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Heather Dawson-Howard

Peter P. Standen

Edith Cowan University, p.standen@ecu.edu.au

Maryam Omari

Edith Cowan University, m.omari@ecu.edu.au

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Ms Heather Dawson-Howard

PhD Candidate, School of Business, Edith Cowan University, Perth, Australia

Email: Heather.Dawson-Howard@minjargold.com.au

Associate Professor Peter Standen

School of Business, Edith Cowan University, Perth, Australia

Email: p.standen@ecu.edu.au

Associate Professor Maryam Omari

School of Business, Edith Cowan University, Perth, Australia

Email: m.omari@ecu.edu.au

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ABSTRACT

Telework is a rapidly growing work practice but its effects on employees' psychological wellbeing have been little studied. A particular problem for remote workers is the potential loss of social support. Much research shows support from supervisors and co-workers increases employee wellbeing and reduces the negative effects of job demands. How telemediated social support functions in telework, and how much home-based support can replace it, have not so far been studied. A framework for research on social support in telework is presented in this paper. Social support can be provided electronically but how affects workers' wellbeing and performance is an important concern for managers of teleworkers and researchers.

Keywords: Job and work design, Interpersonal behaviour, Flexibility, Innovation and Managing people

INTRODUCTION

Working away from the office has become increasingly common in recent decades as mobile devices and internet technology support a richer range of communications. Some firms now have substantial workforces based at home but more commonly employees choose to work part-time or occasionally from home. In other versions of telework, staff in an office work solely or significantly with colleagues in distant offices, perhaps in virtual teams. Contract (e.g. outsourced) workers can be located in other states or countries, and field workers can remain in touch with the office from almost anywhere. Telework, also called telecommuting or e-work, is growing across a wide range of industries including management, business and professional services, information and communications technology (ICT) services and 'knowledge' work or creative industries.

A critical issue in many of these arrangements is the *social* inclusion of remote employees within the broader organisation. Social support has long been considered fundamental to employees' psychological and physical wellbeing. In a seminal study House (1981) found social support 'buffers' employees, moderating the effects of job demands by preventing stress from negatively affecting

physical and mental health. The buffering hypothesis has received wide empirical support (Hausser, Mojzisch, Niesel, & Schulz-Hardt, 2010).

Social support is usually assumed to involve regular face-to-face (FTF) interactions with colleagues or supervisors (Hausser et al., 2010; House, 1981; LaRocco, House, & French, 1980). Informal interactions such as lunch breaks or hallway conversations reinforce employees' sense of attachment and connectedness with others (Burtha & Connaughton, 2004; Kiesler & Cummings, 2002). A critical question for managers and researchers considering telework is how much telemediated communications can substitute for the formal and informal social support found in offices. Two general perspectives on this exist in the literature. Some researchers find telemediated interaction limits the development of relationships with supervisors and other team members (Sproull & Kiesler, 1986, 1991; Morganson, Major, Oborn, Verive and Heelan, 2010), while others find that less FTF contact with co-workers leads to greater satisfaction (Fonner and Roloff, 2010).

An obvious resolution of these findings is that telemediated work suits some people in some circumstances, but the individual difference variables and contextual factors involved are so far unclear since little systematic research has examined social support in telework. An important factor is likely to be a teleworker's social supports in the home or community environment, sources less available to office workers. How much these can substitute for organisational supports is so far unclear. This paper outlines a framework to help managers and researchers better understand the multiple influences on teleworker social support and wellbeing, an issue of growing importance as telework evolves into a mainstream option for job design. Here we focus specifically on home-based telework, but other forms of telework are expected to share some of these issues. The framework incorporates four major variables affecting psychological well-being: job design, work social support, mode of delivery of the support (telemediated vs face to face) and non-work social support (Figure 1). The following sections review previous studies related to each aspect to identify testable hypotheses.

JOB DESIGN AND PSYCHOLOGICAL WELLBEING

Karasek (1979) developed a widely-cited model of the relationship between stress, or job strain, and aspects of the work environment, notably job demand and decision-making latitude. Job demand is defined as workload and conceptualised in a variety of ways that predominantly involve timeframes or role conflict (Van Der Doef & Maes, 1999). Decision latitude, or job control, describes a worker's freedom to exercise control over his or her work activities (Van Der Doef & Maes, 1999). Contrary to prior research, Karasek found workers with highly demanding jobs and little decision-making latitude were likely to experience higher levels of emotional strain, and concluded that "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" (1979 p.287). Karasek's Job Demand Control (JDC) model is widely acknowledged as predicting the adverse impact of job strain on physiological health, for example on cardiovascular disease (Theorell, 2000).

Although telework's image as a 'flexible' work practice suggests it might reduce job demands and increase perceived control by removing the worker from office constraints to do with work hours, dress and direct supervision, for example, other aspects of it may increase work strain. Early studies emphasised the dangers of demands and controls in the home environment (especially from family), overwork (since the home office is always 'open') and the possibility of the home becoming an 'electronic sweatshop' for low-paid workers, free from health and safety controls. Social support is likely to be an important moderator for any such environmental problems and for any job demand and control problems experienced by a teleworker. This hypothesis forms a background for others (below) on the effects of electronic mediation, personality and gender on social support.

H1: Social support will moderate the effects of high job demands and low job control on psychological wellbeing in teleworkers.

SOCIAL SUPPORT

Social support has been broadly defined as:

“giving assistance or emotional support to others and especially in situations of stress. It often involves simply establishing rapport with a person in a stressful situation but may include the provision of protection or material support or any other form which leaves the recipient with a sense of connection, belonging, and being valued by another” (Matsumoto, 2009, p. 505).

From the recipient’s perspective, social support strengthens a person’s sense of self, and is therefore fundamental to clinical models of general psychological wellbeing (PWB) (e.g., Rogers, 1957) as well as being important to holistic models of PWB in work settings, such as Warr’s vitamin model (e.g., Warr, 1990). Employees’ social support is drawn from both within and outside the workplace, although support from intimate relations with family or friends is generally more important to overall PWB.

Social support can take many forms, including material, emotional or informational support (Wilcox & Vernberg, 1985), and the sources of support can include friends, family, work colleagues or even relative strangers. The recipient’s characteristics and preferences influence the nature and effectiveness of the social support process. For example, if introverted people believe they have less need for others’ support they might be more satisfied with relatively limited communications provided by email or the internet.

The influence of social support in and out of the workplace on psychological wellbeing has been studied extensively in recent decades. In the buffering model, social support ‘buffers’ an individual from the negative effects of stressful events or times (Cohen & Wills, 1985b; Hausser, Mojzisch, Niesel, & Schulz-Hardt, 2010). In contrast the “main effect” model predicts a direct overall benefit to PWB from social support, beyond its buffering effect in stressful times (Cohen & Wills, 1985a).

Considerable evidence shows that a lack of positive social relationships leads to negative psychological states such as anxiety and or depression (Cohen, 2004; Rydstedt, Head, Stansfeld & Woodley-Jones, 2012). In an influential review Cohen and Wills (1985b) observed that the *perception* of support was more important than any objective support behind buffering or main effects (Cohen & Wills, 1985b).

The link between social support and PWB is well established in the general (non-work) literature (e.g., Billings & Moos, 1982; Cohen, 2004; Henderson, Byrne, Duncan-Jones, Scott, & Adcock, 1980; Holahan & Moos, 1981; Turner, 1981; Williams, Ware, & Donald, 1981; Rydstedt, Head, Stansfeld, & Woodley-Jones, 2012;). For example, House, Robbins and Metzner (1982) found greater mortality rates of individuals with low levels of social support in a longitudinal study.

In contrast, studies of social support and its buffering effect in the workplace have produced inconsistent results (Viswesvaran, Sanchez & Fisher, 1999). While numerous studies show a buffering effect of supervisor support on workplace stressors (e.g. Beehr, Farmer, Glazer, Gudunowski & Nair, 2003; Dorman & Zapf, 1999; Sargent & Terry, 2000), others fail to find a relationship and some find social support actually *reduces* psychological wellbeing in an “opposite buffering” effect (Ganster, Fusilier & Mayes 1986; Kaufman & Beehr 1986. Ganster et al. (1986) found support from family and friends more associated with health outcomes than work support.

In telework it is likely that support from both supervisors and colleagues will be important, and will provide both buffering and main effects:

H2a: Work-based social support from both supervisors and colleagues will increase teleworkers' psychological well-being.

H2b: Work-based social support will buffer teleworkers against workplace stresses caused by job demands.

SOCIAL SUPPORT FROM NON-WORK SOURCES

Social support from outside the organisation is likely to be a more important influence on workers' wellbeing (Ganster et al., 1986) and may be even more important in home-based telework than office work (Standen, Daniels & Lamont 1999), to some extent making up for losses of support from co-workers. However, home-based work also brings the possibility of conflict with other occupants of the home or neighbourhood and may require workers to set boundaries with family or friends in circumstances that fall outside normal role-relationships. Some studies suggest that many people are

attracted to home-based telework to achieve greater work-life balance and temporal flexibility (Standen, Daniels & Lamond, 1999), particularly in professional and managerial occupations where workers have greater autonomy over work hours, deadlines and scheduling. There are also people who find office social life uncomfortable or alienating, including those who feel harassed, bullied or victimised for racial, gender or other reasons (Huws, Korte & Robinson, 1992)

Where non-work support *is* available it may counter any reduction in support from organisational members due to distance and telemediated communication. However, how much it can substitute is a question so far unaddressed in the literature. Support from colleagues and supervisors can have job-specific elements, including information and material support, and emotional support for specific interpersonal or organisational stresses not familiar to outsiders. These supports may be required for effective teamwork or individual accomplishment.

Predicting the outcome of non-work support is therefore complicated by the need to consider teleworkers' perceptions of the positives and negatives of both office and remote work (assuming office work rather than unemployment as a yardstick for evaluating well-being). In general both theoretical considerations (e.g. Standen et al., 1999) and the available evidence (e.g. Daniels, 2000; Standen, Daniels & Lamond, 1999) point to a positive effect, although this is likely to heavily qualified in some circumstances.

H3a: Non-work support will increase teleworkers' psychological well-being.

H3b: Non-work support will moderate the loss of work-based social support in telework to some extent.

How non-work supports combine with work supports (H2) is difficult to predict but provides an interesting topic for future research.

ELECTRONICALLY-MEDIATED COMMUNICATION AND SOCIAL SUPPORT

As electronically-mediated communication (EMC) via telephone, email, internet or video conferencing replaces FTF contact, researchers have studied its impact on social influence, group

decision making, status and power differences, personal identity, group dynamics and language (Lowry, Roberts, Romano, Cheney & Hightower, 2006; Spears, Lea, & Postmes, 2001). Both advantages and disadvantages have been identified. Some researchers observe that EMC lacks the depth and emotional timbre of FTF communication, having an impersonal quality that allows users to dissociate themselves from the content and tone of their communications and encourages social isolation (Kraut et al., 1998; Sardeshmukh, Sharma & Golden, 2012; Sproull & Kiesler, 1986). Others emphasise new opportunities to communicate more widely with like-minded others and build support networks (Hamburger & Ben-Artzi, 2000).

Studies of EMC outside the workplace

Since EMC underlies most teleworking it is important to understand how its advantages and disadvantages affect social support in this context. Much relevant research can be found outside the telework and workplace communications literature. For example, the effect of internet-based social support on psychological wellbeing has been studied in therapeutic contexts. Telemediated contact with people experiencing similar stressors is reported to have a buffering effect in studies of conditions including Irritable Bowel Syndrome (Coulson, 2005), Parkinson's disease (Lieberman, 2005) and food allergies (Coulson & Knibb, 2007). Coulson and Knibb's group members appreciated having informational and emotional support without the spatial or temporal restrictions of FTF meetings, being able to give as well as receive support, and having the freedom to discuss sensitive issues without being judged. Many found such social support helped them develop new strategies for coping with the daily challenges of a food allergy. Studies of online social interaction outside specifically therapeutic contexts similarly show it reduces isolation and loneliness and therefore lowers the risk of anxiety or depression (e.g. Amichai-Hamburger, 2005).

Such benefits have to be weighed against the loss of personal contact and emotional depth when the richness of FTF interaction is absent. Words or 'emoticons' (e.g. 'smiley faces'), especially in short text messages, often do not provide the same sense of connection (Alemi et al., 1996). Voice and video links are richer, but still omit many cues to a person's state and restrict the frequency, length,

spontaneity and fluidity of contact. Walther's Social Information Processing (SIP) model (Walther, 1992) suggests telemediated social information is processed in a similar way to FTF information but proceeds on a slower timescale since it must be coded into and decoded from digital media. This narrower 'bandwidth' provides a less personal or natural way of transmitting social information (Spears et al., 2001; Walther, 1992) and leads to slower relational development (Spears et al., 2001). Channel expansion theory (Carlson & Zmund, 1999) suggests users' experience with EMC is also important: users experience with the medium, the conversation topic, the organisation and the group members will influence the richness of the communication.

These studies highlight many reasons to expect social support conveyed through EMC will be less effective, creating problems for teleworkers who face unfavourable job characteristics or work environment.

Studies of EMC in the workplace

Early research on EMC in the workplace highlighted its disadvantages as a means of social interaction. For example, Sproull and Kiesler (1986, p. 1509) found EMC allowed employees to avoid status and social context cues that might inhibit FTF communication, with both good and bad consequences. Amongst the negatives, EMC lead participants to behave irresponsibly more often than in FTF conversations, to use it more for sending *bad* news, and to prefer it for communications with superiors. Mann, Varey and Button (2000) point out the reduced emotional tone and intimacy of EMC will often affect the receiver negatively and ultimately increase stress.

Many studies have examined the effect of EMC on job satisfaction and organisational culture. Aysar, Phillip and Recascino (2006) found job satisfaction was not linked to the number of emails sent or received, or to whether an employee communicated with a supervisor primarily by FTF contact or EMC. Interestingly, the volume of emails between supervisors and staff did not vary when they were in the same or different geographical locations (in a multi-campus university), suggesting that EMC is not used to compensate for loss of FTF contact. This may indicate problems for teleworkers.

Morgan and Symon (2002) studied the use of email to socialise new or newly transferred employees, finding excessive use led to perceptions of managers as uncaring, feelings of detachment from the organisation and negative consequences for organisational culture. This may be an important issue if teleworkers new to their organisation or team cannot find FTF socialisation opportunities.

Other negative effects include a loss of emotional attachment to teleworkers' teams (Johnson, Bettenhausen & Gibbons 2009: 639). Konradt, Schmook and Malecke's (2000) review of the literature suggests regular FTF meetings are required to meet teleworkers' need for social contact, and O'Kane et al. (2007) suggest email networks do not reduce the need for frequent FTF interaction.

The role of EMC in workplace communications generally remains a neglected topic (Lowry et al., 2006). Although some suggest its disadvantages were overstated in early studies (O'Kane, Palmer, & Hargie, 2007), the evidence points consistently to a loss of social support in the absence of FTF contact. This suggests a serious issue for teleworkers.

Very little research has specifically examined EMC in telework. Mann, Varey and Button (2000) reported increased EMC accompanied by reduced FTF contact increased teleworkers' sense of isolation and decreased their perceptions of support. Golden (2007) found teleworkers having greater FTF interaction with co-workers demonstrated greater satisfaction with telework, and it is likely that their colleagues were also more accepting of the arrangement.

A consistent theme in the general and organisational studies reviewed above is that EMC has strong potential to lower social support.

H4: Higher levels of EMC and lower levels of FTF contact will further reduce teleworkers' perceptions of social support from supervisors and colleagues.

PERSONALITY AND GENDER AS MODERATORS

Two variables potentially moderating the relationships in H1-4 are personality and gender, both prominent in telework studies.

Personality and telework

Personality is a powerful predictor of individuals' reactions to many aspects of the work environment. For example, Spector and O'Connell (1994) found personality a sound predictor of reported levels of job stressors and strains. Spector, Jex and Chen (1995) found a correlation between two personality traits, optimism and anxiety, and occupation type. Whether personality affects the type of staff selected for different occupations, employees' choice of occupation or their response to the work environment was not obvious, but either way personality has important consequences for psychological wellbeing.

Other studies have examined the effect of personality on internet use outside organisations. Hamburger and Ben-Artzi (2000) found internet use correlated positively with Eysenck's neuroticism and introversion personality scales. In men, extraversion was associated with an increase in reported use of internet 'leisure services', and neuroticism with a decrease in reported use of 'information services'. In women, extraversion was negatively associated and neuroticism positively associated with reported use of internet 'social services'. More generally, Hertel, Schroer, Batinic and Naumann (2008) found extraversion and neuroticism predicted media preference such that introverted people and those who had high neuroticism preferred CMC over FTF. In contrast, Hills and Argyle (2003) found Eysenck's measures of extraversion, neuroticism and psychoticism did not predict internet use at work or home, and internet use was not associated with enhanced or diminished self-esteem, or with loneliness.

Self-efficacy theory provides a relevant theoretical lens on social support in telework. Self-efficacy is defined as the belief in one's capacity to meet the demands of life's situations and to choose an appropriate response (Bandurra, 1997). Stetz, Stetz, Melba, and Paul (2006) found self-efficacy and social support both significantly predicted psychological well-being. One aspect of self-efficacy, optimism, is known to moderate the effects of job demand and job control, and reduce self-reported anxiety and depression (Totterdell, Wood & Wall, 2006). Self-efficacy seems an important personality variable in telework studies given teleworkers' greater independence from office supports.

The only empirical study to examine personality in telework found it did not influence the choice to telework as teleworkers were primarily influenced by friends, neighbours and colleagues who reported good experiences of telework (Scott, Dam, & Wilton, 2012). If social support influences the choice to telework, participants may self-select as confident of their ability to create social networks.

While research on personality preferences for EMC in general is limited and somewhat ambiguous, extrapolating it to telework suggests more introverted and possibly neurotic people may prefer the seclusion of telework due to their lesser need for social support. High levels of self-efficacy are expected to increase psychological wellbeing by moderating the effects of work stressors.

H5: High levels of introversion and self-efficacy will reduce the negative effects of EMC on teleworkers' social support and psychological wellbeing.

Gender and Telework

Telework research frequently shows men and women have different experiences of working at home. This is in part due to different motivations, since gender is related to access to employment, level of employment and degree of autonomy over work and work-life balance. For example, Olson and Primps (1984) found females chose to work at home to assist with the demands of childcare, where males saw it as a personal preference unrelated to childcare. Males reported reduced stress from commuting, work interruptions and office politics, while both professional and clerical women found working from home *increased* stress. Many other studies find women telework to balance elder or child care (Crosbie & Moore 2004; Hill et al. 2003; Tietze, 2002; Konradt et al. 2000; Maruyama & Tietze, 2012)

Gender may also affect responses to telework. Lundberg and Lindfors (2002) found men and women had different *physiological* reactions to telework. Males showed significantly increased levels of epinephrine in the evening after a day of telework at home compared to the evening after office work. Possible explanations are that they continued working into the evening, or found it hard to switch roles without the transitional time provided by commuting, creating conflict between work and home roles (Ahrentzen, 1990).

Reactions to telework are also likely to be affected by differences in employment opportunity, pay and autonomy for men and women. For example, women's family care responsibilities make them more dependent upon 'special' arrangements that employers can exploit by offering lower status, salary and hours of work or greater workload than office-based colleagues (Olson & Primps, 1984).

The different motivations and experiences of men and women are fairly well established in the telework literature, and suggest women may have a greater need for social support to reduce stress and retain PWB than men, perhaps offset to some extent by a tendency for males to overwork.

H6: Women teleworkers will benefit more from social support than men.

CONCLUSION

Social support emerges as a critical but understudied aspect of telework. While its effects are well documented in the extensive literature relating organisational variables to psychological wellbeing, predicting its role in home-based telework is complicated by the need to account for both positive and negative effects of EMC, and by individual difference variables such as personality and gender that underlie motivations for and experiences of telework. Further, social support from both home and workplace may be important: how these combine is difficult to predict. Figure 1 summarises the predictions drawn from the studies above.

As mobile telecommunications grow in convenience and richness, telework is likely to become more desirable to employees and managers. Studies testing the hypotheses above, and developing more sophisticated frameworks for the technological, organisational, social and personal variables involved, will be important for guiding managers and employees towards embracing the opportunities of telework while minimising the potential negatives to employees' social inclusion and mental health.

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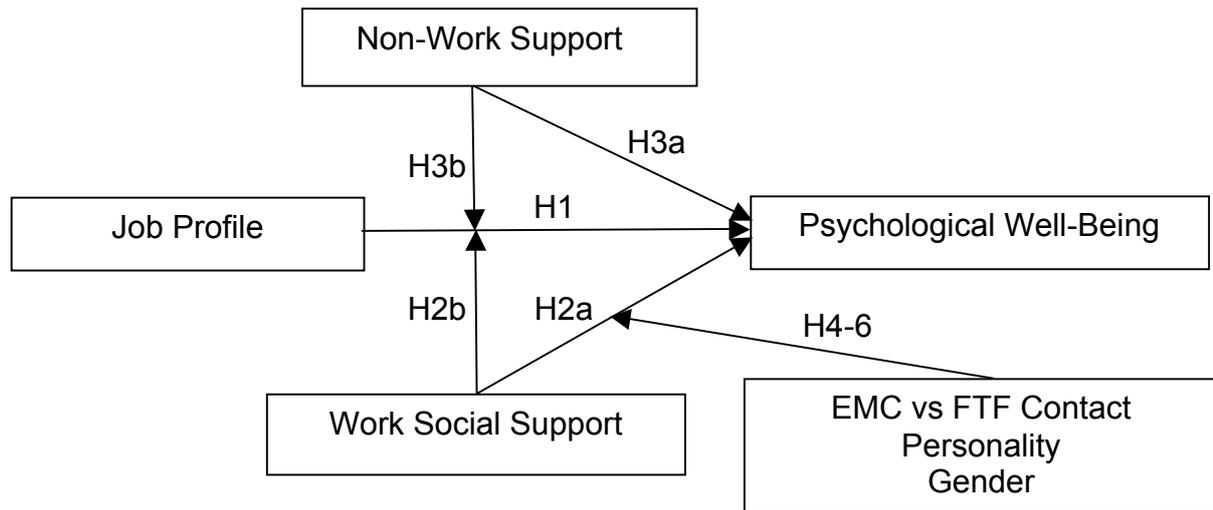


Figure 1. Framework for studying the effects of social support on teleworkers' psychological wellbeing.