. I help out colleagues who have been absent for longer periods of time. 5. I take time out to listen to co-workers' problems and worries 6. I volunteer to do things for the department without being asked. 7. I come in to work early so I'm ready to start teaching when classes begin. 8. I voluntarily perform tasks in the common interest of the department. 9. I usually attend non-compulsory meetings and presentations. 10. I help with organizing work-related meetings. 11. I read internal memos and keep myself abreast of things.
Work Engagement (Schaufeli & Bakker, 2003) also used in Schaufeli, Bakker, and Salanova (2006).	1. At my work, I feel bursting with energy. 2. I find the work that I do full of meaning and purpose. 3. Time flies when I am working. 4. At my job, I feel strong and vigorous. 5. I am enthusiastic about my job. 6. When I am working, I forget everything else around me. 7. My job inspires me. 8. When I get up in the morning, I feel like going to work. 9. I feel happy when I am working intensely. 10. I am proud of the work that I do. 11. I am immersed in my work. 12. I can continue working for very long periods at a time. 13. To me, my job is challenging. 14. I get carried away when I am working. 15. At my job, I am very resilient, mentally. 16. It is difficult to detach myself from my job. 17. At my work, I always persevere, even when things do not go well.
Autonomy Scale from Houtman, Bloemhoff, Dhondt, and Terwee (1994), also used by De Witte and Steijn (2000)	1. I am allowed to perform duties at my own pace. 2. I am my own boss where it comes to organizing my workload. 3. I am free to decide how I do my work. 4. I am free to decide when to take a break from my duties. 5. I am free to choose my own moments to perform tasks. 6. I can alternate between difficult and easy tasks at my own pleasure.
Leader Member Exchange Scale from Janssen and Van Yperen (2004), based on the widely used scale of Graen and Uhl-Bien (1995), and also used by Bezuijen, van de Berg, van Dam, and Thierry (2009).	1. My supervisor would be personally inclined to help me solve problems in my work. 2. My working relationship with my supervisor is effective. 3. I have enough confidence in my supervisor that I would defend and justify his/her decisions if he or she were not present to do so. 4. My supervisor considers my suggestions for change. 5. My supervisor and I are suited to each other. 6. My supervisor understands my problems and needs. 7. My supervisor recognizes my potential.

Table 3
Intraclass correlation coefficients.

	F-test (df)	ICC (1)	ICC (2)
OCBI	3.033 (5183) *	.05	.67
OCBO	4.026 (5, 179) **	.08	.75
Work engagement	1.775 (5185)	.02	.44
Autonomy	1.860 (5181)	.02	.46
LMX	4.549 (5177)***	.09	.78

$^*p < .05$; $^{**}p < .01$; $^{***}p < .001$.

Terwee, 1994). A sample item from this scale is: '*I am free to choose my own moments to perform tasks.*' Cronbach's α was .81.

4.2.4. LMX

LMX was measured using the Janssen and Van Yperen (2004) scale, which consists of seven items. An example is: '*My supervisor sees my talent*'. The reliability was high (Cronbach's $\alpha = .94$).

4.2.5. Control variables

Age was used as a control variable, because previous research has shown that age has an impact on employees' attitudes towards an organization (Tsui, Egan, & O'Reilly, 1992) and interacts with environmental characteristics in explaining OCB's (Chattopadhyay, 1999). We also factored in work experience at the specific school and in education in general. Because correlations between age and work experience at the school and education in general were high ($r = .66$ and $r = .79$, $p < .01$ respectively) only age was used as a control variable in our further analyses.

4.3. Data analysis

We first conducted an ANOVA test for OCBI ($F(5,183) = 3.03$, $p < .05$), OCBO ($F(5,179) = 4.03$, $p < .01$), work engagement ($F(5,185) = 1.78$, *ns*), autonomy ($F(5,181) = 1.86$, *ns*), and LMX ($F(5,177) = 4.55$, $p < .001$), to ensure that differences between schools would not influence the results. We then calculated the intraclass correlations (ICC's, see Bliese, 2000), to examine whether the amount of variance was related to the school level.

The results presented in Table 3 show that ICC (1) values range from .02 to .09, implying that two to nine per cent of the variance in individual scores can be attributed to the school. Given these values, the effects of the schools are considered small to medium (LeBreton & Senter, 2008). The ICC (2) is used to estimate the reliability of the means at school level. ICC (2) values below .50 are considered poor, ICC (2) values between .50 and .70 are considered marginal, and ICC (2) values above .70 are acceptable (Klein & Kozlowski, 2000). The results show that the ICC (2) values are acceptable for LMX (ICC (2) = .78) and OCBO (ICC (2) = .75), and are marginal for OCBI (ICC (2) = .67). The focus of our research was on examining respondents' individual perceptions. Because the variance between schools was small to medium and could impact the results, we used multilevel modelling, described as a statistical method which is appropriate to use in data analysis when data sets comprise several levels of analysis, for example, individual or school. It enables both individual-level and contextual effects to be measured in the same analysis (Bickel, 2007).[1]

We used Harman's one-factor test (Podsakoff & Organ, 1986) to examine the potential influence of common-method variance: all variables in this study were based on self-reports and collected at

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[1] Since the school level consisted of six schools, a relatively small number for multilevel analysis (Maas & Hox, 2005), we also used hierarchical regression analysis and yielded comparable results.

Table 4
Model comparisons.

	χ^2	df	χ^2/df	RMSEA	CFI	Comparison	$\Delta\chi^2$	Δdf
3 factor model								
M1 3 factor proposed	316.808	149	2.13	.07	.85			
M2 2 factor (WE, OCBI + OCBO)	316.821	150	2.11	.07	.84	M1-M2	.013	1
M3 2 factor (OCBI, WE + OCBO)	316.821	150	2.11	.07	.84	M1-M3	.013	1
M4 2 factor (OCBO, WE + OCBI)	327.001	150	2.18	.07	.83	M1-M4	10.193***	1
M5 1 factor	360.573	150	2.40	.08	.80	M1-M5	43.765***	1

***$p < .001$.

Table 5
Means, standard deviations, and Pearson correlations.

	M	SD	1	2	3	4	5	6	7
1. Age	2.80	1.23							
2. Work experience school	2.53	1.58	.66**						
3. Work experience in education	3.11	1.66	.79**	.76**					
4. OCBI	3.53	.56	.14*	.06	.04				
5. OCBO	3.57	.60	.14	.08	.08	.59**			
6. Work engagement	3.76	.49	.01	−.05	.09	.21**	.35**		
7. Autonomy	3.29	.65	−.04	.07	−.10	.25**	.22**	.22**	
8. LMX	3.62	.82	.04	.07	.04	.27**	.17*	.18*	.16*

*$p < .05$; **$p < .01$.

a single point in time. Analysis of unrotated principal axis factoring generally resulted in five expected factors that explained 53 per cent of the total variance. The first factor, LMX, explained 15 per cent of all the variance.

To test whether work engagement, OCBI, and OCBO were different constructs, we examined the variables using a confirmatory factor analysis, using structural equation modelling (SEM) with Amos Graphics. As fit indices we used the χ^2, χ^2/df, the root mean square error of approximation (RMSEA), and the comparative fit index (CFI). χ^2 was used to measure the discrepancy between the sample and fitted covariance matrices. In this the null hypothesis (H0) states that the fitted covariances are valid. A non-significant χ^2 value indicates a good fit (Byrne, 2010). The χ^2/df ratio should have a value lower or equal to around 2–5. For RMSEA, values at or under .08 were taken to reflect a reasonable fit and values under .05 were considered to be an excellent fit (Holmes-Smith, 2000). The CFI varies along a continuum of 0–1 in which values at or greater than .90 are considered to be a satisfactory fit and values at .95 or over reflect an excellent fit (Holmes-Smith, 2000).

The results in Table 4 show that the three-factor proposed model (M1) has the best fit ($\chi^2(149) = 316.808$, df/$\chi^2 = 2.13$, RMSEA = .07, CFI = .85), although the CFI is lower than .90; the two-factor models M2 and M3 are not significantly different from M1. Empirical research has shown that OCBI and OCBO are two different

factors (e.g., Somech & Drach-Zahavy, 2004; Williams & Anderson, 1991) and give different outcomes with engagement as independent variable (Saks, 2006). We therefore decided to use the three-factor model in our further analysis.

The results for the hypotheses are presented in Table 5. The hypotheses were tested in subsequent steps, starting with an empty model (Model 0) that served as a baseline to investigate changes in the fit of the model when additional variables were added. In Model 1, the control variable age was added. In Model 2, work engagement was added. To test H1, the interaction between autonomy and work engagement was added and presented in Model 3 with OCBI as outcome variable. In order to eliminate non-essential correlations between the interaction terms, their component variables were centred and then multiplied with each other (Aiken & West, 1991). Finally, the interaction between LMX and work engagement was entered in Model 3 with OCBO as outcome variable. The model fit was estimated using the 2 restricted log likelihood.

5. Results

5.1. Descriptive statistics

Table 5 presents the means, standard deviations, and correlations of the variables in this study. Work engagement has the highest mean ($M = 3.76$, SD = .49), and autonomy has the lowest ($M = 3.29$, SD = .65). OCBI is positively related to OCBO, work engagement, autonomy, and LMX. OCBO is positively related to work engagement, autonomy, and LMX. Work engagement is positively related to autonomy and LMX. Finally, autonomy and LMX are positively related.

5.2. Results of the tested hypotheses

The results are presented in Table 6. In line with former research, a positive relationship between work engagement and OCBI ($\beta = .23$, $p < .001$) and between work engagement and OCBO ($\beta = .39$, $p < .001$) was found. The results for H1 are presented in Model 3 with OCBI as outcome variable. Autonomy weakens the relationship between work engagement and OCBI ($\beta = −.19$,

Table 6
Multilevel analysis for the influence of autonomy and LMX in the relationship between work engagement and OCBs.

	OCBI				OCBO			
	Model 0	Model 1	Model 2	Model 3	Model 0	Model 1	Model 2	Model 3
Age		.078*	.081*	.073*		.070†	.072†	.062†
Work engagement (WE)			.230***	.210*			.396***	.310**
Autonomy (AUT)				.123†				.133†
LMX				.082				.072
WE × AUT				−.199*				
WE × LMX								−.195*
Intercept	3.524***	3.305***	2.174***	1.817***	3.542***	3.344***	1.856***	1.498***

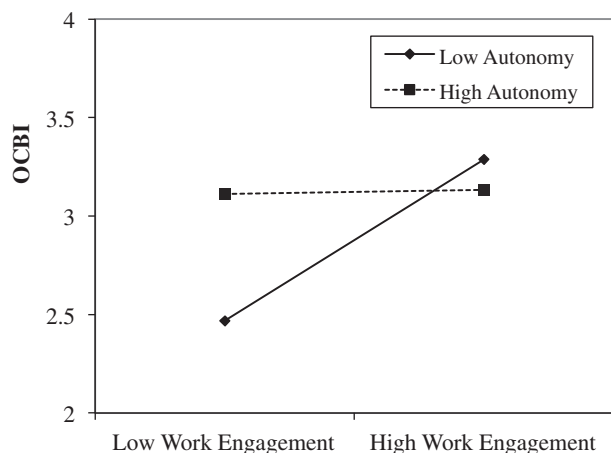†$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$.

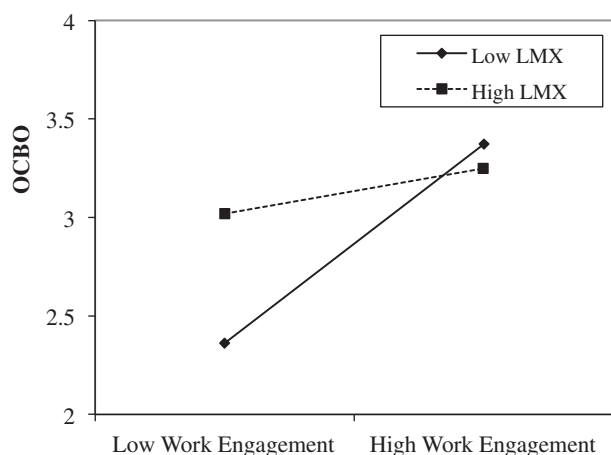Fig. 2. The two-way interaction of work engagement and autonomy on OCBI.

Fig. 3. The two-way interaction of work engagement and LMX on OCBO.

$p < .05$). The interaction is illustrated in Fig. 2; it shows that when autonomy is low, the relationship between work engagement and OCBI is stronger. This means H1 was confirmed.

The results of Hypothesis 2, which stated that LMX weakens the relationships between work engagement and OCBO, are shown in Model 3. The results show a significant interaction for OCBO ($\beta = -.19$, $p < .05$). The interaction is illustrated in Fig. 3; it shows that when LMX is high, the relationship between work engagement and OCBO is weaker than in the situation where LMX is low. Thus, H2 was confirmed.

The results also show an unexpected finding, namely a positive relationship between age and OCBI, which remained after the study variables were entered into the equation ($\beta = .07$, $p < .05$). This means that the older the respondent, the more helping behaviour towards colleagues is reported.

6. Conclusion and discussion

The increasing demands that schools have recently been confronted with require commitment and contribution to school goals from teachers, regardless of formal job requirements. Therefore, behaviours that go beyond in-role duties have become a crucial factor in schools' effectiveness (Somech & Drach-Zahavy, 2000). As such, teachers' organizational citizenship behaviour (OCB) has been given increased attention in literature. Since former research

consistently showed a positive relationship between work engagement and OCB, we took this relationship for granted and examined the moderating influence of teachers' work context on this relationship. More specifically, we examined the influence of teachers' autonomy and the quality of the social exchange relationship with their leader (LMX). To answer our research question 'To what extent do autonomy and LMX moderate the relationship between work engagement and OCB?' we used data from 211 teachers in six schools for secondary education. We examined OCB's in two different forms, OCBI, which is directly targeted at individuals and indirectly to the organization, and OCBO, which is directly targeted at the organization as a whole (Williams & Anderson, 1991).

6.1. General conclusions present study

Based on trait-activation theory (Tett & Burnett, 2003) and theory on situation strength (Mischell, 1977) we formulated the expectation that autonomy and LMX would moderate the positive relationships between work engagement and OCBI and OCBO respectively. The idea being that work situations can provide more or less cues (autonomy and LMX in our case) for teachers high in work engagement (as a trait) to engage themselves in OCB's (as trait-relevant behaviour). Furthermore, in strong situations (i.e. situations with high levels of trait-relevant cues), individual differences (traits) are likely to explain less variance in trait-relevant behaviour than they do in weak situations (i.e. situations with low levels of trait-relevant cues).

Indeed, the results showed that the more engaged teachers are, the more they exhibit helping behaviour towards individual colleagues (OCBI) and that this only occurred under the condition of low autonomy (weak situation). In case of high autonomy, teachers' work engagement had no explanatory value. The same applies to the moderating effects of LMX: teachers' work engagement was positively related to helping behaviour targeted at the organization as a whole (OCBO), mainly under the condition of low LMX (weak situations). Apparently, individual and work contextual characteristics play compensatory roles in predicting OCB's. When teachers are not very intrinsically motivated (i.e. engaged) to engage themselves in OCB's, the work context as external motivator, can enhance their OCB's. Our findings add to existing OCB literature (e.g. Somech & Drach-Zahavy, 2000; Somech & Ron, 2007) in that it does matter whether OCB's are individually or organizationally targeted and that - depending on the behaviour examined (OCBI or OCBO) − different contextual characteristics have to be taken into account.

6.2. The contribution of our results to existing educational literature

Our findings support the increasing attention being paid to the important effect of autonomy on the way teachers perceive and react to their work. More specifically, as has been reported by several authors (e.g. Burcheilli, 2006; Ingersoll, 2003), the on-going pressure on schools to enhance their students' achievement and the increased curriculum control and accountability procedures which accompany that pressure, often results in teachers experiencing a loss of professional autonomy and a feeling of being deskilled while having more responsibilities and a higher (administrative) workload heaped upon them at the same time. As a consequence, teachers run the risk of losing their job satisfaction and motivation, which in the worst case results in teachers deciding to leave the school or even the occupation of teaching itself (e.g. Ingersoll & Smith, 2003). So paying attention to this element of teachers' work context is extremely important and our results specifically add to this that the maintenance of autonomy is also

important if one wants to stimulate teachers — especially the lesser engaged ones — to help each other out and to put extra effort in facilitating each other's jobs (OCBI).

Our findings with regards to the importance of the quality of the relationships between teachers and their leaders (LMX) corresponds to literature when it comes to the beneficial effects of a transformational leadership style on various kinds of psychological states like teachers' job satisfaction (Bogler, 2001) and teachers' efforts put in and commitment to the achievement of school goals (Geijsel, Sleegers, Leithwood, & Jantzi, 2003). The concepts of LMX and of transformational vs. transactional leadership are related in the sense that within both of them, an exchange approach to leadership is used (Graen & Uhl-Bien, 1995). Effective leadership develops itself as the focus on material exchange between leader and employee (transactional) shifts to a focus on social exchange of psychological benefits (transformational). In addition to the stream of literature on transactional and transformational leadership, our findings make clear that a high quality relationship between teachers and their supervisors is needed when one aims to stimulate teachers to put extra effort into 'higher purposes' like school wide performance. More specifically, when teachers perceive the relationship with their leader as one of mutual trust, respect and obligations (high LMX) they are likely to reciprocate this by engaging themselves in activities which are beneficial for the school in general, especially when these teachers experience relatively low levels of work engagement.

Next to the hypothesised relationships between our study variables, our study revealed a positive relationship between age and organizational citizenship behaviours. Apparently, the higher the age of our respondents, the more engagement in OCB's they reported. An explanation could be that older teachers — having more experience and teaching skills — do their jobs more easily and as such have more capacity (in terms of time and ability) to show OCB's then their younger counterparts. In addition to that, these younger teachers, who are just starting out, might well need more support from their colleagues than they are able to give to others. Research indeed shows this need for support in novice teachers (e.g. Kardos & Moore Johnson, 2007) and when this need is not fulfilled, it may even lead to teachers quitting their jobs (Moore Johnson, 2006). Although we do not know for certain how age affected our findings, prior research on teachers' psychological states and behaviour in this demographic suggests that more in-depth research on the relationship between age and organizational citizenship behaviour is needed.

6.3. Limitations and further research

As a consequence of its design, our research has some limitations. *First*, two factors related to OCB's were examined in this study: namely, autonomy and LMX. Further research could be done on other work characteristics to examine whether they have the same compensatory impact on the relationship between work engagement and OCB's: for example, organizational formalization, staff support (George & Bettenhausen, 1990; Podsakoff & MacKenzie, 1995), professional orientation, or the need for interdependence (Podsakoff, MacKenzie, & Bommer, 1996). *Second*, and related to the former, in our study we measured a strong situation on the base of teachers' perceptions of trait-relevant cues within the work context, namely autonomy or LMX. In future research it would be worthwhile to take the perceived consistency between those or even more cues into account. This may be especially important for schools, for they have to cope with different stakeholders at different levels (for example, government, school board, parents, and students) that all have different interest and demands. As a consequence, schools might well have difficulty in creating

strong situations, where it is exactly clear what is expected from employees. *Third*, in this study we used the classifications of OCBI and OCBO. We found no significant distinction in the confirmatory factor analysis between work engagement, OCBI, and OCBO, even though this was found in previous research. An explanation for this finding might be that teachers do not perceive a clear distinction between helping colleagues and helping the school as a whole. That is, because teachers play such an important role in schools' success in terms of student achievements (Rivkin, Hanushek, & Kain, 2005), helping the school (OCBO) is inherent to helping colleagues (OCBI). Given the small effect sizes, a suggestion for further research might be to replicate this study in more schools. *Third*, a methodological limitation is that the data used in this study were based on self-reports and were cross-sectional. Although the Harman's one-factor test showed that common method bias was not likely, this cannot be fully excluded. Although the relationships we found in our analyses were underpinned by theoretical arguments and empirical evidence found in former research, the type of research design we used makes it hard to draw conclusions about causality. Future research should therefore make use of other methods as well, like collecting data from different groups such as employees and leaders, and using a longitudinal research design. Moreover, we recommend to add qualitative methods like case studies or story-telling to dig deeper into the exact nature of helping behaviour. A qualitative approach probably makes it easier to fully understand the findings and to translate them into daily practice.

6.4. Practical implications

The findings of this study show the importance of the relationship between work engagement and OCB's in the educational sector. Engaged teachers are important to a school, because they are more willing to take on extra tasks that are not part of their job description, such as helping colleagues or volunteering to support extra-curricular activities, all of which enhance the performance of the school. A practical implication related to this finding is the importance of seeking ways to enhance teachers' work engagement. Even though more research needs to be undertaken to determine what specific extra resources can be helpful to teachers, we can already formulate suggestions on the base of former research. For example, Human Resources Management instruments like professional development opportunities, induction programs for newcomers or constructive feedback from the supervisor (Runhaar, Konermann, & Sanders, in press) positively influence teachers' work engagement, because these instruments empower teachers to deal with the challenges they face in their jobs. Furthermore, in designing HRM, it is important to recognize differences between teachers with respect to their expectations and wishes. For example, since new teachers increasingly like to occupy differentiated roles which fit their ambitions and competences (Moore Johnson & Kardos, 2008), schools are advised to create multiple career paths for teachers; not only 'traditional' vertical career paths but also horizontal career paths consisting of roles like literacy coach or data analyst in order to keep new teachers satisfied with their jobs and motivated (see Donaldson et al., 2008, for more information on role differentiation within the teacher force). Moreover, since professional development opportunities have become a key factor in teachers' job satisfaction, especially when this takes place in interaction with colleagues (Donaldson et al., 2008), schools are advised to invest in creating the necessary conditions within teacher teams that enable teachers to engage into (informal) learning activities like feedback asking, observing each other and exchange advises and ideas (see Cochran-Smith, Feiman-Nemser, McIntire, & Demes, 2008; Lohman, 2006; for ways to create professional development opportunities in the workplace).

Our study shows that autonomy is positively related to teachers' OCBI, especially for teachers who are less engaged. As such, by increasing teachers' autonomy, schools can compensate for teachers' relatively lower levels of work engagement. Increasing autonomy can for example be done by giving teachers more freedom with respect to their time schedule and the way they prioritize their tasks. Related to this, one could think of ways to shift responsibilities from supervisors to teachers — like planning and organizing team meetings or professional development activities — and as such enhance teachers' participation in school wide issues. In this respect, valuable suggestions can be found in the literature on team teaching - where teachers together share the responsibility for the development and delivery of education and are given the necessary resources and autonomy to fulfil their tasks (see for instance Smylie & Perry, 2005) -and literature on distributed leadership - where leadership is conceived of as activities and tasks, done by formal leaders as well as by others, like teachers or supportive personnel (Scribner, Sawyer, Watson, & Myers, 2007; Spillane, Halverson, & Diamond, 2004).

Regarding the effects of the quality of the relationship between leaders and teachers (LMX), we can formulate three suggestions. *First*, when one aims to stimulate teachers to grow out of their prescribed jobs, it is worthwhile to invest in mutual trust and loyalty in the relationship between leaders and teachers and to regularly discuss and clarify expectations. Trust is a very complex matter (Tschannen-Moran & Hoy, 1998), since trust between people, like leaders and teachers, is always influenced by the social context in which these relationships are embedded. Especially a climate which is characterized by teachers' commitment to students, respect of each other's knowledge and competence, social support and helping each other out in case of problems, enhances teachers' trust in their leaders (Tschannen-Moran & Hoy, 1998). This means that leaders have to cooperate with their own supervisors (the school board for example) and each other in order to build such a climate wherein their individual behaviours have more impact. *Second*, employees' perceptions of leaders' control of resources (like rewards) is critical in the development of LMX (Aryee & Chen, 2006), hence school boards have to ensure that their leaders are in the position to differentiate between teachers in terms of distribution of rewards or allocation of tasks. *Third*, we know from the school leadership literature (e.g., Geijsel et al., 2003) that the roles supervisors are expected to play have changed from managerial (focus on operational issues and material exchange) to transformative roles (focus on teachers' and organizational development and social exchange). At the same time, not all supervisors find it easy to meet these expectations (Browne-Ferringo, 2003). It might thus be worthwhile to implement Management Development programs within schools where the focus lies on the development of mature relationships between supervisors and teachers. Moreover, in order to create more opportunities for professional development of leaders, we propose that all workplace-learning opportunities that are available for the professional development of teachers (such as observing others and asking for feedback) should be made available to leaders as well (Kochan, Bredeson, & Riehl, 2005).

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