

Predictors of work alienation: differences between hierarchical levels

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Abstract

Purpose – The current study is aimed at analyzing whether and how organizational constraints (i.e. lack of autonomy) and individual characteristics (i.e. psychological capital) are related to work alienation in subordinates and supervisors, and whether the often hypothesized relationship between autonomy and work alienation is moderated in a three-way interaction (autonomy \times psychological capital \times hierarchical level). The hypotheses are developed by drawing on the tenets of the job demands-resources model.

Design/methodology/approach – The study is based on two-wave survey data from 294 Dutch employees (subordinates and supervisors).

Findings – The paper finds that autonomy is more negatively related to work alienation for subordinates with low psychological capital than for subordinates with high psychological capital. Autonomy is negatively related to work alienation for leaders, independent of their level of psychological capital.

Originality/value – Antecedents of work alienation have received substantial attention from researchers. The authors aim to better understand these antecedents by highlighting differences between supervisors and subordinates.

Keywords Work alienation, Hierarchical level, Psychological capital, Two-wave study

Paper type Research paper

Introduction

In contemporary research, work alienation is defined as a disengaged, negative and even painful outlook on one's job (Hirschfeld and Feild, 2000; Seeman, 1991), or simply as "estrangement or disconnect from work" (Nair and Vohra, 2012, p. 27). Unsurprisingly, this state is empirically linked with poor performance (Kartal, 2018), low commitment (Tummers and den Dulk, 2013), career dissatisfaction (Chiaburu *et al.*, 2013), substance abuse (Isralowitz *et al.*, 2012) and turnover intentions (Du Plooy and Roodt, 2010), and should therefore be avoided at any cost. To this end, prior studies have explored factors that are correlated with work alienation, such as one's need for achievement and the extent of role conflict in one's job (for an overview of correlates, see Chiaburu *et al.*, 2014; Nair and Vohra, 2010; Shantz *et al.*, 2015). However, because work alienation was historically coined to describe what happens when industrial workers are faced with automation and division of labor (Marx, 1844), prior studies mostly focused on operational jobs. It remains unclear if the same factors that are linked to work alienation in subordinates also predict alienation in supervisors.

We find some indication to the contrary in the work of Fedi *et al.* (2016), who evidenced that low-status workers (salespersons in superstores and call center personnel) become alienated as a consequence of organizational constraints (such as a lack of autonomy in the



job), whereas high-status workers (top managers in banks, schools and hotels) become alienated because of their individual characteristics (such as a feeling of limited control over the (work) environment). However, it is currently unclear whether these differences as a consequence of status also occur when comparing different hierarchical positions within the same organization (i.e. subordinates and supervisors). Moreover, it is underexplored how these organizational constraints and individual characteristics interact when determining work alienation. Although research has provided ample evidence that the right individual characteristics (e.g. self-efficacy) can buffer adverse effects of organizational constraints on engagement and burnout (Grover *et al.*, 2018; Xanthopoulou *et al.*, 2007), empirical evidence for work alienation as an outcome of this process is lacking.

Drawing on the tenets of the job demands-resources model (JD-R, Schaufeli and Bakker, 2004), the current study is aimed at analyzing whether and how organizational constraints (i.e. lack of autonomy) and individual characteristics (i.e. psychological capital) are related to work alienation in subordinates and supervisors, and whether the often hypothesized relationship between autonomy and work alienation is moderated in a three-way interaction (autonomy \times psychological capital \times hierarchical level). The study is based on two-wave survey data from 294 Dutch employees (subordinates and supervisors).

Our study contributes to the literature in several ways. First, we contribute to the limited literature on factors that relate to work alienation. Prior studies frequently focus on work-related precursors of alienation (e.g. Shantz *et al.*, 2015), without taking into account individual characteristics (with the exception of Fedi *et al.*, 2016). Or, contrastingly, they focus on individual characteristics without addressing work-related factors (e.g. Barrick *et al.*, 1993). Moreover, studies investigating work characteristics in relation to work alienation (e.g. Banai and Reisel, 2003; Banai *et al.*, 2004; Chiaburu *et al.*, 2014) have often used a broad-focused, multidimensional measure of alienation. Similar to, for example, Shantz *et al.* (2015), we adopt a more precise, unidimensional measure of alienation (Nair and Vohra, 2009).

Second, we contribute to studies that aim to provide insights into differences between supervisors and subordinates (e.g. Rollero *et al.*, 2016). So far the predominant focus has been on how leaders could avoid or suppress work alienation among their subordinates (e.g. Judge *et al.*, 2004), or whether participation in decision-making was related to work alienation (e.g. Aiken and Hage, 1966), or simply whether high status jobs were negatively related to work alienation (Rollero *et al.*, 2016). Moreover, the work of Fedi *et al.* (2016) focused on status (low-status employees versus high-status employees in widely different industries) and therefore does not necessarily apply to differences between hierarchical levels. In contrast, the current study will explicitly delineate the conditions that buffer work alienation for different hierarchical groups.

Third, we are the first to examine a possible three-way interaction that may deepen the insights for how different variables (individual characteristics as well as work-related factors) add and interact in their contribution to work alienation, as well as how these interactions may be different depending on the hierarchical position. This may have practical implications as well, as the results from this study could indicate how interventions aimed at reducing work alienation could leverage the critical factors specific to each hierarchical group.

Theoretical background

Work alienation and hierarchical level

Research on work alienation tends to be focused on subordinates, in part because of historical reasons (i.e. the political climate that spawned the concept), but also because subordinates are

more likely to be alienated than their supervisors (e.g. [Banai and Reisel, 2003](#); [Rollero et al., 2016](#)). The probable reason for this is the differences in the type of work. Indeed, on average, subordinates' jobs are less interesting and more specialized compared with managerial jobs ([Chiaburu et al., 2013](#)). Moreover, subordinates experience stronger structural constraints and fewer opportunities to have an impact on their own activities ([Chiaburu et al., 2014](#)). As a consequence, they usually feel like they make only minimal contributions to the core workings of the organization, a feeling that is strongly linked to alienation ([Halbesleben and Clark, 2010](#)).

A second possible reason for different alienation levels in subordinates and supervisors may lie in the process through which individuals become a supervisor. Indeed, when faced with the decision of which subordinate to promote to a higher hierarchical position, one usually looks to individuals with a high emotional stability first ([Ng et al., 2005](#)). Emotional stability, in turn, is a trait which can protect individuals from alienating from work as a reaction to less than ideal working conditions ([Alomeroglu et al., 2017](#)). In other words, individuals who are resistant to alienation may be selected into supervisory positions, which would also make supervisors less alienated than subordinates.

Different levels of work alienation among subordinates and supervisors, however, do not warrant a lack of research on supervisor alienation. First, albeit less commonly than subordinates, supervisors still can and do become alienated from work (e.g. [DeHart-Davis and Pandey, 2005](#); [Lang, 1985](#)). Second, when supervisors become alienated, the detrimental consequences for the organization are arguably larger compared with subordinate alienation (given the strong link between supervisor involvement and subordinate performance; [Babin and Boles, 1996](#)). Finally, the fact that supervisors can become alienated despite not being exposed to job characteristics traditionally linked to subordinate alienation (i.e. lack of autonomy and meaning; [Chiaburu et al., 2014](#)), indicates that sources of supervisor alienation remain largely unknown. Therefore, research outlining the different sources of supervisor alienation and subordinate alienation is crucial.

Subordinates versus supervisors: different sources of work alienation

Although to our knowledge no research yet has directly compared subordinates and supervisors in terms of sources of work alienation, it is possible to build hypotheses based on research linking sources of work alienation to employee status. Specifically, [Fedi et al. \(2016\)](#) evidenced that work alienation of low-status employees (salespersons in superstores and call center personnel) has different antecedents than work alienation of high-status employees (top managers in banks, schools and hotels). Since subordinates are usually lower in status compared with supervisors, status is inherently linked with hierarchical position ([Aquino and Bommer, 2003](#)). Therefore, we believe that the aforementioned research also indicates the presence of differential antecedents of work alienation in subordinates and supervisors.

According to the framework of [Fedi et al. \(2016\)](#), for some employees, work alienation is mostly dependent on the work environment, and more specifically on the (lack of) autonomy possible within their job. Job autonomy, defined as "the degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out" ([Hackman and Oldham, 1976](#), p. 258) has a long history of being linked to work alienation (e.g. [Shantz et al., 2015](#); [Seeman, 1991](#)). This is in line with the tenets of the JD-R model ([Schaufeli and Bakker, 2004](#); [Bakker and Demerouti, 2017](#)), which poses that job autonomy is one of the key job resources, that is, job characteristics that trigger a motivational process which instigates feelings of well-being and which protects against straining effects of job demands on health ([Bakker and Demerouti, 2017](#)). Similarly, a lack of job resources may generate negative outcomes, such as stress, burnout ([Hobfoll, 1989](#)) or work alienation.

As a job resource, job autonomy may decrease work alienation for three reasons. First, giving employees the opportunity to organize and schedule their work increases their sense of control and therefore directly reduces feelings of powerlessness (Lazarus and Folkman, 1984), that is, a core determinant of work alienation (Nair and Vohra, 2012). Second, high autonomy jobs are often perceived and experienced as more meaningful compared with low autonomy jobs (Saks and Gruman, 2014), which in turn drastically decreases the risk of alienation (Mottaz, 1981; Nair and Vohra, 2010). Finally, employees may use the additional control to change negative aspects of their job, such as the narrow scope, and enrich their jobs (Wrzesniewski and Dutton, 2001), which also contributes to a sense of meaningfulness (Tims *et al.*, 2016) and therefore hampers alienation (Mottaz, 1981; Nair and Vohra, 2010).

Empirical evidence is mixed, but overall, studies suggest that job autonomy does indeed have a negative effect on work alienation (see the meta-analysis by Chiaburu *et al.*, 2014). This is illustrated by the finding that work alienation is especially prevalent in monotonous work environments that leave little room for personal input, such as assembly lines or continuous-process production (McKinlay and Marceau, 2011). Hence, we hypothesize the following:

H1. Workers' perception of job autonomy decreases work alienation.

This hypothesis needs to be nuanced, however, as job autonomy determines work alienation mostly in low-status employees (Fedi *et al.*, 2016). High-status employees' work alienation, in contrast, is likely to remain unaffected by job autonomy. The reason for this may be the fact that decision-making is often considered as being an intrinsic part of a high-status occupation. As such, job autonomy may be taken for granted by high-status employees and therefore loses its protective quality against work alienation (Chiaburu *et al.*, 2013; Fedi *et al.*, 2016). Moreover, when high-status employees feel powerless and thus alienated, they cannot blame the job as this is not a constraining factor, that is, their boundaries have to lie elsewhere (Chiaburu *et al.*, 2014). Furthermore, status-level may provide a sense of identity to individuals (Batinic *et al.*, 2010; Jahoda, 1981). When a high status is ascribed to employees by their colleagues, this will likely give them the sense of being resourceful and important, making them less sensitive to demanding aspects of the job. However, when one experiences the attribution of low status, this may thwart basic psychological needs (conform Jahoda's latent deprivation model, 1981), which in turn may strengthen the negative relation between autonomy and work alienation. Feelings of (lack of) autonomy are likely to interact with the attribution of low status in its effect on work alienation.

Given the strong link between status and hierarchical position (Aquino and Bommer, 2003), we believe that the aforementioned results signal differential effects of job autonomy on work alienation in subordinates and supervisors as well. Specifically, we expect that subordinates' work alienation more strongly depends on job autonomy compared with supervisors' work alienation. We therefore hypothesize the following:

H2. Hierarchical level moderates the relationship between autonomy and work alienation, in the sense that autonomy decreases work alienation in subordinates, more so than in supervisors.

While some (i.e. low-status) employees' work alienation is determined by job autonomy, others' work alienation may be more strongly dependent on individual factors (Fedi *et al.*, 2016). These are employees who are not so much restrained by the job context, yet are susceptible to work alienation when they perceive restrictions in their own ability to control the situation. This is again in line with the JD-R model (Schaufeli and Bakker, 2004), in which personal resources, that is, psychological characteristics that relate to the ability to control the work environment, are expected to have outcomes similar to those of job resources (i.e. well-being and health; Bakker and Demerouti, 2017) through similar processes (i.e. the motivational process; Mayerl *et al.*, 2016).

A key concept reflecting perceived control and personal resources, is psychological capital, defined as “an individual’s positive psychological state of development and is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success” (Luthans, Youssef and Avolio, 2007, p. 3). Indeed, knowing that one has such resources at one’s disposal and knowing that one could handle any situation is sure to cancel out feelings of powerlessness (Gupta and Shaheen, 2018; Hayek, 2012). As a consequence, we expect psychological capital to decrease work alienation:

H3. Workers’ psychological capital decreases work alienation.

This statement should also be nuanced as it mostly applies to high-status employees, who do not experience any constraints to their autonomy because of their job (Fedi *et al.*, 2016). In contrast, in low-status employees’ work, individual factors play a much smaller role in alienation, since they do feel mostly constrained by the work context. Low-status employees have less decision latitude than high-status employees (Mustard *et al.*, 2003) and therefore job demands and resources may define the extent of their work alienation more so than their individual psychological disposition. In other words, low-status employees may have to wait to be granted opportunities for enriching their jobs and thus to start relying on individual factors. Again, since status and hierarchical position are linked (Aquino and Bommer, 2003), we expect the effect of psychological capital on work alienation to be stronger for supervisors than for subordinates. We thus hypothesize the following:

H4. Hierarchical level moderates the relationship between psychological capital and work alienation, in the sense that psychological capital decreases work alienation in supervisors, more so than in subordinates.

Buffering subordinates’ alienation response: psychological capital

In short, drawing from the JD-R model (Schaufeli and Bakker, 2004) and inferring from the work of Fedi *et al.* (2016), we propose that subordinates experience work alienation because of contextual factors such as a lack of job autonomy, and that supervisors become alienated because of individual factors such as a lack of psychological capital. However, this view potentially omits two important aspects of personal resources, that is, (1) subordinates are also capable of acquiring personal resources (Luthans, 2002), and (2) according to the JD-R model, these personal resources can attenuate detrimental reactions to a lack of job resources (Bakker and Demerouti, 2017; Van den Broeck *et al.*, 2008). Put differently, psychological capital can help subordinates cope with contextual factors that they do not like (Avey *et al.*, 2009; Grover *et al.*, 2018). Indeed, empirical evidence shows that subordinates with psychological capital, with their self-efficacy, optimism, hope and resilience, view a lack of job resources as less harmful (Grover *et al.*, 2018), as well as more manageable and temporary (Avey *et al.*, 2009). As a consequence, they do not flee stressful and unpleasant situations but instead try to change them (e.g. Ding *et al.*, 2015; Rabenu *et al.*, 2017; Zhou *et al.*, 2017) or patiently endure them (Al-Zyoud and Mert, 2019; Laschinger and Fida, 2014). As a consequence, psychological capital may also protect subordinates from the alienating effects of the low autonomy in their job. We hypothesize the following:

H5. Workers’ psychological capital buffers the effect of lack of autonomy on work alienation.

According to the JD-R model, the use of personal resources (such as psychological capital) as a coping mechanism is, by definition, reactionary, that is, it is triggered by an event such as a perceived spike in job demands or a perceived loss of job resources (Xanthopoulou *et al.*, 2007). Indeed, without an undesirable context, coping is redundant. Since supervisors remain relatively unaffected by job resources such as autonomy (see Hypothesis 2), we therefore expect the buffering effect of psychological capital to be less relevant for supervisors than for subordinates. We therefore propose a three-way interaction effect of hierarchical level, job autonomy and psychological capital on work alienation. In supervisors, it is expected that their psychological capital will not substantially affect the autonomy–work alienation relationship. In contrast, subordinates will be susceptible to effects of their psychological capital in the autonomy–work alienation relationship. Subordinates with less psychological capital may experience a stronger negative relationship between lack of autonomy and work alienation than subordinates who score high on psychological capital, as they cannot draw on hope, optimism, self-efficacy and resilience to buffer or overcome the negative impact of lack of autonomy on work alienation. We therefore hypothesize the following:

- H6. In subordinates, psychological capital buffers the effect of lack of autonomy on work alienation, whereas in supervisors, psychological capital does not buffer the effect of lack of autonomy on work alienation.

Figure 1 shows all hypothesized relationships in a conceptual model.

Method

Sample and procedure

Data were collected in two waves from 294 adults aged from 20 to 67 and living in The Netherlands or Belgium. Participants worked mostly at large organizations (>1,000 employees) from different industries (i.e. governmental, nonprofit, banking, manufacturing). Surveys were administered with a two-month time lag between waves. Prior to data collection, the study design, planned sample, procedure and questionnaires were evaluated and approved by the authors’ institutional Ethics Committee (U2019/04134/NGU). The cover letter of the study explained the relevance of the study and emphasized the anonymity and privacy of respondents. Respondents could stop answering questions at any time during the survey. We provided contact information of the research team, so that questions about the questionnaire or in response to the questionnaire could be dealt with. By starting the questionnaire, respondents were providing informed consent.

We undertook various procedural remedies to minimize the risk on biases in our findings, including common method bias (Podsakoff *et al.*, 2003; Podsakoff *et al.*, 2012). For instance, we

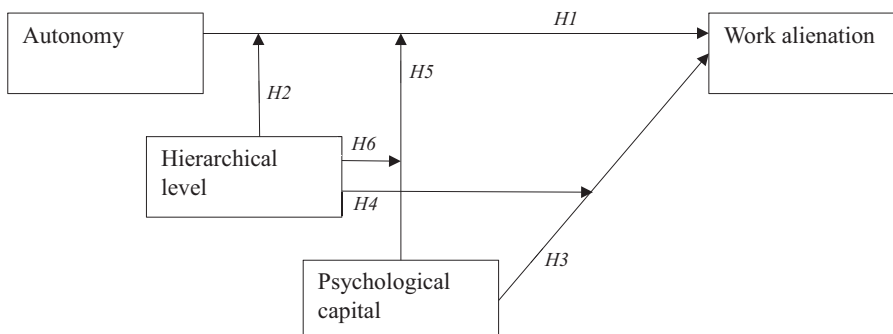


Figure 1. Conceptual model

limit common method bias by gathering data about our dependent variable at a later point in time than we gathered data on the predictor and moderator variables. By guaranteeing the respondents' anonymity and pleading for honest answers we reduced respondents' evaluation apprehension and social desirability bias.

In total 930 employees were invited to partake in the study (mailing lists of certain departments were provided by contacts at the organizations) of which 523 completed the first questionnaire (response rate: 56.2%). The second questionnaire was sent to the same mailing lists as the first and was completed by 441 employees (response rate: 47.4%) of which 294 could be matched to the first wave respondents. Of the final sample, 51% was male, 62% held a supervisory position and 28% had a university degree. The average age was 45.3 years [standard deviation (SD) = 10.1] and average tenure in the current (or similar) function was 12.4 years (SD = 9.7). Subordinates and supervisors were working at the same organizations but were not dyadically linked in the dataset. The supervisors in this study were all directly supervising and coordinating the activities of subordinates.

Measures

To test our hypothesis, we ran a two-wave survey study, using multiple-item scales, closely following internationally validated scales. The survey covered the following construct variables:

Autonomy. First, perceived autonomy was measured in the first wave using three items from the Work Design Questionnaire (WDQ; [Morgeson and Humphrey, 2006](#)), including "This job allows me to plan how I do my work". The items were scored on a Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The internal consistency was sufficiently high ($\alpha = 0.92$).

Psychological capital. Psychological capital was measured in the first wave using items from the scale by [Luthans et al. \(2007a\)](#), consisting of the four subscales of hope (four items, e.g. "If I should find myself in a jam at work, I could think of many ways to get out of it"), resilience (three items, e.g. "I usually take stressful things at work in stride"), optimism (two items, e.g. "I always look on the bright side of things regarding my job"), and efficacy (three items, e.g. "I feel confident in representing my work area in meetings with management"). Every item was scored on a scale ranging from 1 ("strongly disagree") to 6 ("strongly agree"). Confirmatory factor analysis confirmed the four factor structure of the scale (hope, resilience, optimism and efficacy), as it showed a better fit with the data ($\chi^2 = 140.887$; $df = 48$; RMSEA = 0.08; CFI = 0.93; TLI = 0.91; SRMR = 0.058) than the one factor model, which lumps all dimensions of psychological capital into one variable ($\chi^2 = 428.470$; $df = 54$; RMSEA = 0.154; CFI = 0.72; TLI = 0.66; SRMR = 0.095). The [Vuong \(1989\)](#) closeness test indicated that the four-factor model fits better than the one factor model ($p < 0.000$). As a consequence, we have determined the average score on each factor and subsequently we have taken the average overall factor scores to determine the score for psychological capital. The estimated reliability of the psychological capital scale was $\alpha = 0.86$.

Work alienation. Finally, we measured work alienation (second wave) with eight items ([Nair and Vohra, 2010](#)), including "Work to me is more like a chore or a burden". The items were scored on a Likert scale ranging from 1 ("strongly disagree") to 7 ("strongly agree"). The internal consistency was sufficiently high ($\alpha = 0.90$).

Controls. In line with other work alienation studies, for example, [Fedi et al. \(2016\)](#), we assessed several control variables to check whether the demographic background of employees may account for the variance in their work alienation. We assessed age (in years) and tenure (years of experience in the current/similar function). Gender was coded "0"(men) or "1"(women). Hierarchical level was coded "0"(subordinate) or "1"(supervisor). Education level was reported on a six-item scale, which was coded "1" (basic education), "2" (high school/

college), “3” (professional education), “4” (bachelor’s degree), “5” (master’s degree) and “6” (PhD).

Analysis

Prior to the analysis of our hypotheses, we assessed whether the model is robust. To examine whether multicollinearity could be a problem in our dataset, we calculated the variance inflation factors (VIFs). All the VIF values were below 10 (the highest VIF was 3.26). Furthermore, we conducted a common factor analysis (CFA) containing all items in our model. The goodness-of-fit indices indicated a poor fit for the single-factor model ($\chi^2 = 1991.697$; $df = 230$; $RMSEA = 0.161$; $CFI = 0.51$; $TLI = 0.46$; $SRMR = 0.149$), and a much better fit for the model that contains all construct variables ($\chi^2 = 744.906$; $df = 227$; $RMSEA = 0.088$; $CFI = 0.86$; $TLI = 0.84$; $SRMR = 0.074$), which suggests that our measures provided sufficient discriminant validity, and that bias from common method variance is unlikely (Podsakoff *et al.*, 2003, 2012). Moreover, all correlations (see Table 1) are below the threshold of 0.70 (Tabachnick and Fidell, 2001), which again indicates that the likelihood of multicollinearity is low. We tested our hypotheses by conducting structural equations modeling, using the R-package Lavaan (Rosseel, 2012).

Results

Preliminary analyses

Table 1 presents the means, standard deviations and correlations between the main variables in our study. We observe that the control variables do not structurally associate with any of the main variables, as all correlations are below 0.3. Hence, to increase the power of our tests, we omitted the control variables from subsequent analyses, in accordance with recommendations of Becker (2005) and Bernerth and Aguinis (2016). Table 1 indicates that the level of autonomy as well as psychological capital correlate negatively with work alienation in the overall sample. Hierarchical level is not significantly correlated to work alienation.

Hypothesis testing

As a first analytical step, we regressed the predictor variables on work alienation by linear multiple regression analysis (Model 1, Table 2). The results show that autonomy and psychological capital are positively related to work alienation. We found no support for a direct relationship between hierarchical level and work alienation, which may indicate that

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Work alienation T2	1.81	0.92							
2. Autonomy T1	4.22	0.79	-0.33**						
3. Psychological capital T1	5.01	0.53	-0.41**	0.33**					
4. Age	45.28	10.12	-0.02	0.10	0.12*				
5. Tenure	12.44	9.69	-0.01	0.09	-0.02	0.51**			
6. Gender	0.49	0.50	0.01	0.01	-0.10	-0.19**	-0.14*		
7. Hierarchical level	0.62	0.49	-0.09	0.15**	0.19**	0.26**	0.12*	-0.12*	
8. Education level	4.14	0.97	0.04	0.06	0.07	0.01	-0.13*	-0.02	0.12*

Note(s): *M* and *SD* are used to represent mean and standard deviation, respectively. * indicates $p < 0.05$. ** indicates $p < 0.01$. T1 refers to the first measurement moment and T2 refers to the second measurement moment

Table 1. Means, standard deviations and correlations with confidence intervals ($n = 294$)

Table 2.
Regression analyses
for work alienation
on T2

Predictors	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Estimates	Std. beta	Estimates	Std. beta	Estimates	Std. beta	Estimates	Std. beta	Estimates	Std. beta	Estimates	Std. beta
(Intercept)	580	0.00	663	-0.02	6.13	-0.01	10.48	-0.03	10.02	-0.04	13.71	-0.04
Autonomy T1	-0.26	<0.001	-0.46	<0.001	-0.26	<0.001	-1.37	<0.001	-1.35	-0.18	-2.28	-0.17
Psychological capital T1	-0.58	<0.001	-0.58	<0.001	-0.65	<0.001	-1.56	<0.001	-1.30	-0.34	-2.09	-0.32
Hierarchical level T1	0.01	0.885	-1.51	0.02	-0.62	0.01	0.01	0.903	-0.78	0.01	-8.38	0.03
Autonomy × hierarchical level			0.36	0.15	0.003				0.34	0.14	2.16	0.11
Psychological capital × hierarchical level					0.13	0.04			-0.13	-0.04	1.47	-0.04
Autonomy × psychological capital							0.23	0.11	0.027	0.09	0.38	0.07
Autonomy × psychological capital × hierarchical level											-0.38	-0.08
Observations	294		294		294		294		294		294	294
R ² /R ² adjusted	0.211/0.203		0.235/0.225		0.213/0.202		0.225/0.214		0.243/0.227		0.251/0.233	

Note(s): * denotes $p < 0.1$; T1 refers to the first measurement moment and T2 refers to the second measurement moment

the relationship between hierarchical level and work alienation is not simple and straightforward (i.e. not linear or direct). Hypothesis 1 suggested a direct negative relationship between autonomy and work alienation. Model 1 in Table 2 presents evidence for this hypothesis. Next, we added the interaction between autonomy and hierarchical level, which shows a positive and significant interaction (Model 2 in Table 2), consistent with Hypothesis 2. Hypothesis 3, which suggested that the worker’s psychological capital is negatively related to work alienation, is supported by our analysis (Model 1). Model 3 shows that there is no significant moderating effect of hierarchical level on the psychological capital–work alienation relationship, which is not in line with our expectations (Hypothesis 4). Model 4 probes the hypothesized interaction between autonomy and psychological capital (Hypothesis 5), which is shown to be significant. In Model 5 we have entered all two-way interaction effects in the model at the same time. The interaction between autonomy and the hierarchical levels stays intact, while the significance of the interaction between autonomy and psychological capital suffers slightly. Model 5 presents the results of the three-way interaction model. We find a marginal significance of the three way interaction. We suspect that this may be due to the limited power in our model for undertaking three interaction effects as well as the three-way interaction simultaneously. Yet, Model 5 provides useful insights, which will become clear in the simple slope analyses.

To further probe the positive and significant interaction between autonomy and hierarchical level (Hypothesis 2), we plotted the relationship between autonomy and work alienation for leaders and subordinates in Figure 2, using the R package sjPlot (Gelman, 2008). The figure shows that for subordinates there is a significant negative relationship between the perceived autonomy and the level of work alienation.

The significant two-way interaction between autonomy and psychological capital (Hypothesis 5) allowed us to conduct simple slope tests, following the procedure suggested by Aiken *et al.* (1991). Measures were mean-centered to facilitate interpretation of the results. Figure 3 shows the simple slopes for employees with low (one standard deviation below the mean) and high (one standard deviation above the mean) psychological capital, as recommended by Cohen and Cohen (1983). This analysis indicates that the negative relationship between perceptions of autonomy and work alienation is buffered by higher

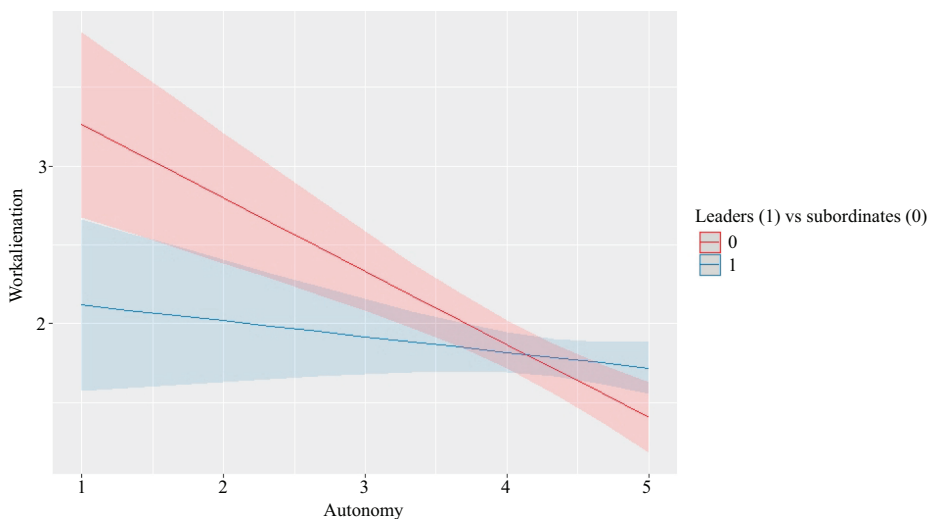


Figure 2. Two-way interaction of hierarchical level on the relation between autonomy and work alienation. Shading refers to the confidence interval

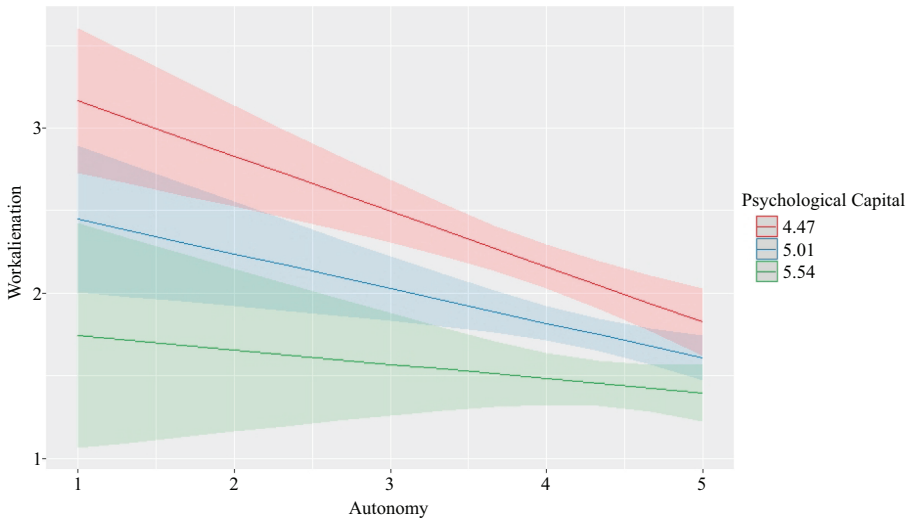


Figure 3. Two-way interaction of psychological capital on the relation between autonomy and work alienation

levels of psychological capital. The bottom line (green) in Figure 3 is flatter than the top line (red).

The three-way interaction was added in Model 6 (Table 2). Although the interaction was only significant at the $p = 0.08$ level, the simple slope analysis revealed interesting differences between leaders and subordinates. Figure 4 shows the simple slopes for employees with low (one standard deviation below the mean) and high (one standard deviation above the mean) psychological capital for leaders (right panel) as well as subordinates (left panel). The figure shows that the relationship between autonomy and work alienation depends on the level of psychological capital for subordinates, but not for leaders. This result is confirmed by the slope difference tests (Dawson and Richter, 2006), which revealed significant differences

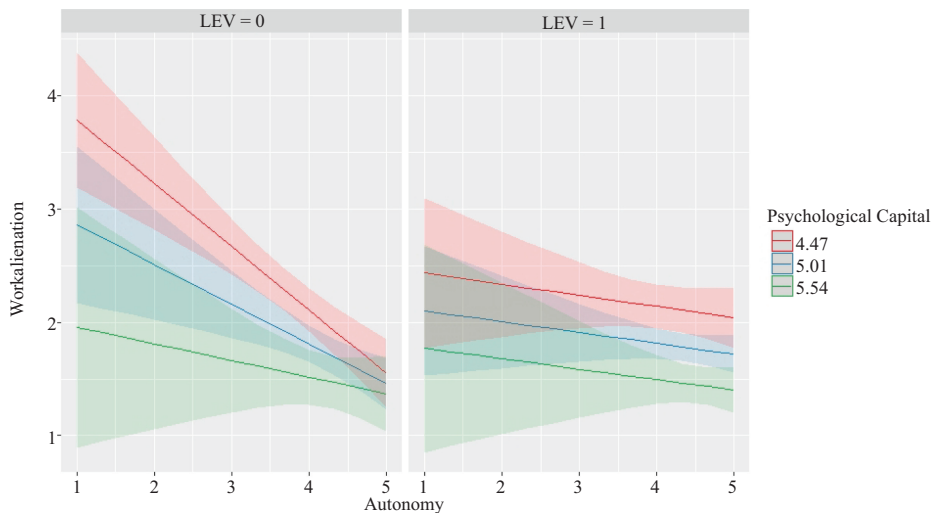


Figure 4. Three-way interaction of hierarchical level and psychological capital on the relation between autonomy and work alienation

between the slopes of the lines in the left panel of Figure 4 referring to subordinates. Specifically, autonomy is more negatively related to work alienation for subordinates with low psychological capital ($b = -0.50$) than for subordinates with high psychological capital ($b = -0.1$) ($p = 0.04$). In contrast, autonomy is negatively related to work alienation for leaders, independent of their level of psychological capital ($b = -0.05$ vs $b = -0.09$, $p = \text{n.s.}$).

Discussion

In this study, we investigated differential antecedents of work alienation in subordinates and supervisors, building hypotheses from the JD-R model (Schaufeli and Bakker, 2004) and the work of Fedi *et al.* (2016). Specifically, we tested whether and how the perception of autonomy (or the lack thereof) and individual characteristics of employees (i.e. psychological capital) are related to work alienation in subordinates and supervisors. We found that the often hypothesized relationship between autonomy and work alienation is moderated in a three-way interaction (autonomy \times psychological capital \times hierarchical level).

Theoretical implications

The theoretical contribution of our study is threefold. First, we advance on current insights in the work alienation literature by adopting a detailed, unidimensional measure of alienation (Nair and Vohra, 2009) and assessing work-related factors as well as individual characteristics as antecedents to work alienation. Specifically, we found that perceptions of autonomy as well as psychological capital are negatively related to work alienation (Hypotheses 1 and 3). Job autonomy and psychological capital have been linked to work alienation before (e.g. Shantz *et al.*, 2015), yet few studies simultaneously assess work-related factors as well as individual characteristics as antecedents to work alienation. Our study highlights that both categories of factors are important and may even interact, in the sense that psychological capital can buffer the alienating effect of a lack of autonomy (Hypothesis 5).

A second contribution of our study pertains to alleged differences between supervisors and subordinates (e.g. Rollero *et al.*, 2016). We extend and advance the work of Fedi *et al.* (2016) by investigating differences between hierarchical levels and not merely comparing low-status versus high-status employees. We found that the negative relationship between perceptions of autonomy and work alienation differs when comparing subordinates to supervisors, as autonomy decreases work alienation in subordinates, more so than in supervisors (Hypothesis 2). These findings are in line with our expectations and extend prior findings by Rollero *et al.* (2016), who have found a positive relationship between having a high status job and feelings of well-being (proxied by a lack of work alienation), and by Fedi *et al.* (2016), who evidenced that autonomy impacts work alienation in low-level jobs, more so than in high-level jobs. We did not find support for a moderating effect of hierarchical level on the relationship between psychological capital and work alienation. Apparently, the relationship between personal resources (in terms of psychological capital) and work alienation is negative, independent from the hierarchical position (unlike prior findings on status – personal resources had a negative effect on work alienation in high-status jobs but not in low-status jobs; Fedi *et al.*, 2016). Subordinates and supervisors alike experience the same beneficial effect of psychological capital on decreasing work alienation.

Third, by investigating a three-way interaction, we support the current understanding about how individual characteristics as well as work-related factors interact in their contribution to work-related outcomes (according to the JD-R model, Bakker and Demerouti, 2017) and extend this understanding to the specific outcome of work alienation. Moreover, our findings show how these interactions may differ depending on the employee's hierarchical position (Hypothesis 6). Psychological capital seems to buffer the alienating effect of a lack of autonomy in subordinates, but not in supervisors, presumably because the latter do not suffer from work alienation as a consequence of a lack of autonomy. However,

this effect was only marginally significant ($p = 0.08$), potentially because the sample size just falls short for the detection of three-way interactions, so a replication with a larger sample size is needed to give a more definite answer.

Practical implications

It has been shown that work alienation is negatively related to job performance and positively related to deviant work behaviors (Shantz *et al.*, 2015). Hence, it is important for organizations to address work alienation among employees and find ways to alleviate alienation.

The findings of our study indicate how interventions aimed at reducing work alienation could be designed. We find a significant interaction between psychological capital and autonomy, suggesting that psychological capital buffers the negative association between perceptions of autonomy and work alienation (Hypothesis 5). This finding suggests that human resource (HR) practices aimed at increasing psychological capital as well as feelings of autonomy in employees may alleviate work alienation. Moreover, this approach may be especially helpful for employees at the subordinate level, as evidenced by the results in relation to Hypothesis 6. Concretely, feelings of autonomy and development of psychological capital can be improved by adopting HR practices that emphasize individualism and independence, in order to engender feelings of empowerment, meaning and significance. Employees who perceive autonomy at the workplace will experience meaningfulness in their work, which counteracts feeling of alienation. Managers should be aware of their role in transmitting empowering HR practices to their subordinates, as they can contribute to feelings of autonomy in their subordinates (Purcell and Hutchinson, 2007). Managers can highlight the meaning and significance of their subordinates' roles in the organization as a whole (Nair and Vohra, 2009). Furthermore, for supervising managers themselves it may be insightful to know that while a higher hierarchical level may imply heightened stress levels that are induced by their large job demands, they also experience high levels of autonomy, which kindles lower levels of work alienation and associated negative health effects. Being a boss lessens alienation.

Limitations and avenues for future research

No study is without limitations. First, as the overall study was reliant on self-report measures, the results may have been influenced by common method variance (CMV; Podsakoff *et al.*, 2003). However, our variables of interest, work alienation, perception of autonomy and psychological capital, are difficult for others to assess and in such cases, the use of self-reports is considered to be warranted (Conway and Lance, 2010; Kim *et al.*, 2013). Nevertheless, future studies may want to think of alternative research designs to further minimize the risk of bias. In this respect it may be interesting to conduct experience sampling methods in combination with diary studies. Such a research design could assess the level of work alienation on a daily basis over a prolonged time span.

Second, our sample consists of data from Dutch employees. Although we gathered data from many different organizations, thereby, increasing generalizability, our findings may not necessarily be generalizable to other countries. Year after year it has been shown that the Dutch are among the happiest people in the world (Boelhouwer and van Campen, 2013; De Graaf *et al.*, 2010), which is not to say that their level of work alienation will automatically be low. Therefore, future studies may try to replicate our findings by tapping into different samples.

Third, future research may want to add other antecedents of work alienation to our model. For example, studies have indicated the role of task variety and task identity as factors that may reduce work alienation (e.g. Chiaburu *et al.*, 2014). Also supportive leader behaviors have been identified as important for decreasing subordinate alienation (Sarros *et al.*, 2002). Relatedly, multilevel research designs may reveal how employees' work alienation is related

to leader behaviors as well as team level and organizational level resources. A multilevel approach could show how organizational and employee level resources could be synchronized to curb work alienation.

Conclusion

The concept of work alienation is worthy of research attention as it has been linked to commitment, work engagement, frustration and burnout and thereby the experience of work alienation among employees can have extensive consequences for their own wellbeing and for the overall organizational performance. Despite the limitations of our study, we feel that our study has contributed to gaining insights about the relationship between autonomy, psychological capital and work alienation, as well as the role of the hierarchical level in influencing these relationships.

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