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### Links between telecommuting, social support and mental well-being among teleworkers : a literature review

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# LINKS BETWEEN TELECOMMUTING, SOCIAL SUPPORT AND MENTAL WELL-BEING AMONG TELEWORKERS - A LITERATURE REVIEW

*FRANK W. HAGER*

## **Abstract:**

Importance of the topic: Through limited communication possibilities, social support can be provided via structural distance only in a limited way. But exactly social support is a buffer to reduce work-related stress and diseases. The issue of workplace health promotion has so far received little attention in teleworking. The issue of workplace health promotion has so far received little attention in teleworking, which is incomprehensible, because healthy employees are the basis of an agile and competitive company.

Aim of the study: The objective of this study is to identify and synthesize what is known about telecommuting, social-support and mental well-being of employees, and how these constructs are linked. Therefore the respective understandings of social-support and of healthy work behind the background of telework has to be elaborated, to develop the underlying interpretations of subjectivity, in order to propose a perspective for empirical investigations of health-oriented (tele-)working conditions.

Methods: The study was carried out as a literature review, consisting information found in general and relevant science literature as well as scientific publications researched in common journal-databases. To gain a better understanding of how the constructs are linked, a conceptual model and testable hypotheses are provided.

Findings: Proactive work-support, good workplace-relationships, but also support from non-work contexts are closely related to teleworkers' mental well-being. The question, as to why some employees in the field of telework are mentally stable and can cope with perceived, unfavorable working conditions or lower social support and others fail, can be answered by individual's Sense of Coherence (SoC), a health-related resource and their ability to use available General Resistance Ressources (GRR).

## **Keywords:**

telework, social support, job strain, stress, well-being, job design, communication, telecommuting

**JEL Classification:** M14, M50, Z13

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## 1 INTRODUCTION

Mobile communication in the field of teleworking ensures better availability of employees in their home office – even outside normal working hours. This leads to a significant increase in customer satisfaction with a positive sales relevance and a higher competitiveness of the companies. Calls are no longer lost, customers know that they are in good hands and are confirmed in their decision for the company. Good communication is often crucial for choosing a cooperation partner. However, these positive aspects also have disadvantages. With regard to a mobile cooperation, managers and teleworkers have to adapt their communication from direct personal contact (face-to-face communication) to the conditions of interaction at a structural distance (telecommuting). Telecommuting requires one or more communication media, such as e-mail, smart-phones, video conferencing-, chat- and messaging systems or internal social media platforms, to ensure the contact and the exchange of information between the actors. It is obvious, that communication processes are becoming more complex due to the increasing number and forms of communication media. This clearly shows that modern media is changing the way of how organizational members communicate - with dramatic consequences for the quality of our contacts and relationships. The exchange via face-to-face communication can be seen as critical and indispensable in this way. To a certain extent, employees have to be able to see each other in person, formally and informally, planned and unplanned, even though they use electronic media to send and receive electronic messages and/or instructions. It is not just about talking, but also about the perception of body language and social awareness, a feeling of togetherness at work, a constant, casual feeling of the person and the activity of others. Social interaction furthermore includes support from colleagues and executives, which is obviously an elementary condition of human work design. Thus, for teleworkers, the work situation, the quality of communication and the perceived social support is changing massively and the question arises whether this form of work affects teleworkers' mental well-being. Healthy, motivated and efficient employees are, however, the decisive factors with regard to the success and competitiveness of a company. In this context, the topic of mental health is becoming increasingly important in the context of telework.

Thus, it is understandable that telework raises the question, of how the terms telecommuting, social support and well-being are linked, to eliminate potential mental complaints among employees who work in home offices. The analysis of different research papers offers the chance to show blind spots, to contribute to a sharpening of these linkages for identifying and providing testable hypotheses.

In a first step, the differences between telecommuting and face-to-face-communication are worked out, to illustrate, that a decentralization of office-work is accompanied by a change in existing organizational structures and communication patterns. The realization of telework inevitably leads to a reduction in spontaneous face-to-face communication. In the further course of this work, the links between telecommuting, social support and well-being will be discussed. Within the framework of this paper, the term well-being refers mainly to the mental strains of teleworkers, which they experience due to limited communication possibilities, social isolation and lack of social support. Furthermore, negative and positive aspects of telecommuting are discussed in work and non-work contexts. It is shown that previous research work paradoxically cite advantages and disadvantages of telework.

So far, there are only researches dealing with the question of whether telework affects mental health or not. The question of why some teleworkers have mental health problems, but others in a similar, or the same position stay healthy, remains unanswered. The "why" will be answered in this work by linking Antonovsky's Sense of Coherence (SoC) and mental well-

being. Antonovsky's theory describes SoC as a particular "emotional quality" (Ducki, 2000) that is considered as an indicator of mental health. Antonovsky (1979:8) is speaking of the "way of looking at the world," a general attitude towards the world and life of individuals, which is characterized by a high degree of reflexivity regarding one's own feelings and needs.

## **2 METHODOLOGY**

This paper aims to provide clarity by identifying, analyzing and discussing the main linkages between telecommuting, social support and mental well-being of teleworkers found in general and relevant science literature as well as scientific publications in common databases. Papers and research materials published in the databases of Taylor & Francis, SAGE Publications, Wiley, APA, Elsevier, Emerald, Guilford, Informa, Oxford University Press and SAJIP made part of the basis of the scientific analysis of the problem. In addition, an internet search on google-scholar was undertaken to identify relevant studies and relevant literature. In this way also German articles in scientific journals, anthologies as well as books were found. In some cases, it was necessary to contact authors on researchgate.net to get full access or to request papers. Of the 154 identified scientific papers, 108 were screened as relevant to the review and had been included in the work. Various German and English terms from the categories "(mental) well-being" (e.g. mental health, physical health, depression, burn out, employee health, etc.), "telecommuting" (e.g. distance communication, electronic mediated communication, computer mediated communication, remote work, telework, etc.) and "social support" (e.g. emotional support, informational support, social help, social resources, social assistance, etc.) were combined and searched for. In addition, a manual search of references found in the articles was made.

## **3 COMPARING TELECOMMUTING AND FACE-TO-FACE-COMMUNICATION**

The idea behind this study is the basic thought that a substitution of direct, personal communication by means of a digital or verbal goal- and purpose-oriented exchange via data processing systems, e-mail or short telephone conversations leads to the restriction of important qualities of human communication. This interpretation can be explained based on the 2nd Axiom of Watzlawick et al. (1967). Accordingly, each message contains information, whose content seems at the first sight rather uninteresting, because the nonverbal portion of the message provides the actual indication, of how the sender wishes to be understood by the recipient. In this respect, communication proceeds, according to Watzlawick et al. (1990), on a factual level and subliminally on a relationship level. The topic and content is communicated on the factual level; however, communication on the relationship level is more complex. The relationship aspect indicates how the transmitted data on the factual level is to be understood and represents a meta-communication - a higher-level communication. Furthermore, the thesis of Watzlawick et al. (1990), states, that the relationship level has a stronger influence on communication than the factual level. Thus, the relationship level also has a great impact on the factual portion of the message, while conversely the influence has a lesser extent (Reich, 2000). Speaking of a functional communication, it must succeed on both levels (Fulk & Cummings, 1984). In the case of telecommuting, which is mainly carried out via new media, and is not or only rarely characterized by face-to-face contacts, the relationship aspects are largely hidden. A contextless and abstract process thinking increasingly dominates communication, in

this case, which does not additionally happen as a meta-communication, by exchanging information solely.

This fact is reflected in numerous studies that explored, among other things, the impact of telecommuting on personal identity, group dynamics, social influence or group decision making processes, and status (Lowry, et al. 2006; Spears et al., 2001). Picot et al. (1996) note that electronic media, does not completely replace direct, personal communication (face-2-face), since complex problems in particular require a kind of holistic communication. Niggl et al. (2000) also refer to the relationship aspect, which is elementary in complex communication. It will maintain a common basis of values and trust between the communication partners. This is achieved at best via face-2-face contacts, because in this way the information-richness is highest.

It can thus be stated that telecommuting has a negative effect on the relationship between sender and receiver (Te'eni, 2001; Watzlawick et al.; 1967; Haley, 1963). From this point of view, the first hypothesis can be deduced.

*H1(-): Telecommuting is negatively related to the work-relationship between teleworkers and company-based workers or superiors.*

#### **4 LINKING TELECOMMUTING, SOCIAL SUPPORT & WELL-BEING**

In order to illustrate the background of the links between telecommuting, social support and mental well-being of teleworkers in more detail, the Job-Demand-Control Model (Karasek, 1979; Karasek & Theorell 1990) should be discussed initially. The JDC model, also known as Job-Strain-Model in pertinent literature, assumes that a combination of high work demands and limited decision-making possibilities causes psychological and physical stress, as well as dissatisfaction in work-contexts. "[...] psychological strain results not from a single aspect of work environment, but from the joint effects of the demands of a work situation and the range of decision-making freedom available to the worker facing those demands" (Karasek 1979: 285). In the opposite case, work demands and - at the same time - a large scope for decision-making support well-being, learning and personal development of employees (De Rijk et al., 1998, Karasek & Theorell, 1990). According to this model, Job Demands refer to the workload, time pressure and role conflicts - Job Control or Decision Latitude refer to the scope for decision making in work contexts. The work control can be subdivided into skill discretion and decision authority. Johnson (1986) criticized the fact that psychosocial factors – which were to some degree part of the Job Demands, would receive too little attention in the Karaseks model. The model was therefore further developed into the Job-Demand-Con-trol-Support Model (JDC-S) by Johnson and Hall (1988) who integrated a social component. Regarding to the JDC-S Model, job demands, job control and social integration at the workplace are crucial aspects in the development of health problems. These basic ideas were also confirmed by Parkes et al. (1994) and Landsbergis (1988).

According to the JDC-S model, the most harmful working conditions are those, where high work demands, low control and low support or even isolation (iso-strain) prevail. This approach assumes that social support reduces the negative impact of high job-stress (Johnson and Hall, 1988). There is a broad consensus, that Karaseks JDC Model can predict a range of effects such as disease symptoms and behavioral correlates that result from psychosocial working conditions (Theorell, 2000).

On the one hand, telework, as a decentralized form of work - away from the headquarter - offer employees the highest level of freedom and autonomy – so telework might reduce job strain

at the first glance. On the other hand, other characteristics of this work-setting possibly will increase strain at work. Several researches have documented the threats of demands and controls in telework settings. For example in the form of work-family-conflicts (Golden et al., 2006; Felstead & Jewson, 2000), work-overload, extra-time and effects on health (Paolli and Merllié, 2001; Montreuil & Lippel, 2003), as well as the limited ability to communicate with colleagues and supervisors (social isolation) (Bailey & Kurland 2002). Especially the last aspect and its effects on mental well-being deserve more detailed consideration in the context of telework.

In a socially isolated work situation personal needs cannot satisfactorily met compared to company-based work. Internal communication serves not only the work-related exchange of information, but also the maintenance of interpersonal relationships and the exchange of personal thoughts. Hence, telework can result in a lack of involvement of teleworkers in organizational culture. (Thomas, 2005:33) describes organizational culture as an "orientation system, that reflects symbols, language, rituals or habits of the collective on the relationship level<sup>1</sup> of communication." In this framework of action, it is possible for employees to find their way around in the collective, for which knowledge about the social environment is needed and the knowledge how to deal with this knowledge. Against this background, social norms or customs are a clear guidance, which directly influence the thinking, action and the perception of the workforce (Strobel & Lehning 2003; Brunelle 2013).

Social working relations can be an important resource for workers to maintain or positively affect well-being, mental health and work-related performance. Holz et al. (2004) define the term "resources" accordingly as "[...] characteristics of the work situation or person, which have a positive effect on the individual and which in many cases make it possible to better deal with strains".<sup>2</sup> Social resources can also fulfill the desire for cooperation, contact and social recognition (Holz et al., 2004).

Social support and autonomy in the workplace are also important issues in telework research. Not only for the reason of their role in coping with strain, but also because they are structurally important for the success of teleworking. The already mentioned social isolation is almost inevitably associated with reduced social support (Winkler, 2001). Social support from superiors and colleagues is probably a decisive moderator in telework for problems arising due to this special environmental work-setting and for job-demand and -control issues. In the context of moderator effects in the framework of social support, many researchers cite the "buffering hypothesis" (Beehr et al., 2003; Sargent & Terry, 2000). In contrast to main-effect models, the buffering-model assumes an interaction between situations of strain and social support on subjective stress-induced impairment (distress) (Häusser, et al. 2010).

As a result, the less social support an individual receives, the closer the statistical relationship between objective strain and subjective impairment becomes. High support, on the other hand, has a protective effect on the relationship between strains and their negative consequences. Hence, the main difference to a main-effect model is the assumption that social support is not generally regarded as a predictor, but as a moderator (moderator variable) of stress effects. However, this buffering effect occurs only in extreme situations with high stress load. If high strains do not occur, the positive moderating effects of support are not verifiable (Osca et al., 2005). There are also research reviews of the main-effect- and buffer-effect model which support the assumption of a major social support effect (Häusser et al. 2010). Therefore, it can be stated, that for teleworkers support from supervisors as well as from their colleagues is

1 See paragraph 4.

2 Citation translated from German.

essential which includes both main- and buffering- effects. Against this background, the following hypotheses can be formulated:

*H0(-): Telecommuting is negatively related to mental well-being.*

*H2(+): Warm workplace-relationships are positive related to teleworkers' mental well-being.*

*H3(+): Work-based social support will increase the mental well-being of teleworkers and is able to buffer stresses caused by job-demands.*

The concept of social support and the positive impact on well-being does not seem to apply only to areas of work, but in general to people and their personal relationships. Albrecht & Adelman (1987:19) define social support as "[...] verbal and nonverbal communication between recipients and providers which reduces uncertainty about the situation, the self, the other, or the relationship to a perception of personal control in one's life experience." Numerous previous studies show that social support has beneficial effects on health (Zhang et al. 2007; Cohen, 2004; Tomaka et al., 2006; Ali et al. 2006; Schmaltz et al. 2007). Harandi et al., (2017) describe social support as a predictor of mental-health. According to Deci & Ryan (1993), humans have the natural tendency, next to the needs for efficacy and autonomy, to adopt the regulation mechanisms of the social world unconsciously in order to be associated with other persons, becoming a member of the social world. Attempting to feel connected with others, determining autonomously at the same time own actions, the person takes over and integrates goals and behavioral norms into his/her own self-concept. Prerequisites for this process are offers and requirements in an accepted environment, which strengthens the corresponding behavioral tendencies. Changes in membership status can cause emotional reactions. Positive effects are associated with higher - negative effects are associated with reduced affiliation. Furthermore, ongoing high involvement in social relations should lead to generally better - lasting deprivation, on the other hand, to a generally poorer emotional condition. These assumptions are evidenced by various studies which show that happiness, contentment or serenity are associated with the existence of close social relationships, while a lack or loss of social relationships can be associated with feelings of anxiety, loneliness, and social isolation (Yildirim & Kocabiyik, 2010; Leary et al. 2001; Leary & Springer, 2001). The resulting social stress and pressures have a negative impact on human health (Holt-Lunstad et al. 2015). Received social support, on the other hand, strengthens self-esteem, encourages active coping efforts, and can eliminate or mitigate the stressors and strains (Bliese & Britt, 2001). Social support is thus essential to general mental well-being. Based on these findings, it is assumed that social support outside of work contexts can also have a positive effect on well-being of teleworkers. In this regard, further hypotheses can be formulated:

*H4(+): Support in non-work contexts will increase mental well-being of teleworkers.*

Telecommuting underlies most teleworking. Therefore, it is crucial to understand how advantages and disadvantages of this form of work affect social support and well-being in general non-work and work-contexts. The paragraphs 5 & 6 are intended to provide more detailed information.

## **5 TELECOMMUTING IN RESEARCHES OF NON-WORK CONTEXTS**

Outside of work contexts advantages and disadvantages of telecommuting - have been identified.



### 5.1 Negative Aspects of Telecommuting in Non-Work-Contexts

There are research works, which are showing, that telecommuting diminishes the emotional quality of face-to-face communication. It is said, that telecommuting has an impersonal quality, which lead to a dissociation between content and tone of communications between users<sup>3</sup>, which can trigger the feeling of social isolation. The HomeNet study by Kraut et al. (1998) examined the Internet usage of 93 US families from eight neighborhoods. Social involvement was measured through family communication, social networking size, and social support. The results show that internet use was associated with the decline in face-to-face communication within the families. No significant correlations could be found only for the variable social support. The reason for this was explained by Kraut et al. (1998) on the thesis of social displacement: "The time that people devote to using the internet might substitute for time that they had previously spent engaged in social activities". Nie (2001:420) commented on this as follows: "[...] simply because of the inelasticity of time, internet use may actually reduce interpersonal interaction and communication".

Sardeshmukh et al. (2012) postulated that social support information is highly reduced in terms of physical and social presence. As a result of physical isolation, this effect leads to an apparent anonymity and associated increased inner self-attention which has been confirmed by a series of empirical studies (e.g. Lea & Spears 1991 & 1992; Kiesler & Sproull (1992); Sproull & Kiesler (1986) and Walther 1992 & 1995). Although Walther (1996) argues, based on social information processing theory, that computer-mediated communication (telecommuting) has similar potential as face-to-face communication for building relationships, there are also results which show dangers in conflict escalation (Friedman & Curall, 2004). This is explained by Kiesler et al. (1984) on uninhibited behavior through the reduction of social cues or stimuli in computer-mediated communication. De-individuation effects go hand in hand with a weakened behavioral control, reduced fear of negative evaluation through others as well as weakened rational and normative judgment processes. Döring (1999) emphasizes in this context the personal safety due to the lack of visual contact, physical distance and pseudo-anonymity.

### 5.1 Positive Aspects of Telecommuting in Non-Work-Contexts

Hamburger & Ben-Artzi (2000) describe the social exchange via the Internet as beneficial because of the possibilities to interact with communities of interest or to build support-networks. There also have been done researches in the range of relationships over a long distance, which showed that the lack of missing face-to-face interactions does not seem to be the most urgent problem feeling satisfaction in comparison with those partners who are closely connected (Stafford & Merolla, 2007; Roberts & Pistole, 2009).

In addition, studies from the therapeutic context regarding the positive effects of social online support on mental well-being had been identified during this research. Thus, emotional support is effective, especially in individuals with the same disease symptoms. These studies include e.g. symptoms of Parkinson's disease (Lieberman et al., 2005). "In an Internet group, you (the individuals) are much freer to talk about things that you probably wouldn't in a F2F." (Lieberman et al., 2005:246). Regarding food allergies, Coulson & Knibb (2007) argue, that support-groups who are communicating online are helping to counteract social isolation and loneliness, as many patients in those groups find exactly what they otherwise need - like-minded who have an understanding for them. In this way, social support can help to develop new coping-strategies. External appearances of the individual or deficits in social and verbal competence

3 See paragraph 4.

are largely hidden and do not play a major role in this kind of interaction. White & Dorman (2001) describe it as beneficial, that online support-groups can be consulted at any time - regardless of own health statuses or geographical distance. Erwin et al. (2004) define social support, which participants experience in online support-groups, as a major benefit of these communities. Because especially introverted or socially anxious people can cope with loneliness with the help of the internet. In addition, studies outside therapeutic contexts show that social communication via the internet lowers social isolation and loneliness, which ultimately reduces the threats of anxiety and depression (Amichai-Hamburger, 2005).

## **6 TELECOMMUTING IN RESEARCHES OF TELEWORK-CONTEXTS**

Also within the context of telework, advantages and disadvantages of telecommuting have been identified.

### **6.1 Negative Aspects of Telecommuting in Work-Contexts**

For teleworkers, a purely exchange on a factual level during telecommuting can lead to feelings of social isolation, if there are no compensating informal contacts with colleagues. Times for social communication are also required during working hours. Telephone or electronic media could not adequately replace private or informal side conversations during coffee breaks or face-to-face meetings (Brandt 1999). Hinds et al. (2005) emphasize the characteristics of spontaneous communication, which plays an important role in building and maintaining good relationships between team members. Spontaneous communication also helps to establish a strong common identity within the team. Niggl et al. (2000) see a connection between the decline of spontaneous communication and a sense of togetherness. The sense of togetherness is particularly important in informal contacts. Konradt et al., (2000) suggest that regular personal face-to-face interactions are essential to meet telecommuters need for social connections. If social contacts are neglected or not available, this has an impact on the working environment and the informal crisis management in every day work, which is normally able to determine many personal problems in operational cooperation. Emotions are central for functional teamwork. They can benefit stirring interest in informal organizational processes (Derks & Bakker, 2010; Nizielski, 2015:2). The lack of personal links to other people and the lack of information in a social setting also affect, as pointed out by Gallenkamp et al. (2010), building a social relationship and trust. Cooper & Kurland (2002) and Vega & Brennan (2000) describe the perception of social isolation of employees in telework as one of the main problems of this form of labor. Montreuil & Lippel (2003) speak behind this background of a critical disadvantage of telework.

Hinds et al. (2005) compare in-house and distributed teams. They argue that distributed teams are more likely to face task and relationship conflicts than conventional teams working together in the same place. Relationship conflicts arise from differences of opinion between group members about interpersonal issues and are based on dissimilarities in personality or different attitudes regarding their norms and values (De Dreu et al., 2003).

Fay (2011) found that satisfaction with informal communication affects also the satisfaction with relationships with colleagues. A good relationship with colleagues is in turn positively linked to job satisfaction and identification with the organization (Fay et al., 2012). However, identification with the company is also directly related to the frequency of informal communication (Wiesenfeld et al., 2006). Johnson et al. (2009) indicate that a lack of emotional connectedness to teams is one of the negative aspects of working from home.

Aysar et al. (2006) however showed, that job satisfaction is neither associated to the amount of mails sent or received, nor on how the superior-employees communication is primarily done - via face-to-face or electronically mediated. Moreover, communication via e-Mail is not used to compensate the lack of face-to-face contacts. In their research, the amount of sent and received mails between superiors and employees did not differ, independently of geographical locations. In this context O'Kane et al. (2007) postulate that email networks do not diminish the necessity for regular face-to-face conversations. An affective bond and support, as well as emotional involvement, are essential in the field of collaboration, but harder to achieve, if teams or employees are distributed and the communication takes place over a structural distance. In addition, communication at a factual level solely, is an obstacle, in order to express one's own emotions, which can lead into a higher stress level (Mann, 1998; Mann et al., 2000).

## **6.2 Positive Aspects of Telecommuting in work-contexts**

Studies (Bailey and Kurland, 2002; Verbeke et al., 2008; Belanger et al. 2001) have reported productivity, organizational commitment, retention and performance in telework. A review and meta-analysis of 32 correlations from empirical studies confirmed that there is a small but positive relationship between telework and organizational outcomes. "Telework is perceived to increase productivity, secure retention, strengthen organizational commitment, and to improve performance within the organization" (Martin & MacDonnell 2012:602). Gajendran & Harrison (2007) also confirm in a meta-analysis that teleworking generally has no detrimental effect on the quality of relationships in the workplace. O'Kane et al. (2007) argue that the disadvantages of telecommuting were dramatized in former researches.

Metzger et al. (2016) show that the aspects of attractiveness of work and autonomy has a significant positive impact on organizational identification for teleworkers. Especially the determinant autonomy in telework is in most cases given. The research of Andersen et al. (2014) provides results about teleworkers, who are experiencing more job-related positive affective well-being and less job-related negative affective well-being on days when they were teleworking, compared to days they were working in the office. The results of Mann & Holdsworth (2003) reflect that stress experience of teleworkers is lower than that of office-based employees: While 67% of teleworkers surveyed provide information regarding to experiencing stress at work, which applies even more to 83% of employees who work in the company office. The evaluation of several studies by Allen et al. (2015) equally indicate that the extent of teleworking is negatively related to work-related exhaustion. Making strong business stress compatible with private life, e.g. through increased childcare flexibility or reduced travel times to work, likewise significantly reduces the experience of stress of employees who regularly work outside the companies office (Gajendran & Harrison, 2007). Lott (2017) describes that this effect is much more pronounced in women than in men. Since women take on the main responsibilities of the household, they need more time than men to have time off work. Insofar they have greater benefits than men through the flexibilization of working time and telework in general.

In a long-term study, Shepherd-Banigan et al. (2016) studied the impact of telework on depressive symptoms in women with young children. The results show a reduction in the symptoms of being able to work from home. In addition, there are initial indications that working and life satisfaction among teleworkers is highest in comparison to other forms of work (Brenke, 2016). Likewise Morganson et al. (2010) have derived higher job satisfaction among home office workers in a study of different workplace models. In a comparative study of the three types of work home-office, virtual-office and traditional-office in a large IT company, the

home office proves to be predominantly positive - both in terms of work aspects (e.g. job performance or job motivation) and work-life balance as the best workplace model.

Paradoxically, there is also research on social support and buffering-effects in the work context that shows contradictory outcomes. Viswesvaran et al. (1999) found only a weak evidence for mediational and suppressor effects of social support on the process of work stress. In addition, there are studies proving that social support is in a negative relation to mental well-being occurring a so-called "opposite buffering effect" (Higgins & Kruglanski, 2003:400).

## 7 DISCUSSION AND CONCEPTUAL MODEL

As shown in the paper, there is much empirical evidence that telework or telecommuting creates a feeling of lack of social support in non-work and work-context. In connection with neighboring constructs such as social isolation (or the lack of social integration), it can have a disease-promoting effect. Conversely, social resources, in the form of support, which originate from the individual's social network, can act as a psychosocial immune system promoting health. In such networks, forms and benefits of social support are developed and become effective in relationships. Relationships characterized by reciprocity give rise to feelings of belonging, of personal appreciation, security and orientation. Granted or denied, social support can, as noted in the previous paragraphs, directly affect the mental state of individuals – both in a positive or negative sense. In a positive way, it promotes health and helps to overcome disease.

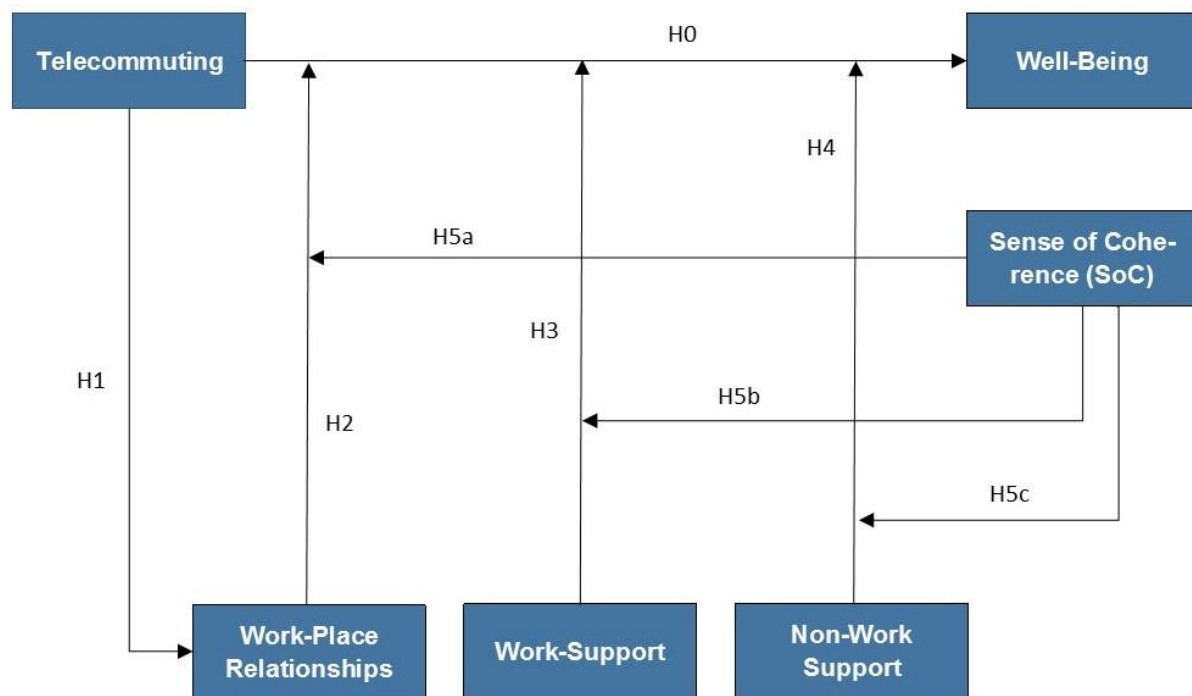
However, many of the researches presented in this work partly show an ambivalent picture, because papers reviewed in the non-work-context as well as in the work-context, does not support the hypotheses, which has been initially developed. The reason for these contradictory results is probably due to the fact that test persons were not looked at individually in terms of their health-preserving resources, but rather as a kind of individuals having "uniform coping strategies". Just because of this change of perspective, the answer to the question comes closer to why some teleworkers can handle adverse circumstances and others fail and get sick. This was also the question that Antonovsky (1979) raised in his concept of Salutogenesis. According to Antonovsky, there is no absolute health and absolute disease. Individuals move throughout their lives on a "health ease-disease continuum", moving back and forth between the extremes (Höfer 2000:69-70, Antonowsky 1997). In order to achieve the most balanced state possible, several factors come into play: One factor is stressors, meaning stimuli that cause stress. For Antonovsky, these include, above all, chronic stressors, physical restrictions, constant over- and under-demands, but also everyday stressors, such as deadline pressure, complexity of everyday life, physical and mental stress and serious changes in the social environment. These stressors create strains, which can be responsible for disease (Antonovsky 1979:81; Höfer 2000:78). The balancing second factor are the Generalized Resistance Resources (GRR). These include on the one hand individual resistance resources, such as physical resources, coping strategies or intelligence. On the other hand, social and cultural resources, such as cultural stability, social support and financial opportunities (Antonovsky 1979; Höfer 2000:82). GRRs can support the effective stress management of the organism, whereby strain can be avoided or better be managed, so that strain is not experienced as stress, but the stressors are given a sense (Hurrelmann 2000:52-60). These two factors are crucial for the movement on the health ease-disease continuum.

Stability gains the movement only by a third factor, the Sense of Coherence (SoC). SoC is "[...] a global orientation that expresses the extent to which one has a pervasive, enduring though

dynamic feeling of confidence that one's internal and external environments are predictable and that there is a high probability that things will work out as well as can reasonably be expected" (Antonovsky, 1979:123). The SoC consists of three components:

First, the *Sense of Comprehensibility*. It includes the ability of individuals to understand their personal environment, to be able to arrange and process incoming stimuli, or to oppose them with the corresponding expectation beforehand. The opposite can be seen as a world that seems arbitrary, unscheduled, chaotic and inexplicable. Antonovsky describes the second component, *Sense of Manageability*, as the conviction of individuals that tasks, recognized as significant and meaningful are solvable. It includes the basic trustfulness and the realistic assessment of accessible resources, in order to cope with the emerging problems and requirements. Through participation, or the opportunity to shape the workday actively, employees have a high degree of manageability and cannot easily be pushed into a victim role (Antonovsky, 1997). According to Antonovsky, it is not just about control and the use of own resources, but also direct access to resources controlled by legitimate others, such as confidants (Antonovsky, 1979). For this reason, this attribute is closely related to concrete coping strategies. The stress avoided or repelled in this way, is the positive result of a developed ability facing difficult situations in a better way (Meckel-Haupt, 2001; Bauer et al., 2015). The third component - *Sense of Meaningfulness* - includes the skills and conviction, or the confidence to solve tasks. It can be interpreted as motivation and willingness to tackle difficulties, or to see a meaning in it. An important aspect of Sense of Meaningfulness is its emotional aspect. Individuals with a strong ability to consider life as meaningful, also see many situations in their everyday life as important and significant. They therefore have the ability to interpret critical circumstances not as stress but as a challenge. A Sense of Meaningfulness is described in the words of Antonovsky as "[...] the extent to which one feels that life makes sense emotionally, that at least some of the problems and demands posed by living are worth investing energy in, are worthy of commitment and engagement, are challenges that are welcome rather than burdens that one would much rather do without" (Antonovsky, 1997:16-19).

Figure 1: Conceptual model for studying the linkages between telecommuting, social support, social non-work support, mental well-being and Sense of Coherence (SoC).



Source: Authors own work.

In the foregoing introduced scientific works, telecommuting should therefore not be seen as problematic as a term. It is assumed that people involved in telecommuting, be it in a work-context or non-work-context, are doing roughly the same thing – they are not interacting in the understanding of a meta-communication.<sup>4</sup> Whether employees in their homeoffices experience loneliness through communication deficits, whether they classify telecommuting as insufficient to complete their tasks effectively, or whether they feel socially isolated, should therefore not be explained on the basis of the work-setting solely. Teleworkers should rather be considered individually by means of their personal General Resistance Resources and their Sense of Coherence.

Antonovsky believed that the SoC has the greatest impact on physical health - this was not confirmed by empirical research (Flensburg-Madsen et al., 2005; Flensburg-Madsen et al., 2006). However, it could be proven that a low SoC has a significant impact on mental health, although Antonovsky considered this unlikely. For example, Griffiths (2009) found that people with a high SoC score could better recover from mental health issues. Albertsen et al. (2001) reported in a large cross-sectional study of more than 2,000 Danish employees, between the ages of 18 and 69 with a variety of occupational backgrounds, that individuals with higher SoC levels experience far less stress symptoms. Van der Colff & Rothman (2009) report that SoC is not only closely related to mental exhaustion, but also to the work results and engagement shown by employees at work. Employees with a high SoC are able to perceive their environment in a positive sense and show a higher work-engagement due to better coping strategies. The study was supplemented by Muller and Rothman (2009). They carried out a content analysis, whose quantitative evaluation of over 600 employees showed, that the perception of support and the feeling of restriction in a familiar work environment, is decisively dependent on the extent of the employee's SoC. Whereas low SoC scores are an inverse

<sup>4</sup> See paragraph 4.

measure of depressiveness (Geyer, 2000), going along with helplessness (Levert et al. 2000) and resignation (Nielsen & Hansson, 1998).

In this respect it could be stated, that the lack of warm work-place relationships, work support and non-work support may be regarded as crucial aspects in the development of health problems. They can be seen as stressors - however, they do not apply equally to all teleworkers, even if they work in a same or similar position or even if they have the same or similar tasks to fulfil.

Therefore hypotheses H5a-c can be stated:

*H5a: Sense of coherence (SOC) moderates the lack of warm work-place relationships as a stressor.*

*H5b: Sense of coherence (SOC) moderates the lack of work-support as a stressor.*

*H5c: Sense of coherence (SOC) moderates the lack of non-work social support as a stressor.*

The introduced conceptual model in Figure 1 should help managers, members of the organizational development or researchers to better understand the negative effects of telecommuting on teleworkers mental well-being. The model incorporates the four discussed variables influencing employee's mental well-being due to telecommuting: [1] Work-support, [2] non-work-support, [3] work-place-relationships and the [4] Sense of Coherence (SoC). The first three variables can be understood as moderators, which influence the mental well-being of teleworkers directly. From the author's point of view, the SoC influences the variables 1-3. Because of this, an adaption of the hypotheses must be made.

### 7.1 Adaption of Hypothesis H2

Relationships with colleagues or work-place relationships in teams/organizations can be considered as an important Generalized Resistance Resource (GRR) (Antonovsky, 1979). It includes the feeling of belonging, of gaining the trust and appreciation of others and of being able to experience oneself through participation in the organizational life. Referencing this resource to the subcomponents Sense of Comprehensibility and Sense of Meaningfulness highlights the importance not only of employee participation and involvement, but also, and above all, the social component of belonging. Warm work-place relationships make the world of labor understandable and meaningful through the positive direct exchange with colleagues. The resource work-place relationships is crucial to build protection against stressors.

In the worst case, teleworkers have a low SoC-score. The absence of warm work-place relationships would have a direct and negative impact on the mental well-being of employees in the home office. If teleworkers have a high degree of Sense of Coherence, the author of this work assumes that this could lead to a form of immunity to the absence of work-place relationships. Due to this view, the hypothesis H2 has to be adapted and 3 further hypotheses have to be added:

*H2(+): Warm workplace-relationships are positively related to mental well-being, if teleworkers' SoC-Score is low.*

*H2(-): A lack of warm workplace-relationships is negatively related to mental well-being, if teleworkers' SoC-Score is low.*

*H2(0)<sub>1</sub>: A lack of warm workplace-relationships has no influence on mental well-being, if teleworkers' SoC-Score is high.*

*H2(0)<sub>2</sub>: Warm workplace-relationships have no influence on mental well-being, if teleworkers' SoC-Score is high.*

## **7.2 Adaption of Hypothesis H3 and H4**

The very feeling that people in stressful situations can rely on and benefit from benevolent and supportive people from their work environment and environment in the non-work context, can contribute as a General Resistance Resource to experiencing a stressor as manageable. Social support creates stable and therefore trustworthy conditions. Against the background of the Sense of Coherence as indirect moderator, the hypothesis H2c+ has to be adapted and 3 more hypotheses have to be added:

*H3(+): Work-based social support is positively related to mental well-being, if teleworkers' SoC-Score is low.*

*H3(-): A lack of work-based social support is negatively related to mental well-being, if teleworkers' SoC-Score is low.*

*H3(0)<sub>1</sub>: A lack of work-based social support has no influence on mental well-being, if teleworkers' SoC-Score is high.*

*H3(0)<sub>2</sub>: Work-based social support has no influence on mental well-being, if teleworkers' SoC-Score is high.*

Also H4+ has to be adapted and 3 further hypotheses have to be added:

*H4(+): Non-work social support is positively related to mental well-being, if teleworkers' SoC-Score is low.*

*H4(-): A lack of non-work social support is negatively related to mental well-being, if teleworkers' SoC-Score is low.*

*H4(0)<sub>1</sub>: A lack of non-work social support has no influence on mental well-being, if teleworkers' SoC-Score is high.*

*H4(0)<sub>2</sub>: Non-work social support has no influence on mental well-being, if teleworkers' SoC-Score is high.*

## **7.3 Adaption of Hypothesis H0**

The investigations and researches on the Sense of Coherence shows that not all employees in the field of teleworking need perfect external conditions, e.g. a work setting based on face-to-face interaction, social support, or good work-place relationships within their organization. In the field of telework, employees need a high Sense of Coherence in order to stay healthy, especially in crises, adverse situations and challenges. According to Antonovsky, health and disease are two extremes. Our respective state lies in the continuum in between. Employees in Telework are often exposed to some form of stress that moves their health on the continuum to disease. In order to move towards health, the employees must be able to recognize existing resources and use them in a positive way. This is done with the help of their Sense of Coherence. If a teleworker has a low Sense of Coherence, he/she is only partially able to use his/her existing resources in a health-oriented manner. Poor work-place relationships and low levels of social work support at a low SoC-score would make the employee feel sick in the long run. A high SoC would lead to a positive use of the available resources. The hypothesis H2a- must therefore be adapted and supplemented.



*H0a(-): Telecommuting is negatively related to mental well-being, if teleworkers have a low SoC-Score.*

*H0b(0): Telecommuting has no influence on mental well-being, if teleworkers have a high SoC-Score.*

## 8 CONCLUSION

The aim of the study was, to identify the links between the constructs telecommuting, social-support and mental well-being of employees. The results of the literature review have implications for the selections of steps of the organizational development (OD), HR-Management and can show superiors' directions for the choice of virtual work programs in the frame of telework to ensure more efficient communication processes and finally the competitiveness of the organization.

The introduced conceptual model for studying the linkages of the constructs and for supporting the developed hypothesizes, assumes a moderating effect of the variables social work-support, social non work-support and (warm) work place relationships between telecommuting and mental well-being of teleworkers. They can be regarded as crucial aspects in the development of health problems. The Sense of Coherence (SoC) can be seen an indirect moderator influencing the direct moderating variables. This work is limited by the assumption, that telecommuting and mental well-being is partly moderated by the Sense of Coherence, the core theory of the Salutogenesis concept after Antonovsky (1979), Other neighboring theories, like "resilience" or "hardiness" are not considered in detail.

Limited communication, which results from bridging a distance between two communicating parties, can either been solved by emerging from the digital environment, coming more often into physical contact, in the form of meta-communication, or by simulating it, by adding specific context information to the daily exchange of digital messages or telephone calls. For example, semiotic studies could examine the influence of verbal and visual symbols on work engagement more precisely. But also the sound of communication (tone of voice), should examined in terms of its possible impact on the perception of personal needs of employees in field sales, to find out, if there is a probability to achieve a higher motivation by innovation. This future works could be a giant leap in motivation research in the context of this paper. However, the risks involved in teleworking already start with the selection of teleworkers. The choice of suitable employees for home offices is the key to healthy staff, because, as stated above, not everyone is suitable for this form of work. The central issue is therefore not who is willing to work as a teleworker, because the work tasks, the flexibility and the reconciliation of work and family seem attractive at a first glance, but who is appropriate because of his/her Sense of Coherence and the ability to use General Resistance Resources in a health-oriented way. There are quite a few selection criteria for teleworkers. The most frequently cited in literature are self-motivation, self-discipline, flexibility, independence, expertise, and the ability to autonomously determine and evaluate performance goals (Waldeck, 2003:70). A mental classification of potential employees or applicants is typically not conducted. From this point of view, it would be advisable to apply a specific aptitude diagnosis when selecting teleworkers, to determine their SoC-score.

## REFERENCES

- ALI, S. M.; MERLO, J.; ROSVALL, M.; LITHMAN, T. & LINDSTRÖM, M. 2006. Social capital, the miniaturisation of community, traditionalism and first time acute myocardial infarction: a prospective cohort study in southern Sweden. *Social Science & Medicine*, 63, pp. 2204–2217. DOI:10.1016/j.socscimed.2006.04.007
- WRZESNIEWSKI, A.; DUTTON, J. E., & DEBEBE, G. 2003. Interpersonal sense-making and the meaning of work. *Research in Organizational Behavior*, Elsevier, Amsterdam, 25, pp. 93-135. DOI: 10.1016/S0191-3085(03)25003-6
- ALBERTSEN, K., NIELSEN, M. L. & BORG, V. 2001. The Danish psychosocial work environment and symptoms of stress: The main, mediating and moderating role of Sense Of Coherence. *Work & Stress*, Taylor & Francis, Milton Park, (15), pp. 241–253. DOI: 10.1080/02678370110066562
- ALBRECHT, T. L. & ADELMANN, M. B. 1987. Communicating Social Support: A theoretical perspective. In: Albrecht, T. L. & Adelman, M. B. (Eds.), *Communicating Social Support*. SAGE Publications, Thousand Oaks, pp. 18-39.
- ALLEN, T. D.; GOLDEN, T. D.; SHOCKLEY, K. M. 2015 How effective is telecommuting? Assessing the status of our scientific findings. *Psychological Science in the Public Interest*, SAGE Publications, (16), pp. 40–68. DOI: 10.1177/1529100615 593273
- AMICHAH-HAMBURGER, Y. 2005. Personality and the Internet. In: Y. Amichai-Hamburger (Ed.), *The social Net: Human behavior in cyberspace*. Oxford University Press, New York, pp. 27-55.
- ANDERSEN, A. J.; KAPLAN, S. A.; VEGA, R. P. 2014. The impact of telework on emotional experience: When, and for whom, does telework improve daily affective well-being? *European Journal of Work and Organizational Psychology*. Taylor & Francis (Routledge), London, 24(6), pp. 882-897. DOI: 10.1080/1359432X.2014.966 086
- ANTONOVSKY, A. 1979. *Health, stress and coping*. Jossey-Bass, San Francisco.
- ANTONOVSKY, A. 1997. *Salutogenese: Zur Entmystifizierung der Gesundheit*. Dgvt., Tübingen.
- AYSAR P. S. & RECASCINO, A. 2006. The impact of e-mail utilization on job satisfaction. The case of multi locations. *The Business Review*, Cambridge, 6(1), pp. 70-78.
- BAILEY, D. E. & KURLAND, N. B. 2002. A review of telework research: findings, new directions, and lessons for the study of modern work. *Journal of Organizational Behavior*, Wiley, Chichester, (23), pp. 383–400. DOI: 10.1002/job.144
- BAUER, G. F.; VOGT, K.; INAUEN, A.; JENNY, G. J. 2015. Work-SOC – Entwicklung einer Skala zur Erfassung des arbeitsbezogenen Kohärenzgefühls. *Zeitschrift für Gesundheitspsychologie*, 23(1), pp. 20-30. Hogrefe, Göttingen. <https://doi.org/10.1026/0943-8149/a000132>
- BEEHR, T. A.; FARMER, S. J.; GLAZER, S.; GUDANOWSKI, D. M. & NAIR, V. N. 2003. The enigma of social support and occupational stress: Source congruence and gender role effects. *Journal of Occupational Health Psychology*, American Psychological Association, Washington, 8(3), pp. 220-231. DOI: 10.1037/1076-8998.8.3.220
- BELANGER, F.; COLLINS, R. W. & CHENEY, P. H. 2001. Technology requirements and work group communication for telecommuters. *Information Systems Research*, INFORMS, Catonsville, (12), pp. 155-176. DOI: 10.1287/isre.12.2.155. 9695
- BLIESE, P. D. & BRITT, T. W. 2001. Social support, group consensus and stressor–strain relationships: social context matters. *Journal of Organizational Behavior*, 22, pp. 425-436. DOI:10.1002/job.95
- BRANDT, C. 1999. Telearbeit – eine Zukunft für Frauen mit Kindern? In: *Die Frau in unserer Zeit*, 2. Schriftenreihe der Konrad Adenauer Stiftung, Bonn.
- BRENKE K 2016. Home-Office. Möglichkeiten werden bei weitem nicht ausgeschöpft. DIW Wochenbericht. German Institute for Economic Research, DIW, Berlin, (83), pp. 95–105.
- BRUNELLE, E. 2013. Leadership and Mobile Working: The impact of distance on the Superior-Subordinate-Relationship and the moderating effects of Leadership style. *International Journal of Business and Social Science*, Center for Promoting Education and Research (CPER), New York, 4(11), pp. 1-14.

- COHEN, S. 2004. Social relationships and health. *American Psychologist*, American Psychological Association, Washington, (59), pp. 676–684. DOI: 10.1037/0003-066X.59.8.676
- COOPER, C. D. & KURLAND, N. B. 2002. Telecommuting, professional isolation and employee development in public and private organizations. *Journal of Organizational Behavior*, Wiley, New Jersey, (23), pp. 511-532. DOI: 10.1002/job.145
- COULSON, N. S. & KNIBB, R. 2007. Coping with food allergy: Exploring the role of the online support group. *CyberPsychology & Behavior*, PubMed, Rockville Pike, (10), pp. 145-148. DOI: 10.1089/cpb.2006.9978
- DECI, E. L. & RYAN, R. M. 1993. The Theory of Self-Determination of Motivation and its Relevance to Pedagogics. In: *Zeitschrift für Pädagogik*, Berlin, 39(2), pp. 223–238.
- DE DREU, C. K. W. & WEINGART, L. R. 2003. Task versus relationship conflict, team performance, and team member satisfaction: a meta-analysis. *Journal of Applied Psychology*, American Psychological Association, Washington, 88(4), pp. 741-749. DOI: 10.5465/APBPP.2002.7516590
- DE RIJK, A. E.; LEBLANC, P. M.; SCHAUFELI, W. B. & DE JONGE, J. 1998. Active coping and need for control as moderators of the job demand–control model: Effects on burnout. *Journal of Occupational and Organizational Psychology*. Wiley, Chichester, (71), pp. 1–18. DOI: 10.1111/j.2044-8325.1998.tb00658.x
- DERKS, D., & BAKKER, A. B. (2010). The Impact of E-mail Communication on Organizational Life. *Cyberpsychology: Journal of Psychosocial Research on Cyber-space*, Masaryk University, Faculty of Social Studies, 4(1). Retrieved from <https://cyberpsychology.eu/article/view/4233/3277>
- DÖRING, N. 1999. Sozialpsychologie des Internet. Die Bedeutung des Internet für Kommunikationsprozesse, Identitäten, soziale Beziehungen und Gruppen. *Gruppendynamik und Organisationsberatung*, Springer, Wiesbaden, 32(2), pp. 234-235.
- FELSTAED, A.; JEWSON, N.; PHIZACKLEA, A. & WALTERS, S. 2001. Working at home: Statistical evidence for seven key hypotheses. *Work, Employment & Society*, SAGE Publications, Thousand Oaks, 15(2), pp. 215-231. DOI: 10.1177/09500170122118922
- FLENSBORG-MADSEN, T.; VENLEGODT S.; MERRICK J. 2005. Sense of Coherence and Physical Health. A Review of Previous Findings. *Scientific World Journal*, Hindawi Publishing Corporation, London, (5), pp. 665–673. DOI: 10.1100/tsw.2005.85
- FLENSBORG-MADSEN, T.; VENLEGODT S.; MERRICK J. 2006. Sense of coherence and physical health. The emotional sense of coherence (SOC-E) was found to be the best-known predictor of physical health. *Scientific World Journal*, Hindawi Publishing Corporation, London, (6), pp. 2147-2157. DOI: 10.1100/tsw.2006.344
- ERWIN, B. A.; TURK, C. L.; HEIMBERG, R. G.; RESCO, D. M. & HANTULA, D. A. 2004. The Internet: Home to a severe population of individuals with social anxiety disorder? *Anxiety Disorders*, Elsevier, Amsterdam, (18), pp. 629–646. DOI: 10.1016/j.janxdis.2003.08.002
- FAY, M. J. 2011. Informal communication of co-workers: a thematic analysis of messages. *Qualitative Research in Organizations and Management: An International Journal*, Emerald Group Publishing Limited, Bingley, 6(3), pp. 212-229. DOI: 10.1108/17465641111188394
- FAY, M. J. & KLINE, S. L. 2012. Coworker Relationships and Informal Communication in High-Intensity Telecommuting. *Journal of Applied Communication Research*, Taylor & Francis (Routledge), London, 39(2), pp. 144-163. DOI: 10.1080/00909882.2011.556136
- FRIEDMAN, R. A., & CURRALL, S. C. 2004. E-Mail Escalation: Dispute Exacerbating Elements of Electronic Communication. *Human Relations*, SAGE Publications, Thousand Oaks, 56(11), pp. 1325-1347. DOI: 10.2139/ssrn.304966
- FULK, J. & CUMMINGS, T. G. 1984. Refocusing Leadership: A modest proposal. In: J. C. Hunt; D. M. Hosking; C. A. Schriesheim; R. Steward (Eds.), *Leaders and Managers: International Perspectives on managerial Behavior and Leadership*, Pergamon, Oxford, pp. 53-81. <https://doi.org/10.1016/B978-0-08-030943-9.50013-9>
- GALLENKAMP, J.; PICOT, A; WELPE, I. & DRESCHER, M. 2010. Die Dynamik von Führung, Vertrauen und Konflikt in virtuellen Teams. In: *Gruppendynamik und Organisationsberatung*. Springer, Wiesbaden, 41(4), pp. 289–303.

- GEYER S. 2000. Antonovsky's Sense of Coherence: Ein gut geprüftes und empirisch bestätigtes Konzept? In: Kolip, P.; Wydler, H. & Abel, T. (Eds.). *Salutogenese und Kohärenzgefühl*. Juventa, Weinheim, pp. 209–221.
- GOLDEN, T. D., VEIGA, J. F., & SIMSEK, Z. 2006. Telecommuting's differential impact on work-family conflict: Is there no place like home? *Journal of Applied Psychology*, American Psychological Association, Washington, 91(6), 1340–1350. DOI: 10.1037/0021-9010.91.6.1340
- GRIFFITHS, C. A. 2009. Sense of coherence and mental health rehabilitation. *Clinical Rehabilitation*, 23, pp. 72–78. DOI:10.1177/0269215508095360
- HALEY, J. 1963. *Strategies of Psychotherapy*. Grune & Straton, Inc., New York. <https://doi.org/10.1037/14324-000>
- HAMBURGER, Y. & BEN-ARTZI, E. 2000. The relationship between extraversion, neuroticism, and the different uses of the internet. *Computers in human behaviour*, Elsevier, Amsterdam, 16(4), pp. 441–449. DOI: 10.1016/S0747-5632(00)00017-0
- HARANDI, T. F., TAGHINASAB, M. M., & NAYERI, T. D. 2017. The correlation of social support with mental health: A meta-analysis. *Electronic Physician*, 9(9), pp. 5212–5222. DOI:10.19082/5212
- HÄUSSER, J. A.; MOJZISCH, A.; NIESEL, M. & SCHULZ-HARDT, S. 2010. Ten Years on: A Review of Recent Research on the Job Demand-Control (-Support) Model and Psychological Well-Being. *Work and Stress*, European Academy of Occupational Health Psychology, University of Nottingham, Nottingham, (24), pp. 1–35. DOI: 10.1080/02678371003683747
- HIGGINS, E. T. & KRUGLANSKI, A. W. 2003. *Social Psychology: A General Reader (Key Readings in Social Psychology Series)*. Psychology Press, New York.
- HINDS, P. J. & MORTENSEN, M. 2005. Understanding Conflict in Geographically Distributed Teams: The Moderating Effects of Shared Identity, Shared Context, and Spontaneous Communication. *Organization Science*, INFORMS, Catonsville, 16(3), pp. 290–307.
- HOLZ, M; ZAPF, D. & DORMANN, C. 2004. Soziale Stressoren in der Arbeitswelt: Kollegen, Vorgesetzte und Kunden. *Arbeit, Zeitschrift für Arbeitsforschung, Arbeitsgestaltung und Arbeitspolitik*, De Gruyter, Berlin, 13(3), pp. 278–291.
- HÖFER, R. 2000. *Jugend, Gesundheit und Identität. Studien zum Kohärenzgefühl*. Leske & Budrich, Opladen. <https://doi.org/10.1007/978-3-663-10439-1>
- HOLT-LUNSTAD, J.; SMITH, T. B.; BAKER, M.; HARRIS, T. & STEPHENSON, D. 2015. Loneliness and Social Isolation as Risk Factors for Mortality: A Meta-Analytic Review. *Perspectives on Psychological Science* 10(2), pp. 227–237. DOI:10.1177/1745691614568352
- HURRELMANN, K. (2000): *Gesundheitssoziologie. Eine Einführung in sozialwissenschaftliche Theorien von Krankheitsprävention und Gesundheitsförderung*. Juventa, München.
- JOHNSON, J. V. 1986. The impact of workplace social support, job demands and work control upon cardiovascular disease in Sweden. *Environmental and Organizational Psychology Research Monographs*, University of Stockholm, (1) 1–240 University of Stockholm, Stockholm.
- JOHNSON, S. K.; BETTENHAUSEN, K. L. & GIBBONS, E. 2009. Realities of Working in Virtual Teams: Affective and Attitudinal Outcomes of Using Computer-Mediated Communication. *Small Group Research*, SAGE Publications, Thousand Oaks, 40(6) 623–649. DOI: 10.1177/1046496409346448
- JOHNSON, J. V. & HALL, E. M. 1988. Job Strain, Work Place Social Support, and Cardiovascular Disease A Cross-Sectional Study of a Random Sample of the Swedish Working Population. *American Journal of Public Health*, American Public Health Association, Washington DC, (78), pp. 1336–1342. DOI: 10.2105/AJPH.78.10.1336
- KARASEK, R. A. 1979. Job Demands, Job Decision Latitude, and Mental Strain: Implications for Job Redesign, In: *Administrative Science Quarterly*, SAGE Publications, Thousand Oaks, 24(2), pp. 285–308. DOI: 10.2307/2392498
- KARASEK, R. A. & THEORELL, T. 1990. *Healthy work, stress, productivity, and the construction of the working life*. Basis Books, New York.

- KIESLER, S.; SIEGEL, J. & MCGUIRE, T. W. 1984. Social psychological aspects of computer-mediated communication. *American Psychologist*, American Psychological Association, Washington, 39(10), pp. 1123-1134.
- KIESLER, S. & SPROULL, L. 1992. Group decision making and communication technology. *Organizational Behavior and Human Decision Processes*, Elsevier, Amsterdam, (52), pp. 96-123. DOI: 10.1037/0003-066X.39.10.1123
- KONRADT, U., SCHMOOK, R. & MALECKE, M. (2000). Implementation of telework and impacts on individuals, organizations, and families: A critical review of the literature. In: Cooper, C. L. & Robertson, I. T. (Eds.), *International Review of Industrial and Organizational Psychology*, Wiley, Chichester, (15), pp. 63-99.
- KRAUT, R.; PATTERSON, M.; LUNDMARK, V.; KIESLER, S.; MUKOPHADHYAY, T. & SCHERLIS, W. 1998. Internet paradox: A social technology that reduces social involvement and psychological well-being? *American Psychologist*, American Psychological Association, Washington, 53(9), pp. 1017-1031. DOI: 10.1037/0003-066X.53.9.1017
- LANDSBERGIS, P. A. 1988. Occupational stress among health care workers: A test of the job demands-control model. *Journal of Organizational Behavior*, Wiley, Chichester, (9) pp 217–239. DOI: 10.1002/job.4030090303
- LEA, M., & SPEARS, R. 1991. Computer-mediated communication, de-individuation and group decision-making. *International Journal of Man-Machine Studies*, Cambridge, (39), pp. 283-301. DOI: 10.1016/0020-7373(91)90045-9
- LEA, M., & SPEARS, R. 1992. Paralanguage and social perception in computer-mediated communication. *Journal of Organizational Computing*, Taylor & Francis (Routledge), London, (2), pp. 321-342. DOI: 10.1080/10919399209540190
- LEARY, M. R., & SPRINGER, C. 2001. Hurt feelings: The neglected emotion. In R. M. Kowalski (Ed.), *Aversive behaviors and relational transgressions: The underbelly of social interaction*. American Psychological Association, Washington, pp. 151-175. DOI: 10.1037/10365-006
- LEARY M. R., KOCH, E. & HECHENBLEIKNER N. 2001. Emotional responses to inter-personal rejection. In: Leary M. R., (Ed.). *Interpersonal rejection*. Oxford University Press, New York: 2001. pp. 145–166.
- LEVERT, T.; LUCAS, M. & ORTLEB, K. 2000. Burnout in psychiatric nurses : contributions of the work environment and a sense of coherence. *South African Journal of Psychology*, 30(2), pp. 36-43. <https://doi.org/10.1177/008124630003000205>
- LIEBERMAN, M. A., WINZELBERG, A., GOLANT, M. & DIMINNO, M. 2005. The Impact of Group Composition on Internet Support Groups: Homogeneous Versus Heterogeneous Parkinson's Groups. *Group Dynamics Theory Research and Practice*, American Psychologist, American Psychological Association, Washington, 9(4), pp. 239-250. DOI: 10.1037/1089-2699.9.4.239
- LOWRY, P. B.; ROBERTS, T. L.; ROMANO, N. C. Jr.; CHENEY, P. D.; & HIGHTOWER, R. T. 2006. The Impact of Group Size and Social Presence on Small-Group Communication: Does Computer-Mediated Communication Make a Difference? *Small Group Research*, SAGE Publications, Thousand Oaks, 37(6), pp. 631-661. DOI: 10.1177/1046496406294322
- LOTT, Y. 2015. Working-time flexibility and autonomy: A European perspective on time adequacy. *European Journal of Industrial Relations* 21, SAGE Publications, Thousand Oaks, pp. 259–274. DOI: 10.1177/0959680114543604
- MANN, S. 1998. Achieving frontline communication excellence: The cost to health. *IEEE Transactions on Professional Communication*, New York, (41), pp. 254-265. DOI: 10.1109/47.735367
- MANN, S.; VAREY, R.; BUTTON, W. 2000. An exploration of the emotional impact of teleworking via computer-mediated communication. *Journal of Managerial Psychology*, Bingley, (15), pp. 668-690. DOI: 10.1108/02683940010378054
- MANN, S., HOLDSWORTH L. 2003. The psychological impact of teleworking. Stress, emotions and health. *New Technology, Work and Employment*, SAGE Publications, Thousand Oaks, (18), pp. 196–211. DOI: 10.1111/1468-005X.00121

- MARTIN, B. H. & MACDONNELL, R. 2012. Is telework effective for organizations? A meta-analysis of empirical research on perceptions of telework and organizational outcomes. *Management Research Review*, Emerald Group Publishing Limited, Bingley, 35(7), pp. 602-616. DOI: 10.1108/01409171211238820
- MECKEL-HAUPT, A. 2001. Ein Beitrag zur Validierung des deutschsprachigen SOC-Fragebogens von Aaron Antonovsky. Medizinische Fakultät der Heinrich-Heine-Universität Düsseldorf.
- METZGER, B.; URSIN, B.; STAFFELBACH, B. 2016. Der Einfluss der Telearbeit auf die Identifikation mit dem Unternehmen. Empirisch analysiert am Beispiel einer Versicherungsunternehmung. *Arbeit, Zeitschrift für Arbeitsforschung, Arbeitsgestaltung und Arbeitspolitik*, De Gruyter, Berlin, 12(2), pp. 147–162.
- MONTREUIL, S. & LIPPEL, K. 2003. Telework and occupational health: a Quebec empirical study and regulatory implications. *Safety Science*, Elsevier, Amsterdam, (41), pp. 339-359. DOI: 10.1016/S0925-7535(02)00042-5
- MORGANSON, V. J.; MAJOR, D. A.; OBORN, K. L.; VERIVE, J. M. & HEELAN, M. P. 2010. Comparing telework locations and traditional work arrangements. Differences in work-life balance support, job satisfaction, and inclusion. *Journal of Managerial Psychology*, Emerald Group Publishing Limited, Bingley, (25), pp. 578–595. DOI: 10.1108/02683941011056941
- MULLER, Y. & ROTHMANN, S. 2009. Sense of coherence and employees' perceptions of helping and restraining factors in an organization. *South African Journal of Industrial Psychology*, SAJIP, Johannesburg, 35(1), pp. 89-98. DOI: 10.4102/sajip.v35i1.731
- NIE, N. H. 2001. Sociability, interpersonal relations, and the Internet: Reconciling conflicting findings. *American Behavioral Scientist*, SAGE Publications, Thousand Oaks, 45(3), pp. 420–435. DOI: 10.1177/00027640121957277
- NIELSEN, A. M. & HANSSON, K. 2007. Associations between adolescents' health, stress and sense of coherence. *Stress and Health*, 23, pp. 331-341. DOI:10.1002/smi. 1155
- NIGGL, M.; EDFELDER, D. & KRAUPA, M. 2000. Telearbeit bei der BMW Group. Steigerung der Wettbewerbsfähigkeit durch flexibles Arbeiten. Springer, Wiesbaden. <https://doi.org/10.1007/978-3-642-57099-5>
- NIZIELSKI, S. 2015. Emotional Intelligence – A Personal Resource for Employees who Work With People: Processes and Implications, Inaugural-Dissertation, Faculty of Human Sciences, Otto-Friedrich-Universität Bamberg. URL: <https://d-nb.info/1060715988/34>, Last retrieved on 15.06.2018.
- O'KANE, P.; PALMER, M. & HARGIE, O. 2007. Workplace interactions and the polymorphic role of email. *Leadership and Organization Development Journal*, Emerald Group Publishing Limited, Bingley, 28(4), pp. 308-320. DOI: 10.1108/ 01437730710752193
- OSCA, A.; URIEN, B.; GENOVEVA, G. C.; Martínez-Pérez, M. D., & Martínez-Pérez, N. 2005. Organizational support and group efficacy: A longitudinal study of main and buffer effects. *Journal of Managerial Psychology*, Emerald Group Publishing Limited, Bingley, 20(3/4), pp. 292-311. DOI: 10.1108/02683940510589064
- PARKES, K. R.; MENDHAM, C. A. & VON RABENAU, C. 1994. Social Support and the Demand Discretion Model of Job Stress: Tests of Additive and Interactive Effects in Two Samples. *Journal of Vocational Behavior*, (44), pp. 91–113. DOI: 10.1006/jvbe.1994.1006
- PAOLI, P. & MERLLIÉ, D. 2001. Third European survey on working conditions 2000, European Foundation for the improvement of living and working conditions. Office for Official Publications of the European Communities, Dublin.
- PICOT, A.; REICHWALD, R.; WIGAND, R. 2001. Die grenzenlose Unternehmung. Information, Organisation und Management. Lehrbuch zur Unternehmensführung im Informationszeitalter. Springer, Wiesbaden.
- REICH, K. 2000. Systemisch-konstruktivistische Pädagogik. Einführung in Grundlagen einer interaktionistisch-konstruktivistischen Pädagogik. Luchterhand, Neuwied.

- ROBERTS, A. & PISTOLE, M. C. 2009. Long-distance and proximal romantic relationship satisfaction: Attachment and closeness predictors. *Journal of College Counseling*, SAGE Publications, Thousand Oaks, (12), pp. 5-17. DOI: 10.1002/j.2161-1882.2009.tb00036.x
- SHEPHERD-BANIGAN, M.; BELL, J. F.; BASU, A.; BOOTH-LAFORCE, C. & HARRIS, J. R. 2016. Workplace stress and working from home influence depressive symptoms among employed women with young children. *International Journal of Behavioral Medicine*, Springer, New York, (23), pp. 102–111. DOI: DOI: 10.1007/s12 529-015-9482-2
- SPEARS, R.; LEA, M. & POSTMES, T. 2001. Social psychological theories of computer-mediated communication. In: P. Robinson & H. Giles (Eds.), *The handbook of language and social psychology*. Wiley, Chichester, pp. 601-623.
- STROBEL, G. & LEHNING, U. 2003. Arbeitssituation von Beschäftigten im Außendienst: Defizite und Gestaltungsmöglichkeiten der psychosozialen Arbeitsbedingungen. Bundesanstalt für Arbeitsschutz und Arbeitsmedizin, Dortmund, Berlin, Dresden.
- TE'ENI, D. 2001. Review A Cognitive-Affective Model of Organizational Communication for Designing IT. *MIS Quarterly*, University Of Minnesota, St. Paul, (25), pp. 251-312. DOI: 10.2307/3250931
- THEORELL, T. 2000. Job characteristics in a theoretical and practical health context. In: C. Cl. Cooper (Ed.). *Theories of organizational stress*. Oxford University Press, New York, pp. 205-219.
- THOMAS, A. 2005. Kultur und Kulturstandards. In: Thomas, A.; Kinast, E.-U.; Schroll-Machl, S. (Ed.): *Handbuch Interkulturelle Kommunikation und Kooperation, Grundlagen und Praxisfelder*, Vandenhoeck & Ruprecht, Göttingen.
- TOMAKA, J; THOMPSON, S. & PALACIOS, R. 2006. The relation of social isolation, loneliness, and social support to disease outcomes among the elderly. *Journal of Aging and Health*, 18, pp. 359–384. DOI:10.1177/0898264305280993
- SARDESHMUKH, S. R.; SHARMA, D. & GOLDEN, T. D. 2012. Impact of telework on exhaustion and job engagement: A job demands and job resources model. Wiley, Chichester, pp. 193–207. DOI: 10.1111/j.1468-005X.2012.00284.x
- SARGENT L. D. & TERRY, D. J. 2000. The moderating role of social support in Karasek's job strain model. *Work and Stress*, European Academy of Occupational Health Psychology, University of Nottingham, Nottingham, (14), pp. 245–261. DOI: 10.1080/02678370010025568
- SCHMALTZ, H. N.; SOUTHERN, D.; GHALI, W. A. 2007. Living alone, patient sex and mortality after acute myocardial infarction. *Journal of General Internal Medicine*, 22, pp. 572–578. DOI:10.1007/s11606-007-0106-7
- SPROULL, L. & KIESLER, S. 1986. Reducing Social Context Cues: Electronic Mail in Organizational Communication. *Management Science*, INFORMS, Catonsville, 32, pp. 1492-1512. DOI: 10.1287/mnsc.32.11.1492
- STAFFORD, L. & MEROLLA, A. J. 2007. Idealization, reunions, and stability in long-distance dating relationships. *Journal of Social and Personal Relationships*, SAGE Publications, Thousand Oaks, (24), pp. 37-54. DOI: 10.1177/0265407507072 578
- WALDECK, K. 2003. Telearbeit in der beruflichsozialen Rehabilitation von Menschen mit Behinderungen. LIT, Münster.
- WATZLAWICK P.; BEAVIN J. H. & JACKSON D. D. 1967. *The Pragmatics of Human Communication*, W. W. Norton & Co., New York.
- WATZLAWICK P.; BEAVIN J. H. & JACKSON D. D. 1990. *Menschliche Kommunikation: Formen, Störungen, Paradoxien*. Huber, Bern, Stuttgart, Wien.
- WALTHER, J. B. 1992. Interpersonal effects in computer-mediated interaction: A relational perspective. *Communication Research*, SAGE Publications, Thousand Oaks, (19), pp. 52-90. DOI: 10.1177/009365092019001003
- WALTHER, J. B. 1995. Relational aspects of computer-mediated communication: Experimental observations over time. *Organizational Science*, INFORMS, Catonsville, (6), pp. 186-203. DOI: 10.1287/orsc.6.2.186

- WALTHER, J. B. 1996. Computer-mediated communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication Research*, SAGE Publications, Thousand Oaks, (23), pp. 3-43. DOI: 10.1177/009365096023001001
- WHITE, M. & DORMAN, S. M. 2001. Receiving social support online: implications for health education. *Health Education Research*. Oxford University Press, New York, 16(6), pp. 693–707. DOI: 10.1093/her/16.6.693
- WIESENFIELD, B. M., RAGHURAM, S. & GARUD, R. 1999. Communication Patterns as Determinants of Organizational Identification in a Virtual Organization. *Organization Science*, INFORMS, Catonsville, 10(6). DOI: 10.1287/orsc.10.6.777
- WINKLER, G. 2001. *Telearbeit und Lebensqualität: Zur Vereinbarkeit von Beruf und Familie – Zur Vereinbarkeit von Beruf und Familie*. Campus, Frankfurt.
- VAN DER COLFF, J. J., & ROTHMANN, S. 2009. Occupational stress, sense of coherence, coping, burnout and work engagement of registered nurses in South Africa. *South African Journal of Industrial Psychology*, SAJIP, Johannesburg, 35(1), pp. 1-10. DOI:10.4102/sajip. v35i1.423
- VEGA, G.; BRENNAN, L. 2000. Isolation and technology - The human disconnect. *Journal of organizational change management*, Emerald Group Publishing Limited, Bingley, (13), pp. 468-481. DOI: 10.1108/09534810010377435
- VERBEKE, A.; SCHULTZ, R., GREIDANUS, N. & HAMBLEY, L. 2008. *Growing the Virtual Workplace*, Edward Elgar, Northampton. <https://doi.org/10.4337/9781848440241>
- VISWESVARAN, C.; SANCHEZ, J. I. & FISHER, J. 1999. The role of social support in the process of work stress: A meta-analysis. *Journal of Vocational Behavior*, Elsevier, Amsterdam, 54(2), pp. 314-334. DOI: 10.1006/jvbe.1998.1661
- YILDIRIM, Y., & KOCABIYIK, S. (2010). The relationship between social support and loneliness in Turkish patients with cancer. *Journal of Clinical Nursing*, 19, pp. 832–839. DOI: 10.1111/j.1365-2702.2009.03066.x
- ZHANG, X.; NORRIS, S. L.; GREGG, EW.; BECKLES, G. 2007. Social support and mortality among older persons with diabetes. *The Diabetes Educator*, 33, pp. 273–281. DOI:10.1177/0145721707299265