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Changing Work Engagement: The Longitudinal Effect of a Job Redesign Intervention Among Public Sector Employees

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Abstract
Work or employee engagement might be increased through job re-design interventions such as top-down managerial interventions, bottom-up job crafting or bipolar ideals. However, there is a lack of specific understanding how public-sector employees react on specific top-down interventions aimed for increasing their vigor, dedication and absorption. In order to gain more insight into how a top-down (managerial) job re-design intervention could foster work engagement, we conducted a four-wave longitudinal diary study on the sample of white-collar employees and their respective supervisors from two public-sector organizations. Specifically, we explored the effect of the managerial job redesign intervention on public-sector employee work engagement between baseline (T1) and post-intervention (T4). We tested a multiple mediator-single outcome model in which a job design intervention influences work engagement by changing multiple job characteristics. Finally, we also checked for the extent to which change in work engagement can be explained by specific changes in certain job characteristics. Our results showed that work engagement of public-sector employees may also be enhanced by redesigning their jobs through a managerial job re-design intervention. Additional insights regarding work engagement and job re-design of public sector employees are given.

Keywords
Work engagement, job design, job interventions, public-sector employees.

Introduction

Work or employee engagement is a desired, fulfilling affective-cognitive state of mind that is closely associated with employee well-being and performance (e.g. Christian, Garza, & Slaughter, 2011). According to the job demands-resources (JD-R) model (e.g. Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), work engagement is driven by the motivating potential of jobs (Schaufeli, Salanova, González-Romá, & Bakker, 2002) and might be increased through job re-design interventions such as top-down managerial interventions, bottom-up job crafting or bipolar ideals. These planned change initiatives aim to change job characteristics as a means of enhancing employee outcomes (Parker & Wall, 1998). While proactive and employee-led approaches to changing jobs are currently under the spotlight, we have somewhat neglected the original, top-down (managerial) perspective of job design in organizations through which supervisors formally shape work environment for their subordinates by setting targets, describing job tasks, and providing resources (e.g. Bakker & Demerouti, 2016).

Organizations still predominantly empower supervisors (managers) to plan, organize and control the work of their direct reports (employees).

This might be particularly true for public-sector organizations which use less advanced human resource management (HRM) practices than private companies (e.g. Vanhala & Stavrou, 2013). While we have certain knowledge about managerial job/task design change efforts (e.g. Griffin, 1991; Hackman, Pearce, & Wolfe, 1978; Morgeson & Campion, 2002; Nielsen, 2013), there is a lack of specific understanding how public sector employees – who possess a greater desire for intrinsic nonmonetary opportunities than their private counterparts (Giaque, Anderfuhren-Biget, & Varone, 2013) – react to specific top-down interventions aimed for increasing their vigor, dedication and absorption.

The recent, pioneering meta-analysis of the effectiveness of work engagement interventions (Knight, Patterson, & Dawson, 2016) witnessed the steady emergence of this research stream and revealed a small, positive, but reliable effect of work engagement interventions on work engagement. However, the sustainability of these effects is unclear, sample size was low, and different intervention types were examined together thus not allowing making conclusions about type-specific effects. Nevertheless, their meta-analytical review highlighted the need for conducting and examining more work engagement interventions. What we currently need is a broader array of both theoretically- and empirically-driven research into how to better engage public sector employees by making necessary job-related changes. Moreover, the possibility that employees change their behavior in response to the content and demands of their jobs, suggests the need for dynamic versus static models of job design (e.g. Clegg & Spencer, 2007).

1. Theoretical framework and hypothesis development

Managerial job re-design is a strategy that managers might use on a regular basis making adjustments and alterations to jobs to fit business requirements with employees' needs and skills (Oldham & Fried, 2016). An implementation of a job re-design intervention in public sector organizations could positively affect job characteristics and employees' work engagement. Bearing in mind that higher levels of work engagement can be positively associated with work performance (e.g. Bakker & Bal, 2010), putting effort into evaluating, fostering, and sustaining work engagement should be of special interest to public sector organizations.

In order to gain more insight into how a top-down (managerial) job re-design intervention could foster work engagement, we conducted a four-wave longitudinal diary study on the sample of white-collar employees and their respective supervisors from two public-sector organizations. Specifically, we explored the effect of the managerial job re-design intervention on public sector employee work engagement between baseline (T1) and post-intervention (T4). In addition, we tested a multiple mediator-single outcome model in which a job design intervention influences one type of employee outcome (i.e. work engagement) by changing multiple job characteristics (see Holman, Axtell, Sprigg, Totterdell, & Wall, 2010). Finally, we also checked for the extent to which change in work engagement can be explained by specific changes in certain (enacted) job characteristics.

The managerial job re-design intervention was implemented as combination of a job resource building and leadership training interventions (Knight et al., 2016). It aimed to enable managers to transfer specific knowledge and skills to their employees, and to foster job and personal resources building among them. In this way, this intervention assisted and empowered managers and employees to modify a particular set of job characteristics (dominantly the enacted ones) and better align them with their job requirements, interests, and skills. Stated in a more formal way, we formulate our first hypothesis:

H1: Managerial job re-design intervention modifies (enacted) job characteristics of public sector employees.

Furthermore, previous studies revealed that managerial job re-design interventions can foster work engagement, particularly in group settings (Knight et al., 2016). When employees in public sector organizations experience appropriate support and acknowledgement from their managers, this can not only modify some of their job characteristics, but also positively affect the levels of their work engagement (Giauque et al., 2013). Specifically, managerial job re-design activities can modify job characteristics (Schaufeli & Bakker, 2004) to better suit their employees' capabilities and aspirations, which, in turn, can stimulate and energize employees and make their work more meaningful. We present these notions in our second and third hypothesis:

H2: Managerial job re-design intervention increases public sector employee work engagement

H3: Change in job characteristics is positively associated with change in public-sector employee work engagement.

2. Methodology

2.1. Research design

We conducted a non-participative managerial job re-design intervention in which changes are imposed on the job holder by their supervisors. Survey data were collected in four time points across six months starting from the pre-intervention measurement (T1), and followed by three post-intervention measurements (T2, T3 and T4). Pre-intervention measurement was aimed at recognizing the current state of the public-sector job design. Employees were asked to complete the on-line questionnaire and provide perceptual values of their job characteristics. Two months later, the managerial job re-design intervention started with training workshops organized for 20 direct supervisors. In-house workshops introduced the research topic to participants and briefed them about the pre-intervention measurement results. In addition, job re-design intervention opportunities have been explained and necessary instructions were given to conduct one. For this purpose, we slightly adapted the original Job Crafting Exercise (Berg, Dutton, & Wrzesniewski, 2008) by taking a managerial perspective to job-design changes.

After completing the workshop, managers had a one-month time period for reflection and to think about potential job re-design intervention actions for each of their subordinates. Supervisors were given responsibility to actually design and implement job re-design changes in the following two months. Four weeks after supervisors started to introduce employees' job-related changes, an on-line post-intervention measurement with two follow-ups were administered. Employees completed the same job-design questionnaire throughout three consecutive weeks thus enabling us to study step-wise effects of the planned intervention on job characteristics and work engagement within the public-sector workforce.

Research design is graphically presented in Figure 1.

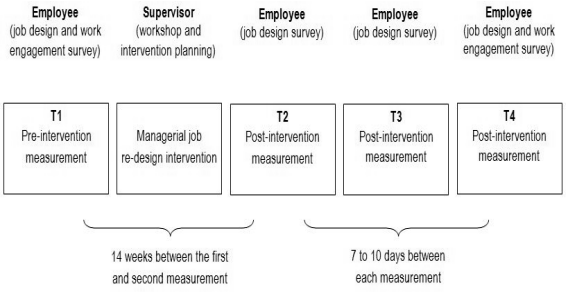

Figure 1 Research design

2.2. Organizational context and participants

The study initially encompassed 65 white-collar employees and 20 supervisors from two Croatian public sector organizations providing administrative and professional services. Employees who had more than six months of job tenure received an e-mail invitation via SurveyMonkey to participate in the survey. From a total number of 65 full-time employees, we received all responses at T1, giving a 100% response rate. However, repeated questionnaire rounds resulted in sample size decrease (T2 – 83.1%; T3 – 80.0%) so that at T4 there were 50 participants (the final response rate of 76.9%). Our sample was strongly gender-biased (92% of women), representing a highly educated workforce (88.0%) that was on average younger than 40 years old (M = 37.06; SD = 7.28). All supervisors participated in the workshop and promised to implement necessary job-related changes that could boost their employees' work engagement.

2.3. Measures

The employee-reported measures of chosen job characteristics were taken from the Work Design Questionnaire (WDQ), a comprehensive instrument and a general measure of job design originally developed and validated by Morgeson and Humphrey (2006). Employees were asked to indicate the extent to which they agreed or disagreed with statements (5-point Likert-type scale) related to the nature of their jobs. We gathered their self-perceptions because there is strong evidence that employee self-ratings are congruent with objective job features (Fried & Ferris, 1987). Although we used previously validated measures, a translation/back translation procedure was applied. In addition, the questionnaires were pre-tested for reliability and the Cronbach's alpha values at each point of measurement (see Table 1) were clearly above the acceptable level of .60 (Kline, 2000).

Work engagement was measured with the Utrecht Work Engagement Scale (UWES) developed by Schaufeli et al. (2002). We also controlled for employee gender, employee age, supervisor gender, and supervisor age. All dependent and independent measures were based on employee self-perceptions.

3. Results

Table 1 shows descriptive results (means and standard deviations) for perceived job characteristics at four different time points (T1-T4), and for work engagement as a dependent variable at the starting and ending point. In addition, the statistically significant results of the paired sample t-tests (T1-T2, T1-T3 and T1-T4) are marked with asterisk(s). Whereas the majority of job characteristics examined had a negative or constant time trend (except of work autonomy), findings reflected no significant mean change in job complexity, information processing, role ambiguity and task variety, thus confirming their stability. On the other hand, the largest absolute mean change ($M_{T1} - M_{T4}$) was -.25 for both task identity and supervisor support. Other significant mean changes from T1 to T4 were -.20 for task significance and workload, and -.18 for task interdependence. Obviously, employees have acknowledged the job re-design intervention delivered by their supervisors, which eventually led to certain changes in one's perception of their job characteristics. These changes were step-wise in nature and did not happen simultaneously for different (enacted) job characteristics. Specifically, in step 1 (T1→ T2) significant downward change was reported for task interdependence and workload; step 2 (T2→ T3) was labeled with considerable decrease in task identity; and step 3 (T3→ T4) was completed by noticeable decline in task significance and supervisor support. These episodic findings confirmed our first hypothesis that a managerial job re-design leads to significant changes in employee (enacted) job characteristics.

Table 1 Descriptive statistics and scale reliability measures at each time point (T1-T4)

Study variables		Pre-intervention measurement			Post-intervention measurement									Period of change
		T1			T2			T3			T4			
		M	(SD)	α	M	(SD)	α	M	(SD)	α	M	(SD)	α	
Job demands	Task interdependence	3.76	(.87)	.944	3.49**	(.74)	.900	3.54**	(.72)	.904	3.58*	(.79)	.910	T1 → T4
	Job complexity	3.54	(.80)	.807	3.60	(.72)	.789	3.51	(.66)	.747	3.46	(.78)	.825	stable
	Information processing	4.41	(.59)	.771	4.33	(.50)	.811	4.31	(.51)	.781	4.32	(.52)	.820	stable
	Role ambiguity	3.71	(.70)	.891	3.78	(.61)	.846	3.78	(.62)	.866	3.71	(.63)	.614	stable
	Workload	3.36	(.73)	.670	3.19**	(.64)	.717	3.18*	(.59)	.623	3.16**	(.58)	.877	T1 → T4
Job resources	Work autonomy	3.57	(.79)	.846	3.77**	(.73)	.874	3.77*	(.62)	.835	3.68	(.55)	.733	T1 → T3
	Task variety	4.42	(.64)	.941	4.30	(.64)	.883	4.37	(.60)	.953	4.38	(.50)	.962	stable
	Task identity	3.94	(.64)	.868	3.85	(.72)	.898	3.66***	(.70)	.931	3.69***	(.55)	.850	T2 → T4
	Task significance	3.59	(.90)	.937	3.49	(.76)	.902	3.46	(.82)	.953	3.39*	(.79)	.968	T3 → T4
	Supervisor support	4.17	(.75)	.870	4.09	(.84)	.885	4.04	(.81)	.883	3.92**	(.78)	.885	T3 → T4
Work engagement		3.47	(.74)	.923	-	-	-	-	-	-	3.65**	(.61)	.912	T1 → T4
F-test value			1.667			-			-			2.314		-
Adj R^2			.122			-			-			.215**		-

Note: Statistically significant results of the paired samples t-test are shown with the following asterisk(s): * p < .10 ; ** p < .05 ; *** p < .01

Next, we conducted hierarchical linear regression analyses (see Table 2) to determine whether a managerial job re-design intervention increases work engagement of public-sector employees. At T1 neither overall multiple regression model (Model 1) or some regression coefficients were significant at 5% level. However, after the managerial job re-design intervention was completed, at T4, the overall regression model (Model 2) became significant at 1% level and explained 15.4% of variance in work engagement, although only supervisor support was a significant job-design

predictor (β = .467, p < .01). Nevertheless, we may accept our second hypothesis about the positive influence of managerial job re-design on public-sector employee work engagement.

Table 2 Hierarchical linear regression analyses results for work engagement as a dependent variable

	Work engagement					
	Model 1 (T1)		Model 2 (T4)		Model 3 $(T1 - T4)^2$	
Measure	B	SE	B	SE	B	SE
Intercept	2.382	1.433	2.092*	1.018	.025	.678
Employee gender	-.205	.400	-.111	.304	.221	.359
Employee age	-.005	.017	.010	.012	-.016	.014
Task interdependence	.119	.131	-.048	.122	.120	.149
Workload	-.154	.158	-.129	.148	.334*	.148
Task identity	.072	.193	-.059	.160	.037	.170
Task significance	.074	.132	.189	.116	.283*	.139
Supervisor support	.238	.160	.368**	.129	.357**	.115
F-test value	1.089		8.757		3.557	
Adj R^2	.013		.154*		.272**	

Notes: The table presents unstandardized regression coefficients (B) and standard errors (SE) for each measure.
* p < .05 ; ** p < .01

Finally, we calculated a squared difference score $(T1 - T4)^2$ for each of five enacted job characteristics, as well as for public sector employee work engagement. These difference scores were entered into the regression equation to determine to what extent perceived changes in enacted job characteristics predict change in work engagement. The overall regression model (Model 3) was significant at 1% level and explained 27.2% of variance in the outcome variable (change in work engagement). In addition, three out of five squared difference scores were recognized as significant job-design predictors – Δ workload (β = .288, p < .05), Δ task significance (β = .264, p < .05), and Δ supervisor support (β = .387, p < .01). Thus, we were able to confirm our third hypothesis that a positive relationship exists between changes made in job characteristics and the subsequent change in work engagement.

Conclusion

Our study offers several contributions. Specifically, we showed that work engagement of public-sector employees may also be enhanced by redesigning their jobs through a managerial job re-design intervention, not only through participative interventions such as job crafting or ideals. Additionally, a clear distinction has been made between typical (chronic) and enacted (flexible) levels of job characteristics, thus contributing to recent discussions on static versus dynamic job design (Daniels, 2006). Job characteristics that were perceived to change from T1 to T4 were task interdependence, workload, task identity, task significance and supervisor support. Interestingly, values for these enacted job attributes unexpectedly decreased favoring Aristotle's idea of a 'too much of a good thing' (Grant & Schwartz, 2011). Finally, change in multiple enacted job characteristics were reported to be positively associated with change in work engagement. In other words, by identifying whether the change in work engagement is caused by a change in one or more job characteristics (Holman et al., 2010), we clearly explained the mechanism how managerial job re-design interventions might lead to successful employee outcomes. SM

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