Work organization and work psychology theories in the context of Work from Home – A literature-based overview

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Arbeitspapiere zur immobilienwirtschaftlichen Forschung und Praxis, Band Nr. 42, September 2021

Zitierempfehlung:

Yassien Bachtal (2021): Work organization and work psychology theories in the context of Work from Home – A literature-based overview. In: Andreas Pfnür (Hrsg.), Arbeitspapiere zur immobilienwirtschaftlichen Forschung und Praxis, Band Nr. 42, Technische Universität Darmstadt.

Forschungscenter Betriebliche Immobilienwirtschaft

Impressum (v.i.S.d.P.):

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ISSN Nr. 1862-2291

September 2021

Abstract

"Work from Home" is not a new phenomenon and has been discussed in the relevant literature in recent years. Nowadays, Work from Home arouses a special interest not only for researchers but also for organizations and society as a whole. Various research disciplines have investigated the effects of socio-demographic, psychographic, organizational, and real estate factors on work success such as job satisfaction and productivity. Mostly, these success variables were investigated separately. Such one-dimensional approaches distort the reality; hence, a multi-dimensional approach is necessary. This paper reflects selected work organization and work psychology theories and models first. Thereafter, using the Job Demands–Resources model, a holistic model adapted to the specifics of Work from Home is developed. The model sets its focus on the prediction of job satisfaction and productivity regarding Work from Home.

Keywords: Workplace, Work from Home, Job Satisfaction, Productivity, Job Demands–Resources Model, Workplace Theories

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List of Abbreviations

PE fit	Person–Environment fit theory
DCM	Demand–Control Model
ERIM	Effort–Reward Imbalance Model
COR	Conservation of resources theory
JDR	Job Demands–Resources model

1 Introduction

Working in places outside the office and especially from home has been a topic of discussion in the relevant literature for years. It is estimated that as early as 1995, around 50 % of employees could work at home through innovative information and communication technologies (Olson & Primps, 1984). In fact, only round about 15 % of the employees in the U.S. worked at least partially from home in recent years (Brynjolfsson et al., 2020). Latest studies in Germany indicate a proportion of 25 % of employees that have worked at home in recent years (Pfnür et al., 2021). In this regard, the emergence of the Covid-19 pandemic can be seen as catalyst for increased use of Work from Home worldwide. The percentage of employees working from home has increased many times over, not least due to infection control, and in the future, regardless of the current situation, Work from Home will have a higher profile alongside organizations (Bloom, 2020; Brynjolfsson et al., 2020; Pfnür et al., 2021).

Both past and present, Work from Home receives a great deal of attention from academics as well as practitioners due to its far-reaching implications for individuals, organizations, and society. In the literature, increases in job satisfaction and productivity are often classified as benefits of Work from Home (Fonner & Roloff, 2010; Harker Martin & MacDonnell, 2012; Bloom et al., 2013). Various research disciplines each separately identify different factors that influence job satisfaction and productivity when working from home. Specifically, socio-demographic, psychographic, and work-related factors and their impact on work success, such as job satisfaction and job productivity, were examined in detail. However, real estate factors were also subject of different investigations but in comparison they were less detailed. A separate and thus one-dimensional consideration of factors can lead to a distortion of their collective effects. Pfnür et al. (2021) described that only a holistic view of the various influencing factors can give an impression of the success factors when working from home. Consequently, a holistic conceptualization is required. This paper addresses this gap by pursuing the goal of developing a holistic model adapted to Work from Home.

For that purpose, various work organization and work psychology theories and models were examined. In particular, their conceptual design, measurement techniques, and advantages and disadvantages are the subject of this review. Following the literature review, a conceptualized model adapted to Work from Home is presented.

2 Work organization and work psychology theories and models

This section deals with the theoretical processing of work organization and work psychology theories and models. Selected theories and models are discussed in chronological order: Person–Environment fit (1974), Demand–Control Model (1979), Effort–Reward Imbalance Model (1996), Conservation of Resources theory (2001), and the Job Demands–Resources Model (2001). Specifically, the different possibilities of conceptualization, measurement techniques, and advantages and disadvantages of each theory and model will be argued.

2.1 Person–Environment fit (PE fit)

An elementary concept within organizational behavior research is the Person–Environment fit theory (PE fit), which aims to describe the emergence of stress (French et al., 1974; French et al., 1982; Caplan, 1987; Muchinsky & Monahan, 1987). Kristof-Brown et al. (2005, p. 281) defined PE fit as "the compatibility between an individual and an environment that occurs when their characteristics are well matched." Stress arises due to a mismatch of the person on the one side and the environment on the other side (Edwards et al., 1998). Consequently, this means that only the interaction of a person and an environment and not both dimensions separately contribute to the development of stress. This concept was also used in the past to predict other work-related characteristics such as job satisfaction (Edwards, 2008).

In the context of PE fit, various distinctions must be made and conceptualized accordingly (Edwards et al., 1998). First, the dimensions of person and environment must be clearly delineated. Due to the broad definition of PE fit, several types of fit exist. Kristof-Brown et al. (2005) carried out a meta-analysis in which they elaborated mainly four types of fit: Person–Job fit, Person–Organization fit, Person–Group fit, and Person–Supervisor fit. A focus of the literature is set on the Person–Job fit. On this occasion, the needs–supplies fit and the demands–abilities fit can be distinguished (French et al., 1974; French et al., 1982). Another important distinction must be made regarding the actual fit. In more detail, this involves the conceptualization and the measurement of the fit. In the course of conceptualization, the complementary and the supplementary fit were established (Muchinsky & Monahan, 1987; Kristof-Brown et al., 2005). Complementary fit occurs when the characteristics of an individual compensate for the weaknesses or needs of the environment (Muchinsky & Monahan, 1987; Kristof-Brown et al., 2005). On the other hand, supplementary fit depicts the similarity between an individual and the environment.

In addition, the measurement of fit plays a decisive role. Initially, a differentiation must be made between direct and indirect measurement. While direct measurement assesses compatibility (i.e., the actual fit), indirect measurement assesses variables related to the person and the environment separately (French et al., 1974). Furthermore, differentiation between subjective and objective measurement is also important (Caplan, 1987). Whereas subjective measurements contain the perception of the individual, objective measurement assesses the fit independently from the perception of the individual.

In spite of the elementarity of PE fit, the one-dimensionality of the concept is often criticized. In fact, Caplan (1987, p. 250) argued that "focusing only on one type of fit or the other can leave out important elements of the exchange process." Moreover, the concept should be viewed in a multidimensional context.

2.2 Demand–Control Model (DCM)

The Demand–Control Model (DCM) is a well-known stress-management model and was developed to predict job strain of employees in a work environment (Karasek, 1979, 1998). For that purpose, the factors influencing job strain were bundled into two dimensions: job demands and job control/decision latitude (Karasek, 1979). "Job demands" is a broad and interpretable term. Most commonly, regarding DCM, job demands are measured by the workload or by the task pressure (Karasek, 1979, 1998; Verhofstadt et al., 2017). On the other hand, job control or decision latitude is a narrow concept. Karasek (1979, pp. 289–290) described job decision latitude as "the working individual's potential control over his tasks and his conduct during the working day." Thus, job control is primarily measured by autonomy (Verhofstadt et al., 2017; Perry et al., 2018). More detailed is the measurement of job control through the simultaneous consideration of time control and method control (Parker & Sprigg, 1999). Examples for the measurement of job strain are mental health impairment (Karasek, 1979), anxiety–contentment (Parker & Sprigg, 1999), or the level of job dissatisfaction (Verhofstadt et al., 2017).

The emergence process of job strain is visualized in Figure 1.

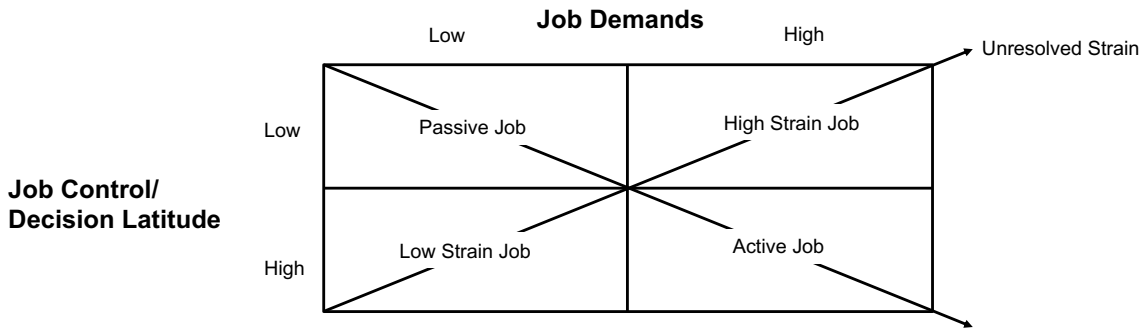

Figure 1: Job strain model (Karasek, 1979)

Job strain is the result of a combination of high job demands and low job control. Consequently, employees who have a certain degree of job control and can additionally decide how to meet their job demands are less likely to face job strain.

Although the DCM has made an important contribution to the scientific development of organizational and psychological theories of work, it is not entirely free from criticism. Even though one aim of a model is to simplify the reality, the simplicity and, thus, the distortion of reality is criticized (Bakker & Demerouti, 2007). It is mentioned that the DCM is limited to only a few independent variables and, therefore, is not applicable to the variety of jobs. Hence, it is not a sustainable but rather a relatively static model.

2.3 Effort–Reward Imbalance Model (ERIM)

An alternative to determine job strain is depicted by the Effort–Reward Imbalance Model (ERIM) (Siegrist, 1996). Whereas job demands and job control or decision latitude are the predictive dimensions with regard to the DCM, effort and reward are the predictors of job strain according to the ERIM. The focus of this model is therefore on reciprocity of effort that a certain form of work requires and the rewards generated by that work (Siegrist, 1996, 2002); it follows that a disturbance of the equilibrium between effort and reward leads to a high level of job strain. “Effort” can be distinguished into extrinsic and intrinsic effort: extrinsic effort includes demands and obligations of the respective job while intrinsic effort is the employee’s motivation to meet the extrinsic effort (Siegrist, 1996, 2002). Reward, in contrast, can be measured as money, esteem, status control, promotion, and job security (Siegrist, 1996, 2002; Siegrist & Li, 2017). This reciprocity of effort and reward is described as the structural component of the model.

Besides this structural component of the model, there exists a personal component as well. This is a major difference when compared to the DCM. Siegrist (2002, p. 266) stated that “a high level of personal commitment (overcommitment) acts as an intrinsic trigger of non-

reciprocal exchange through the work role." This means that the degree of commitment of an employee can additionally upset the equilibrium or the reciprocity between effort and reward. In other words, the degree of commitment can moderate the ERIM. Consequently, personal commitment has an impact on job strain.

Although the ERIM sets its focus differently than the DCM and the inclusion of personal components can be seen as a theoretical development, the critique on both models is almost the same. Again, the main critique is that the ERIM is rarely applicable to a wide variety of jobs and is, therefore, a static model (Bakker & Demerouti, 2007). In addition, the restriction and limitation to a set of independent variables is criticized.

2.4 Conservation of Resources theory (COR)

The Conservation of Resources theory (COR) is a resource-based theory and describes originally the processes of stress development and the emergence of motivation (Hobfoll, 1989, 2001; Hobfoll et al., 2018). It is one of the most cited theories in the literature of organizational behavior and organizational psychology.

Hobfoll's (1989, p. 513) tenet is that all COR processes are related to resources: "People strive to retain, protect, and build valued resources and that what is threatening to them is the potential or actual loss of these valued resources." Therefore, a profound understanding of the term "resources" is necessary. Resources can be differentiated into objects, personal characteristics, conditions, and energies (Hobfoll, 1989, 2001). While object resources have a material–physical focus (e.g., a house that suits their needs), personal resources set their focal point on skills and personal characteristics (e.g., sense of optimism) (Hobfoll, 2001). "Conditions", for example, emphasizes marital status or age and energies are related to time, money, and knowledge (Hobfoll, 1989). Based on the central concept of resources in COR, the origin of stress and/or motivation can be derived. The initiator of stress can be drastic events or daily stressors. Thereafter, stress can occur on three different paths:

1. when an individual's resources are threatened with loss,
2. when an individual's resources are actually lost, or
3. when an individual fails to gain resources following significant resource investment (Hobfoll, 1989, 2001).

The process of stress development is visualized in Figure 2.

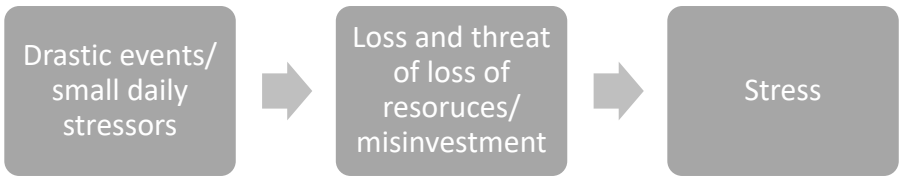

Figure 2: Mechanism of action for the development of stress in COR (Hobfoll, 1989, 2001)

On the other hand, a motivational process occurs when individuals try to obtain, retain, foster, and protect their resources (Westman et al., 2004; Halbesleben et al., 2014).

From the described tenet of COR, two main principles and four corollaries can be deduced. The first principle is called *The Primacy of Resource Loss*. It illustrates that resource losses outweigh resource gains (Hobfoll, 2001; Hobfoll et al., 2018). With an equal number of losses and gains, losses would prevail over gains. The second principle is called *Resource Investment*. In order to protect against resource loss, recover from loss, and gain resources, people have to invest resources (Hobfoll, 2001; Hobfoll et al., 2018). On this occasion, it is advantageous for people to collect a certain number of resources to invest them at a later date. Closely related to the second principle is the *first corollary*. It describes that people with a high number of resources are less vulnerable to resource loss and more capable of reaching resource gains and vice versa (Hobfoll, 2001; Hobfoll et al., 2018). This initially leads to the second and third corollaries. The *second corollary* depicts a loss spiral, indicating that initial losses will lead to future losses and the *third corollary* describes a gain spiral, indicating that initial gains will lead to future gains (Hobfoll, 2001; Hobfoll et al., 2018). This also means that all people can be assigned as having either a high or low number of resources over time, thus revealing a resource schism. The *fourth corollary* suggests that people who lack resources are likely to adopt a defensive mode in order to conserve and protect their resources (Hobfoll, 2001; Hobfoll et al., 2018).

Some criticism also exists within the framework of COR. It is specifically criticized that resources can be classified as limitless, making the theory too generic (Hobfoll, 2001).

2.5 Job Demands–Resources Model (JDR)

A possible solution to the critiques of the DCM and the ERIM is the Job Demands–Resources Model JDR (Demerouti et al., 2001; Bakker & Demerouti, 2007). In addition, the JDR is based on the main implications of COR theory. Initially, the JDR was designed to understand burnout but was later supplemented with the process of work engagement.

Importantly, compared with the previously discussed models, the JDR is applicable to a wide variety of jobs (Bakker & Demerouti, 2007). The justification for this is that despite the specific job-related factors in each case, these factors can be distinguished into two general categories: job demands and job resources (Demerouti et al., 2001; Bakker et al., 2003; Bakker & Demerouti, 2007). According to Demerouti et al. (2001, p. 501) job demands are "those physical, psychological, social or organizational aspects of the job that require sustained physical and/or psychological effort or skills and are therefore associated with certain physiological and/or psychological costs." Examples for job demands are workload (Xanthopoulou et al., 2007; Schaufeli, 2017) or an unfavorable physical environment (Bakker & Demerouti, 2007). In contrast, job resources according to Demerouti et al. (2001, p. 501) are "those physical, psychological, social or organizational aspects of the job that are either functional in achieving work goals, or reduce job demands and the associated physiological and psychological costs or stimulate personal growth, learning and development." Examples for job resources are autonomy or task/skill variety (Bakker & Demerouti, 2007).

The JDR describes two different processes as diagrammed in Figure 3.

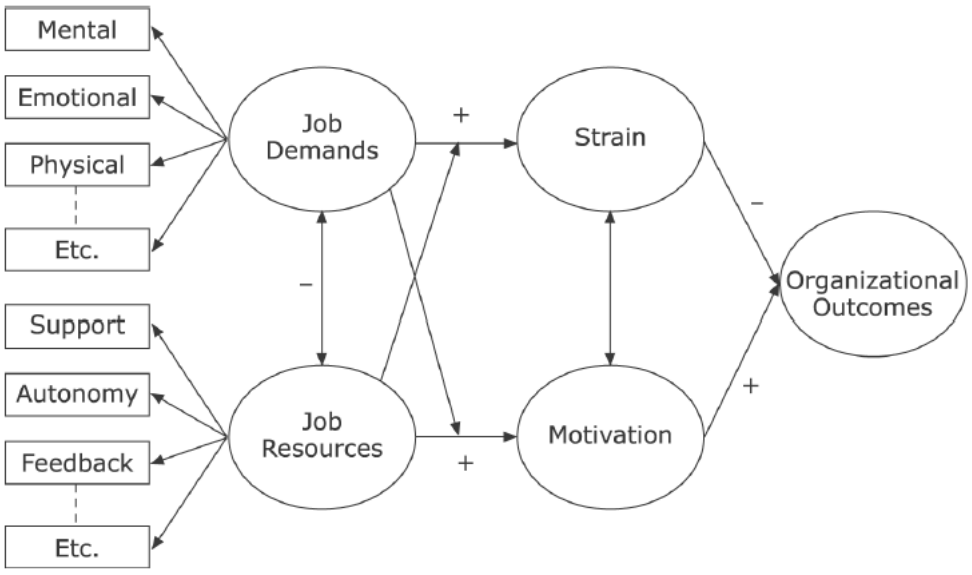

Figure 3: Job Demands–Resources model (Demerouti et al., 2001; Bakker & Demerouti, 2007)

The first process explains the development of strain and is often called the "health impairment process" (Demerouti et al., 2001; Bakker & Demerouti, 2007; Lesener et al., 2019). A high level of job demands leads to strain, which in turn can negatively impact organizational outcomes. Conversely, a high number of job resources leads to an increase in motivation and, thus, to improved organizational outcomes. The second process can be labeled as a motivational process (Demerouti et al., 2001; Bakker & Demerouti, 2007; Lesener et al., 2019). In addition, an interaction between job demands and job resources is postulated (Bakker & Demerouti, 2007), meaning that job resources can buffer job demands or job demands can reduce job resources directly, thereby impacting on both of these processes. Moreover, an indirect effect is possible as job resources can moderate the health impairment process and job demands can moderate the motivational process.

Despite the high scientific relevance and impact of the JDR, it is not free from criticism. A main critique is that the conceptual distinction between job demands and job resources is not always obvious (Schaufeli & Taris, 2014). Furthermore, the breadth of the model as well as its one-dimensional causality is criticized. Various studies confirmed the reciprocity of the JDR (Llorens et al., 2007; Schaufeli & Taris, 2014), meaning that an increase in motivation due to the existence of job resources can lead to the development of new job resources. In contrast, strain as a result of job demands can lead to further job demands.

3 Adaptation of the Job Demands–Resources model to Work from Home settings

Many of the theories and models described above have been criticized for covering only certain categories of jobs and not the full possible breadth of jobs. Although working from home itself is only possible for certain categories of jobs and work activities (Dingel & Neiman, 2020; Pfnür et al., 2021), these jobs differ greatly from each other regarding their demands and resources. For this reason, the JDR model was basically adapted to Work from Home settings and in more detail to Work from Home success. The adapted model is visualized in Figure 4.

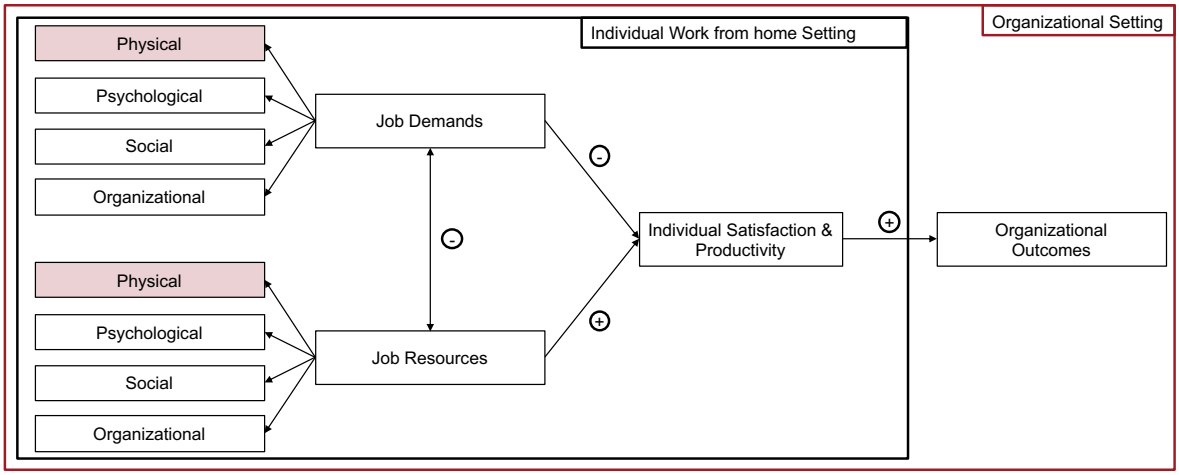

Figure 4: Adapted JDR model to Work from Home (in accordance with Demerouti et al., 2001)

In a dynamic organizational environment, it is important to adapt to changes and to identify and exploit success potentials while minimizing organizational risks in order to maintain competitiveness. Hence, organizations strive to maximize their outcomes. For that purpose, employees are the most important resources of an organization. The assumption here is a cumulative relationship that assumes an increase in the work success of individual employees leads to improved organizational outcomes. These aspects are described by the organizational setting diagrammed in Figure 4.

Each job within an organization has its own specific success and risk factors, which can be classified into job demands and job resources (Demerouti et al., 2001; Bakker & Demerouti, 2007). In addition, work spaces provided by organizations have an impact on employees' individual work performance. While employees basically find similar real estate conditions in the office, these real estate conditions differ considerably when working from home (Pfnür et al., 2021). In other words, employees especially have individual real estate conditions at home; consequently, a special focus is set on the physical component regarding the adaption of the JDR model. The differentiation in physical, psychological, social, and organizational job demands and job resources and the definition of job

demands and job resources (Demerouti et al., 2001) can be maintained. Pfnür et al. (2021) described a multidimensional concept in which Work from Home success depends on the employee's real estate conditions, psychological conditions, socio-demographic conditions, and work-related conditions. For example, a well-arranged workplace or the suitability of the work place at home is connected with productivity advantages and, thus, can be considered as a physical job resource (Bailey & Kurland, 2002; Nakrošienė et al., 2019; Pfnür et al., 2021). Contrary to this, empirical evidence exists that telework or respectively working from home may lead to different types of isolation (Baruch & Nicholson, 1997; Cooper & Kurland, 2002; Bartel et al., 2012; Bentley et al., 2016), which in turn can result in a loss of productivity (Golden et al., 2008). Therefore, isolation can be classified as a psychological job demand. Further examples for organizational job resources are job autonomy and task/skill variety (Hackman & Oldham, 1975). Job resources may have a buffering effect on job demands or an increase in job demands can lead to a reduction of job resources.

The literature shows that job satisfaction and productivity are factors of work success that can be increased by working from home (Bailey & Kurland, 2002; Bloom et al., 2013; Pfnür et al., 2021). Thereby, job demands influence individual job satisfaction and productivity negatively while job resources have a positive impact on job satisfactions and productivity. The individual conditions when working from home and their impact on job satisfaction and productivity of the respective employees have aggregated a high influence on organizational outcomes. Last but not least, the future viability of Work from Home depends on this aggregate impact on organizational outcomes.

4 Conclusion & Forecast

A wealth of work organization and work psychology theories and models exist. Due to the special features of Work from Home, and especially due to the respective individuality of Work from Home, it is necessary to develop an adapted model that focuses on work success when working from home. In the course of this, an adaptation of the JDR was made. The model describes physical, psychological, social, and organizational job demands and job resources on the one hand and work success variables regarding Work from Home on the other. In this context, demands have a negative effect and resources a positive effect on the work success variables.

The adapted model should be tested in a next step. The focus here is on identifying and quantifying demands and resources that are critical to individual work success when working from home. Subsequently, these individual success variables in Work from Home could be aggregated and their impact on organizational outcomes determined.

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