

New ways of working and quality of working life: a macroergonomic approach

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Abstract. “New ways of working” (NWW) environment is a denotation for modern workplaces that are characterized by an increased use of media technologies, and temporal and spatial flexibilities.

In three empirical studies, the role of job resources (autonomy and social interaction) in NWW environments was investigated. Study 1 examined general NWW environments using qualitative data, whereas studies 2 and 3 focused on specific NWW environments (flexible office concepts, Coworking Spaces). The results indicate that autonomy and social interaction are present in NWW environments, but they also provide evidence for side effects like permanent accessibility or changes in the quality of social interactions.

Keywords. New ways of working, autonomy, social interaction, quality of working life.

1. Introduction

In today's working world more and more employees work in flexitime or part-time contracts (Eurostat, 2009). Flexible working is defined as a job design where employees are provided with the possibility to autonomously choose when, where, and for how long to work on tasks (Hill, Grzywacz, Allen, Blanchard, Matz-Costa, Shulkin, & Pitt-Catsouphes, 2008). Fixed working schedules are replaced by flexible ones, and employees are also provided with various places to work at (while commuting, at home, or at various places within an organization).

The term “New ways of working” (NWW), introduced by Baarne, Houtkamp, and Knotter (2010; see ten Brummelhuis, Bakker, Hetland, & Jeulemans, 2012), conceptualizes this flexible working. Referring to this definition, media and information technology facilitates temporal and spatial flexibility. Remote access, for example, allows employees to work in a café in the evenings or at home on weekends. Smartphones enable employees to manage their email-correspondence while commuting to work in the train or subway or on any other place. Thus, workers are not forced to go to the office at a specific time for work-related tasks or interaction with colleagues.

NWW environments comprise both positive and negative aspects. On the one hand, such environments are related positively to job satisfaction (Baltes, Briggs, Huff, Wright, & Neuman, 1999), work engagement (ten Brummelhuis et al., 2012), and balancing working with nonworking life (Byron, 2005).

On the other hand, NWW may contribute to work intensification (Kelliher & Anderson, 2010), and work-nonwork conflicts (Hill, Ferris, & Martinson, 2003). Job satisfaction, work engagement or conflicts are aspects of a general quality of working life, and are influenced by job demands and job resources (see Demerouti, Bakker, Nachreiner,

& Schaufeli, 2001). Job resources have positive direct effects on quality of working life and they may also help to buffer the potentially negative effects of new demands.

The present paper focuses on autonomy and social interaction, as they are two central job resources positively influencing quality of working life. Autonomy has for been found to be positively related to work engagement (Taipale, Selander, Anttila, & Nätti, 2011). Furthermore, it is also the most central aspect of NWW environments. Thus, an implementation of NWW may foster its positive effects. Nevertheless, we argue that negative side effects may occur, as some people might be overchallenged with having to continuously manage themselves and their work-tasks.

Similar to the positive effects of autonomy, previous studies showed that socially supported employees are more engaged (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). We argue that social support, or social interaction in general, plays an even more integral role in NWW, where temporal and spatial flexibilities may reduce contacts to coworkers.

In three separate studies we investigated the role of autonomy and social interaction in NWW workplaces. Three different NWW conditions (NWW in general, Coworking Spaces, flexible office concepts) were studied and are discussed from a macro-ergonomic perspective.

2. Study 1: Autonomy and external control in general NWW experiences

The goal of this qualitative interview study was the investigation of autonomy and external control in general NWW experiences (see Gerdenitsch, Kubicek, & Korunka, submitted). The study focused on young employees (digital natives; Prensky, 2001), who grew up with new media technology, and therefore should be used to it.

2.1 Methods

The sample consists of 45 employees (27 men), with an age ranged from 22 to 31 years ($M = 26.37$, $SD = 2.21$). Participants had an academic background (i.e. journalism, architecture, economics, and logistical management). They were asked to describe temporally and spatially flexible situations, they experienced in their work. Then they had to state the amount of autonomy and external control they perceived for each situation. Summarizing qualitative content analysis (Mayring, 2008) was used to analyze the situational descriptions.

2.2 Results

The results show that digital natives indeed perceive temporal and spatial flexible situations within their work. They state that positive aspects of temporal and spatial flexible situations are perceived decision latitude, a balance between working and non-working life, increased efficiency and work quality, and possibilities to push their careers.

On the other hand, negative aspects are an increased work-non-work conflict, high workload, permanent accessibility, and a disturbing work environment. In situations where digital natives experience decision latitude, a balance between working and non-working life, and increased efficiency and work quality, autonomy ratings were higher than ratings on external control. Flexible working situations that fulfill the basic need for autonomy were appraised positively. Interestingly, ratings on external control were pretty high in negative situations.

3. Study 2: Collaboration and social interaction in a flexible office concept

In this study the implementation of a flexible office concept in a longitudinal design with three measurement times was analyzed. 63 employees of the human capital department of an international consulting firm were working on conventional office workplaces. An extensive new office concept was designed and implemented. Instead of personal office desk workplaces, the new concept consisted of different zones for specific work activities. For instance, ‘call boxes’ were used for telephone calls, whereas creative work was done in the quiet environment of a ‘Zen Zone’. Different communication zones were designed to accommodate a wide range of communication and meeting needs. The new office concept was accompanied both by wide-ranging spatial and time flexibilities and a new IT communication concept, which as such is paradigmatic for NWW environments.

3.1 Methods

A mixed-method approach, consisting of an online questionnaire and interviews, was applied. The first measurement (t1) took place while the employees were still working at their conventional workplaces. About five months after the t1 measurement, and about one month after the start of the new office concept, a second measurement (t2) was realized. A third (t3) measurement is planned for about eight months after the start of the new office concept. 60 employees participated in the t1 measurement (return rate: 95%), and 48 (out of 58; return rate: 87%) in the t2 measurement. The online questionnaire consisted of short scales measuring – besides other dimensions - collaboration with colleagues from the own team and other teams. Interviews were conducted with three employees.

3.2 Results

Linear regression analyses were conducted to test if collaboration with colleagues from the own teams and other teams changed after the office redesign. Results show that there was no change in the amount of collaboration with others within their own team ($p = .30$). Interestingly, collaboration with colleagues in other teams increased ($\beta = .37^*$). Thus, the implemented flexible office concept influenced collaboration and social interaction in a way that employees collaborated with more colleagues overall (see Table 1).

Table 1: Linear Regression Analyses (t1 on t2): Collaboration within the team and collaboration with others

	B	SE	β	t	p
Collaboration within team	.31	.30	.18	1.05	.302
Collaboration with others	.46	.18	.37	2.35	.025

However, we also found negative side-effects. Analyzing interview data, employees stated that they experienced more social interaction, but at the same time they perceived this interaction as more superficial.

Therefore, not only the frequency, but also the quality of social interactions might change. In this case of the implementation of a new office concept at least shortly after the implementation the frequency of social interaction increased, but the quality of social interaction (which may be even more important) seemed to decrease.

4. Study 3: Social support in Coworking Spaces

Coworking Spaces are work environments for professionals to work in, which are flexible and provide possibilities for social interaction (Pohler, 2012). They are predominantly used by self-employed and freelancers in the digital media community. We

provide parts of the results of a study investigating the role of job resources in Coworking Spaces within the present paper (see Gerdenitsch, Andorfer, Scheel, & Korunka, 2014). Again we focus on social interaction as an important job resource.

4.1 Methods

154 coworkers working in Coworking spaces across Europe completed an online survey (102 male coworkers). Mean age was 34.86 years ($SD = 8.45$), and most of the participants (79 %) had a university degree. The survey consisted of 34 items with general questions about perceptions of the work in the Coworking Spaces and short scales measuring time pressure, job control, social support, work engagement and satisfaction with the quality of work.

4.2 Results

The main reason to work in a Coworking Space was social interaction (for 83%). Other reasons were productivity (for 68%), networking (for 67%), the provision of infrastructure (for 66%,) and flexibility (for 63%). The main reason – social interaction – was focused on and regression analyses were calculated, in order to investigate the moderating effect of time pressure on the relationship between social support and self-efficacy. A significant interaction between time pressure and coworkers' social support on self-efficacy was found (see Figure 1).

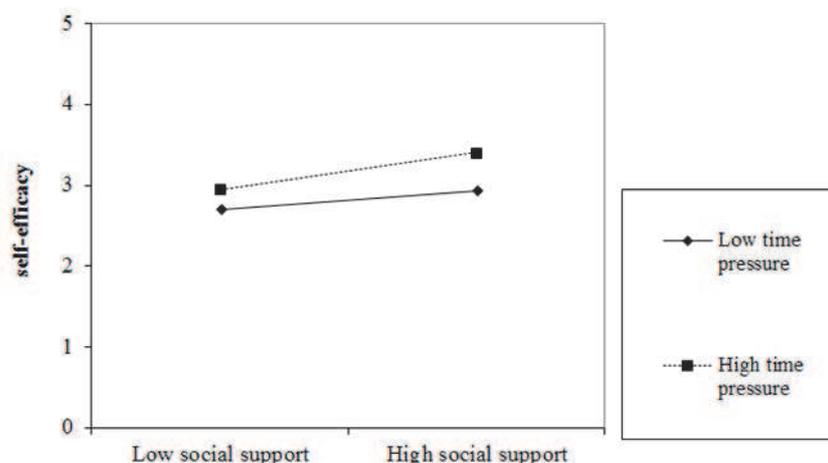


Figure 1: Time pressure moderates the relation between social support on self-efficacy

The study confirmed the positive effect of social support by coworkers on self-efficacy. Coworker's self-efficacy increases in situations with high social support, and is even higher when there is high time pressure. Thus, the social aspect in Coworking Spaces is a central aspect for coworkers health.

5. Discussion and Conclusion

“New Ways of Working” environments, as defined by Baarne et al. (2010), consist of three interrelated elements: Increased use of media technologies, and temporal and spatial flexibility. In three empirical studies in different NWW environments the role of

autonomy and social interaction as important job resources in NWW environments was analyzed. It was proposed that NWW altered the importance and meaning of these job resources at least to some degree.

The analyses of the qualitative interviews (study 1) clearly showed that NWW potentially fulfill the basic need of autonomy (Ryan & Deci, 2000). Temporal and spatial flexibilities provide employees with the opportunities to design their work along their psychological needs. On the other hand, employees experience external control in these technically autonomous work environments. They experience a demand for being permanently accessible and a pressure to work more due to this flexibility. To avoid this potentially negative side effect, we suggest defining clear rules for media technology usage and also clearly defining how employees' output control will be managed. For instance, NWW require an adaptive leadership style, which has to be developed in collaboration between the employer and employee.

Besides the potentially wide range of changes and effects with regard to job autonomy, NWW environments change, enable, or facilitate social interaction. Results of the evaluation study about the implementation of a flexible office concept show that employees increasingly collaborate and communicate with other colleagues from other teams. However, employees experience that social interactions might become somewhat superficial. On the other hand, people working in Coworking Spaces experience an intensity (and even a quality) of social support, they would not have experienced in their usual (in most cases home office) working environment.

We have shown that NWW environments foster job resources like autonomy and social interaction, but they also incur side effects that might be negative for the quality of working life. Thus, we suggest that such side effects should be taken into account when designing NWW environments. Further, in the macroergonomic design of NWW environments experts should also account for individual preferences that cannot be considered by taking only the cohort into account. In conclusion, NWW environments comprise various forms of work designs that are positively and negatively related to the quality of working life.

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