



FUTURE OF WORK PROGRAMME

The Trans-Tasman Telework Survey



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Executive summary

Telework offers many potential benefits for organisations including productivity improvements, employee retention, and other forms of competitive advantage. The primary aim of this study was to examine manager and employee perspectives on telework productivity and wellbeing. The study surveyed almost 100 HR and team managers and over 1800 staff across 50 Australian and New Zealand organisations. Managers were interviewed on issues such as telework policy, processes, attitudes and outcomes, while organisational members were surveyed on-line on their telework experience, with a focus on support for telework, telework productivity, and wellbeing outcomes.

Most of our survey respondents were either *low-intensity teleworkers* (up to a day per week) or *hybrid teleworkers* (1-3 days). Hybrid teleworking was perceived by managers as representing an appropriate balance between the flexibility offered and the need for staff to be present in the office at least some of the time to interact with colleagues and connect with the organisation.

The study found strong evidence of the positive benefits of telework for both individual workers and their organisations. Among our sample, telework promoted improved productivity and satisfaction with work, with hybrid teleworkers performing better than those who do little or no telework. These conclusions were supported by findings from both the on-line survey, where teleworkers out-performed non-teleworkers, and from manager interviews, with managers expressing high levels of satisfaction with their teleworkers' productivity.

Some small negative effects were found for hybrid teleworking, notably higher perceived social isolation and strain/stress. These potentially negative impacts need to be addressed through the provision of organisational, peer and technical support, as each were shown in our analysis to reduce the negative impacts of teleworking on social isolation, stress, and work/family conflict, while increasing productivity and satisfaction. The study also highlighted the need for positive manager attitudes to telework and for improved technology training and ICT support.

Telework was a popular flexible work arrangement with our sample. Employees who teleworked rated the experience highly, with nearly three-quarters believing teleworking had a favourable influence on their overall job attitude, and fitted well with the way they liked to work. The large majority also felt telework did not interfere with coordination of work with co-workers.

In the majority of cases the telework arrangement was informal or ad hoc in nature, without written agreement to telework. This reflects the absence of formal telework policy in the majority of participating organisations. Study findings also suggested that organisations may not be applying effective telework management strategies as they did not keep records of who was teleworking and when, and were unable to measure and report the benefits of telework.

While teleworkers rated their work environment more highly than non-teleworkers, they reported significantly more ergonomics problems overall than non-teleworkers. These findings suggest some attention to the ergonomics aspects of the home office should be made by employers, and in particular the provision of either home office assessments or training for teleworkers on how best to achieve an optimal telework environment.

Given the many potential benefits of telework identified in this study and in previous research, it was surprising that most participating organisations failed to engage in any form of cost benefit analysis relating to telework, or seek to measure the positive benefits of this mode of working.

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1. Introduction

Telework (also called 'teleworking' or 'telecommuting') is defined as "...a flexible work arrangement whereby workers work in locations, remote from their central offices or production facilities, with no personal contact with co-workers, but the ability to communicate with co-workers using ICT" (Di Martino & Wirth, 1990). Telework is not new but it is only recently that this concept has become an attractive and viable organisational choice to support work. This can be attributed to recent developments in Information and Communication Technologies (ICT) (e.g. broadband Internet, mobile devices, social media, cloud computing, and networking tools), media publicity, and management awareness, which jointly encourage employees to participate in virtual work. Telework offers many potential benefits for organisations including productivity improvements, employee retention, and other forms of competitive advantage (Bosua et al., 2012; 2013; Harker & MacDonnell, 2012; Neufeld & Fang, 2005; Offstein, Morwick & Koskinen, 2010; Pyoria, 2011). Telework also offers opportunities to participate in global efforts to address environmental sustainability (Gani & Toleman 2006). However, even though there is a large body of research on telework, research that explores the link between individual productivity and telework is limited, despite speculations that telework arrangements can modernise workplace practice (Troup & Rose 2011). Indeed, such a study has not previously been undertaken in Australia or New Zealand, even though the Australian Bureau of Statistics reports that in June 2000, 430,000 people worked from home at least some of the time, while in NZ around 15% of organisations use teleworking for at least a proportion of their staff (Rasmussen, 2008).

In partnership with the University of Melbourne's Institute for Broadband Enabled Society (IBES), and funded by Cisco, this research aims to identify manager and employee perspectives on worker productivity and wellbeing, and on conditions under which productivity and wellbeing can be improved through telework. The study uses Australian and New Zealand workplaces as the study context. Such an understanding is important for three reasons: a) it helps organisations devise appropriate strategies to maximise the benefits of available technologies and tools supporting telework; b) it enables organisations to leverage productivity and well-being of teleworkers; and c) it promotes organisational contribution to environmental sustainability and reduces traffic congestion.

A recent pilot study undertaken by the Institute of a Broadband Enabled Society (IBES) from the University of Melbourne (Bosua et al., 2012; 2013) used interviews and daily experience recording qualitative techniques to determine the impact of teleworking on the productivity and wellbeing of hybrid teleworkers in the Melbourne region. While the measurement of productivity proved difficult in the pilot study context, the study produced valuable new data in the form of a set of themes relating to teleworking experience. These themes will be examined further in the proposed survey. Adopting the socio-technical systems approach (Belanger et al., 2012), the study seeks to examine the influence of person, task, technology, environment and organisational variables on a range of telework outcomes.

2. Method

2.1 Study design

The research used a mixed-method strategy, involving quantitative and qualitative components to examine the role of a range of factors identified through a pilot qualitative study undertaken by the University of Melbourne. The research followed a social-technical systems approach, based on a model by Belanger et al. (2012), and adopted this as a framework for its analysis, considering the role of a wide range of technological, social, environmental and organisational factors on telework use and outcomes.

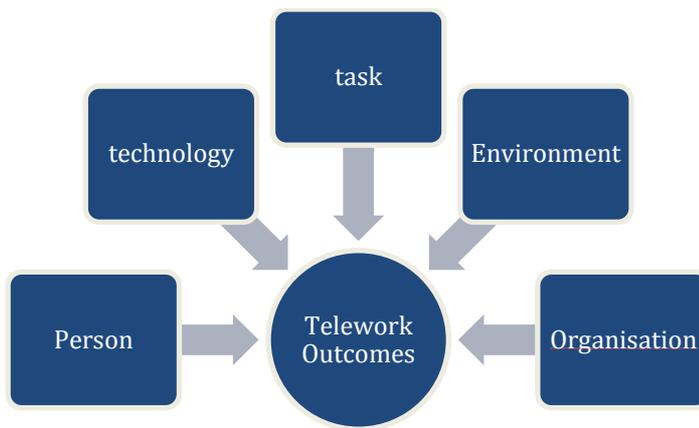


Figure 1. Socio-technical system study variable

The study of telework is very much in its infancy and theoretical models are not well developed. For this reason the research had an exploratory component.

2.2 Sample and Procedure

The study achieve a total respondent sample of 1827 individual respondents, from 50 participating organisations. A broad range of Australia and New Zealand organisations were surveyed, with respondents were drawn from many different occupational groups and from across many industries within public and private sectors, Industries less well suited to telework were excluded from the study.

Participating organisations were recruited through the partner databases and contacts of the NZ Work Research Institute, the Human Resource Institute of NZ (HRINZ), the University of Melbourne, and Cisco New Zealand and Australia. The human resource manager or another senior contact was approached at each organisation with a formal request to participate in the study.

Data collection procedure for the on-line survey

Within each organisation, requests to participate in the on-line questionnaire survey were distributed (via email) to staff. Surveys were completed on-line with responses being relayed directly to the researchers for analysis. Survey completion took no longer than 30 minutes and could be undertaken at any location where the respondent had access to the Internet.

Confidentiality was assured to respondents, with the participant information explaining that no individuals would be identified in any output from the study.

Data collection for manager interviews

We also conducted a telephone interview with the HR manager or appropriate person within the large majority of participating organisations to gather information on telework policy and practice within the organisation, and a further interview with a line-manager or supervisor responsible for a telework team where relevant. This allowed us to link our findings from individual respondents with those from the management interviews and examine policy, practice, productivity and wellbeing issues within organisations. In total, 45 HR manager interviews and 48 team manager interviews were conducted across the sample: 26 HR manager interviews and 25 team manager interviews were conducted in the New Zealand organisations, and 19 HR manager interviews and 23 team manager interviews were conducted in the Australian organisations. Each interview lasted for around 40 minutes. Interviews were recorded (with permission) and transcribed in part or in full.

2.3 On-line Survey tool

The on-line questionnaire survey tool included questions designed to examine the role of a range of people, technology, organisational and task factors on telework practice, productivity and wellbeing. Widely-used and validated instruments were used to measure constructs such as performance and productivity, stress/strain, organisational and social support, work-family conflict, and social isolation. The majority of questions were of a Likert-type format, requiring the respondent to indicate level of agreement with a statement on a 1-5 or 7 point scale. Three separate productivity measures were used to provide a broader coverage and increase confidence in study findings: telework productivity, overall productivity, and performance.

Where respondents indicated that they did not telework for their organisation they were not required to report sections of the survey specifically designed to collect data from individuals who teleworked.

2.4 Data analysis

Data analysis for the on-line survey

Analysis of the main questionnaire survey data included a full descriptive analysis of study variables, an exploration of relationships between study variables, and multivariate analysis to identify factors contributing most significantly to effective and productive telework and wellbeing among teleworkers. Analysis of variance (ANOVA) was used to determine differences in mean ratings for study variables between the two teleworker groups and non-teleworkers. Structural equation modeling was used to examine the relationship between variables included in an a hypothetical structural model based on social-technical systems approach to teleworking. The organisational/individual-level data collection allowed relationships between factors such as organisational policy and practice, management attitudes, teamwork factors, and telework productivity and wellbeing to be considered in the analysis.

Data analysis for manager interviews

Thematic analysis was conducted on the interview data. In the first stage of the analysis, the interview transcripts were divided among the researchers, who each read a number of the transcripts to identify any emergent patterns in the data. The entire research team then met to discuss these patterns in order to identify themes and subthemes that would form the basis of the subsequent data analysis. Four major themes, each comprising three sub-themes, were identified: high level, strategic and operational issues related to telework; organisational

systems for empowering line managers or supervisors of staff that telework; supportive infrastructure for telework; and telework outcomes. A comprehensive analysis of the interview data was then conducted in which the interview data were coded, categorised and compared across these themes and subthemes. The major findings of the qualitative data analysis were then collated, and compared across the New Zealand and Australian data sets. Representative quotes from interviewees in organisations in both countries were selected to support the findings and illustrate the dimensions of importance. The findings of this qualitative analysis were also checked for consistency with the findings derived from the quantitative data analysis.

3. Results: On-line survey

Study findings are presented in two main sections: the on-line survey of respondents from participating organisations (this Section), and the telephone interviews with managers from participating organisations (Section 4). Findings for Australian and New Zealand organisations are combined.

3.1 Participating organisations

Some 50 organisations agreed to participate in the Trans-Tasman Telework Survey. The participating organisations were based in Australia (n= 21) and New Zealand (n=29), and represented both the public and private sectors. Table 1 shows the distribution of participating organisations by organisational size, with 58% being large organisations.

Table 1. Organisational size of participating organisations

Organisational size category	Number of Australian organisations	Number of New Zealand organisations	Total
Large (≥ 200 employees)	12	17	29
Medium (20-199 employees)	4	4	8
Small (0-19 employees)	6	7	13
Total	22	28	50

3.2 Sample demographics: Participating individuals

A total sample of 1827 responded to the study, drawn from the 50 participating organisations. Some 46 % of respondents were female. The mean age of respondents was 30.3 (sd=10.7). Most (79%) were married or living with a partner.

Most respondents were full-time employees (87%), working a mean of 43.2 hours (sd=10.6) per week. The majority (90%) had permanent employment status. Respondents were most commonly non-managerial employees (60%), although the sample represented all organisational levels, with 9% first-line managers, 23% middle managers, and 8% senior managers.

Respondents were relatively experienced, with a mean of 5.8 years in role (sd=5.2). Some 89% worked in a team either all the time or frequently.

Table 2 shows the industry sectors most commonly represented in the study. While just over two-thirds of participating organisations came from four broad industry categories, a wide range of sectors were represented in the study.

Table 2. Sector representation in the Trans-Tasman Telework Survey

Sector	n	%
Financial and Insurance Services	510	28
Information Media and Telecommunications	472	26
Education and Training	237	3
Professional, Scientific and Technical Services	175	10
Administrative and Support Services	64	4
Public Administration and Safety	65	4
Agriculture, Forestry and Fishing	52	3
Health Care and Social Assistance	33	2
Other	219	20
Total	1827	100

3.3 Teleworker sample

This section details findings for respondents who reported that they teleworked at least some of the time for their current employer. Of the total study sample of respondents, 89% reported teleworking one or more hours per week. Most respondents had teleworked at their organisation for five years or less (69%).

The majority of respondents were either *low-intensity teleworkers* (less than eight hours per week teleworking: 35%) or *hybrid teleworkers* (1-3 days per week: 38%). Just 16% teleworked more than 3 days per week. The mean number of telework hours amongst the entire sample was 13 hours per week (sd=12.7).

The large majority of workers teleworked from home (85%) (Table 3). Most (77%) of the teleworking sample had an office or permanent workstation available at their employer's workplace, suggesting many organisations may have opportunities to reduce real estate costs through hot desking or workstation sharing approaches to save space where teleworking is occurring. A further 14% had a hot desk or office share arrangement.

Table 3. Location of telework activity

Telework main location	Proportion of telework sample (%)
At home	85
In the community	2
At a satellite centre or subsidiary office	4
At other businesses/organisations	4
Elsewhere (please specify)	5
Total	100

Few respondents had a written formal agreement with their employer to telework. Table 4 shows the breakdown of teleworking agreements for the teleworking sample, with the majority of teleworking employees relying on informal arrangements.

Table 4. Teleworking arrangements with employer

Respondents' telework arrangement with employer	%
I have written agreement from the organisation and/or my manager to telework (e.g. in your individual or collective employment contract or as a formal part of a contract for services)	22
I have verbal agreement with the organisation and/or my manager to telework	27
The organisation and/or my manager is aware that I telework but nothing is formally agreed	47
I telework without the knowledge of the organisation and/or my manager	3

3.4 Teleworker attitude to teleworking

Teleworkers predominantly expressed a positive attitude to telework. The majority of teleworkers either strongly agreed or agreed with the statement: *'Teleworking has a favorable influence on my overall attitude toward my job'* (71%).

Most respondents either strongly agreed or agreed with the statement *'Using teleworking technologies fits well with the way I like to work'* (73%). Importantly, many teleworkers felt that telework helped plan their work tasks more effectively, with more than one-half of respondents (58%) strongly agreeing or agreeing with the statement: *I get more of my priority activities completed when I telework.*

Telework did not appear to affect coordination with work colleagues, with just 4% strongly agreeing or agreeing with the statement: *'Teleworking causes problems coordinating work with my co-workers'*, and only 5% agreeing with the statement: *'Teleworking causes problems coordinating work with my manager'*.

3.5 Management trust in teleworkers

Perceived management trust in teleworkers was relatively high. Respondents rated their managers as confident in their productivity when teleworking and having trust in them to work effectively. For example, a large proportion of respondents strongly agreed or agreed with the statement: *'My manager doesn't think I slack off when I telework'* (64%). Similarly, most agreed or strongly agreed that: *'Overall, my manager trusts me to be productive while teleworking'* (70%).

3.6 Telework tasks

Table 5 shows the tasks most frequently engaged in while teleworking. Administration, writing, communicating, planning and project work were common activities while teleworking. Findings reported above on teleworkers' attitudes to teleworking (section 3.4) suggest that teleworkers seek to improve their efficiency by saving these activities for telework days.

Table 5. Telework tasks

Task	%
General administration	55
Report review and writing	45
Communications and conferencing	42
Planning and scheduling	40
Project work	39
Customer service	18
Collaborative teamwork	22
Management	16
Training and education	14
Research and development	13
Data processing and entry	9

3.7 Telework technology

The technology most commonly available to teleworkers included: email (89%); laptop or notebook (83%); mobile phone (76%); remote access to organisation's intranet (75%), broadband internet conn (69%).

The technology used for teleworking was bought or supplied by the respondent's organisation in 64% of cases. The costs of technology were shared between the organisation and the respondent in 19% of cases, and the respondent alone supplied the technology in 17% of cases. Broadband was provided by the organisation in 21% of cases.

Technology support was generally moderate to high. Some 55% of respondents strongly agreed or agreed with the statement: '*This organisation implements appropriate technology as it becomes available*', while 67 % agreed or strongly agreed that: '*Technical support from this organisation is available when I need it*'.

3.8 Telework training and support

Less than 50% of respondents reported receiving telework related training for most training areas listed in Table 6 below. Training was most often provided for security issues and least for running a home office.

Table 6. Telework training provided

Type of training provided	%
Using the teleworking technology	41
Running a home office	16
Occupational health and safety	34
Organisational communication	43
Technology troubleshooting and how to fix problems	35
Security awareness in teleworking	51

Technological support was rated across a range of support areas on a five point scale, where 1=never and 5=almost always. Teleworkers' mean responses were between 3 and 4/5,

indicating a moderate to high level of perceived technological support for telework. Highest rates were for helpful technology staff and lowest for helping the user solve the problem in case it recurred.

3.9 Health and safety problems: teleworkers and non-teleworkers

Just 8% of respondents reported experiencing pain or discomfort at work either constantly or often, with a further 33% experiencing these sometimes.

The major reported injury types experienced by the sample during the past 12 months were: occupational overuse (OOS) (12%), bullying or harassment (7%), and exposure to extreme heat or cold (7%). Most respondents (70%) reported no injuries during the past 12 months, and just 4% had taken time away from work due to injury or pain.

No significant differences were observed for injury and discomfort outcomes for teleworkers and non-teleworkers. Moreover, there was no difference in lost days to injury between teleworkers and non-teleworkers, and nor did the amount of teleworking undertaken affect injury reporting and lost time due to injury.

3.10 The work environment: teleworkers and non-teleworkers

Teleworkers rated their work environment more highly than non-teleworkers in terms of its impact on their productivity and work quality. Thus, significant differences ($p = <.001$) between teleworkers and non-teleworkers were observed for each of the following statements, with hybrid teleworkers having higher ratings than low-intensity teleworkers and non-teleworkers:

- *My work environment allows me to meet the expectations of my supervisor/manager in performing my job*
- *My work environment allows me to do high quality work*
- *My work environment allows me to complete work in a timely and effective manner*
- *My work environment allows me to improve my overall work performance*

A relatively large proportion of respondents reported unsatisfactory ergonomics aspects to their work environment (60%). Major ergonomics concerns were: thermal environment (hot, cold, damp, drafts) (39%); noise or vibration (20%); seating comfort (19%); and illumination and lighting (13%). Teleworkers reported significantly more ergonomics problems overall ($X^2 = 29.3$; $df = 2$; $p = <.001$) than non-teleworkers. Specific significant differences between telework groups were observed for the following aspects of the ergonomics environment, where teleworkers reported more problems:

- Thermal environment ($X^2 = 29.2$; $df = 2$; $p = <.001$)
- Noise or vibration ($X^2 = 26$; $df = 2$; $p = <.001$)
- Another aspect of your workstation design or set up (excluding seating comfort and VDU monitor): ($X^2 = 6.4$; $df = 2$; $p = <.05$).

3.11 Performance and wellbeing outcomes for teleworkers and non-teleworkers

Table 7 shows a comparison of mean outcome scores for the three productivity variables for the three telework groups: non-teleworkers; low intensity teleworkers (1-8 hours per week); and hybrid teleworkers (9+ hours per week). Teleworkers had significantly higher perceived performance, productivity and telework productivity than non-teleworkers. Post-hoc tests showed hybrid teleworkers had significantly better productivity outcomes than non-teleworkers or low intensity teleworkers, while low intensity teleworkers had better outcomes than non-teleworkers. The difference in mean scores for teleworkers and non-teleworkers for each variable (equating to between around 7-11% difference) are sufficiently large to suggest a meaningful practical productivity advantage for teleworking employees, and particularly hybrid teleworkers.

Table 7. Comparing productivity outcomes for telework groups

Variable name	Telework group	mean	Significance*
Telework productivity	no telework at all	5.5	.000
	Low intensity telework	6.2	
	Hybrid telework	6.3	
Productivity (general)	no telework at all	5.8	.001
	Low intensity telework	6.1	
	Hybrid telework	6.3	
Performance	no telework at all	5.3	.000
	Low intensity telework	5.6	
	Hybrid telework	6.0	

* The mean difference is significant at the 0.05 level

Table 8 shows teleworkers also reported significantly higher job satisfaction than non-teleworkers, with mean scores for the teleworker groups notably higher, suggesting a meaningful positive outcome in terms of the experience of work for teleworkers.

Social isolation, strain/stress, intention to quit and work/family conflict were significantly higher for hybrid teleworkers than other groups, although these differences were marginal in comparison to the 'positive' telework variables of productivity and job satisfaction.

Table 8. Wellbeing outcomes for teleworkers and non-teleworkers

Variable name	Telework group	mean	Significance*
Job satisfaction	no telework at all	5.1	.000
	Low intensity telework	5.3	
	Hybrid telework	5.6	
Social isolation	no telework at all	2.9	.008
	Low intensity telework	2.9	
	Hybrid telework	3.3	
Strain/stress	no telework at all	2.7	.001
	Low intensity telework	2.7	
	Hybrid telework	2.9	
Work/Family conflict	no telework at all	2.7	.000
	Low intensity telework	3.0	
	Hybrid telework	2.9	
Intention to quit	no telework at all	2.8	.005
	Low intensity telework	2.7	
	Hybrid telework	2.9	

3.12 Mapping the relationship between study variables

A statistically reliable path model (structural equation model) was produced to show the directional casual relationship between a range of support, moderator, and outcome study variables for the teleworking sample (Figure 2). The path model was conducted on data from teleworkers at large organisations only (i.e. data from respondents in SMEs and those in the no telework group were excluded). The total sample size for the path model was 1371 respondents.

Each path shown in the model supports our general study hypotheses, derived from a review of the international research literature on teleworking and a social-technical systems perspective. Hence, all three support variables (management support for telework; peer support; technological support) interact and together are important for increasing productivity and job satisfaction along with satisfaction with telework (positive coefficients on Figure 2), while reducing social isolation, work/family conflict and stress/strain (negative coefficients). Job satisfaction, which is increased by each support variable, is a moderator for stress/strain, while telework satisfaction, which is increased by management support and technological support, moderates overall productivity.

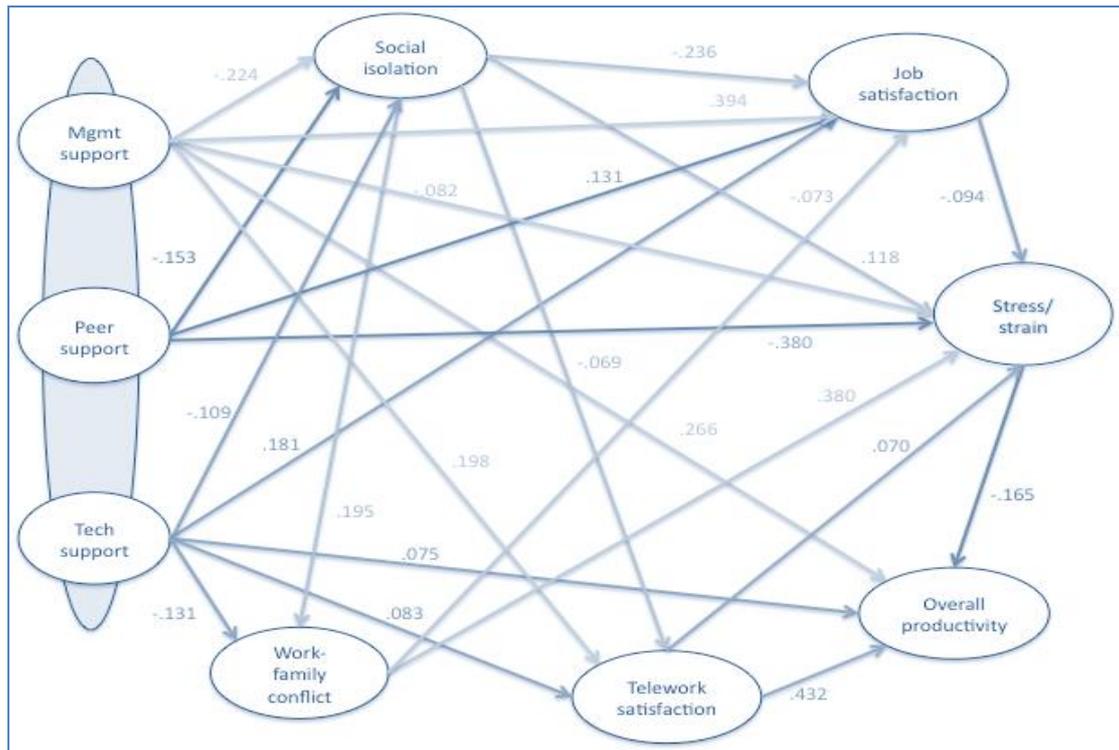


Figure 2. Path model showing directional causal structural relationships between study variables

4. Results: Manager interviews

The following passages provide an overview of findings from the qualitative component of the research study: interviews with HR managers (n=45) and team managers (n=48). Findings are presented under a number of emergent themes.

Table 9 lists the 14 themes from the qualitative analysis, noting the corresponding findings from the on-line survey reported in Section Three of this report. Each theme is then presented in more detail with illustrative quotes for each.

Table 9. Emergent themes from the qualitative analysis of manager interviews

Section sub-heading	Corresponding sub-section of on-line survey results	Theme
4.1		Formal policy on telework is rare
4.2	3.3	Ad hoc or hybrid forms of telework are most prevalent
4.3	3.3	While the majority of teleworkers do their telework from home, 'working from anywhere' is a growing trend.
4.4	3.3	Most people telework without a formal written agreement
4.5		Telework arrangements are typically negotiated between an employee and their manager.
4.6		Not all jobs or roles are amenable to teleworking
4.7	3.7	The cost of the technology and equipment to support telework is usually borne by the organisation
4.8		Significant security breaches involving teleworkers were not a concern
4.9	3.8	Telework related training for managers and employees is rarely provided
4.10	3.9	Teleworkers are expected to assume some responsibility for their own occupational health and safety (OHS)
4.11	3.5; 3.12	Technology is not a barrier to successful telework; the biggest barrier to successful telework is management trust and attitude to teleworking
4.12	3.11	Teleworkers exhibit increased levels of productivity and wellbeing
4.13	3.11; 3.12	Telework increases job satisfaction
4.14		Absence of telework cost benefit analysis

4.1 Formal policy on telework is rare

While there is a wide variation across sectors, organisational types and sizes, the majority of organisations did not have a formal telework policy. Often organisations that didn't have formal policies regarding telework were smaller in size or located in the voluntary sector:

"We are a small not for profit, we don't have a formal HR Department, so there are no policies covering telework."

Such organisations may face a lack of resources (including an HR function) and small numbers of staff, many of whom may be working part-time or as contractors for the organisation. In these instances, the contract is the binding agreement; where and when the work gets done depends entirely on the contractor:

"We don't have any formal [telework] arrangements ... The formal arrangements that we have are things such as within a contractor's supply agreement there are conditions around tracking time and how they invoice, and confidentiality, and that they provide their own technology."

However, organisational size is not necessarily a predictor of the existence of a formal telework policy. Some of the larger organisations did not have formal policies regarding telework, although the nature of the business is such that there is a strong expectation that most employees and managers should be teleworking:

"Everyone has the capacity to work flexibility, it is a given that it is the way work is done here."

"[I'm] not sure if telework is a formal policy, but it's definitely embedded in the organisational culture."

The public sector organisations we studied had formal telework policies in place or were intending to implement one. In many organisations where there was a formal policy, telework was often one aspect of a larger umbrella policy regarding flexible forms of working, including job sharing, reduced hours, special hours of work, and so forth, as one manager commented:

"It's wrapped up in to our flexibility programme ... and so it's kind of like our guiding principle on work flexibility and that includes part-time, condensed working week or fortnight, all that sort of stuff. And teleworking is just one of those avenues that you can work flexibly."

Where teleworking was included in organizational policies, the motivation seemed to be the need to formalise requirements and responsibilities around this mode of working as it becomes more prevalent in particular organisations:

"We have a working from home set of policies and procedures. It is formalised because basically we don't want people working from their kitchen tables. You need to have a proper set up for occupational health and safety reasons, and sometimes there are disputes about who pays for equipment, so a formal policy just clarifies some of those things."

"It's something that's evolving ... I think as it [teleworking] becomes more commonplace, we'll probably have to crystallise a policy and set some formal controls in place."

4.2 Ad hoc or hybrid forms of telework are most prevalent

In the organisations we studied, there were three main ways in which people engaged in telework. Less formalised or ad hoc approaches to telework included situations when employees have a sick child to care for and telework from home under these circumstances. In some cases, ad hoc forms of telework allow employees with an illness or injury to work from home in cases where they were unable to travel to work but were still fit to work. Other ad hoc forms of telework might include a manager working from home in order to meet an important deadline, or someone needing time and space to concentrate on work without the normal interruptions one would encounter in the office environment:

"Telework is done on an ad hoc or as needs basis here; for instance, if [workers] can't come in because they have a sick child, or if they request to have a work from home day."

"So I will work from home if I need to work on a conceptual paper or strategy. Anything that requires dedicated quiet time then I will certainly work from home and my manager is open to that, I think more open to that than when we first started".

A common form of ad hoc teleworking is extending the day by working from home or another location at the beginning and the end of each working day. This is prevalent among managerial staff who are able to take advantage of mobile and wireless technology:

"You've got people who extend upon the day. The benefit is where they would normally be putting in a 10 to 12 hour day at work as norm, because for our lot of our execs it's not in our eight-hour day, they are able to do that at home."

The majority of formalised telework agreements reflected hybrid modes of telework, where people work a maximum of two to three days away from the office. In most cases, this means working from home or working at a client or satellite office. In some cases, telework arrangements are agreed upon in order to satisfy an employee's need for flexibility:

:

"The majority of employees do some form of telework. A very basic thing is that employees don't have a dedicated work space here, it is a hot desking environment. I can choose to come into the office, or work from home, a cafe, a library. Because of this setup, people have choices about where they work. Many do telework once a week, sometimes more."

"Internal service-focused people ... might be based in the central city, [but] they might spend a day or week [out] on site using a hot desk, supporting the teams there."

"One of the guys in our team he always works from home on a Thursday and that's just due to his wife works late and he needs to pick up the children from school."

Hybrid teleworking is often perceived as representing an appropriate balance between the flexibility offered by telework and the need for staff to be present in the office at least some of the time to interact with colleagues and maintain a connection with the organisation:

"I believe a combination of telework and face-to-face is the best model."

"From my experience, telework is productive as long as it is mixed. So, I would never want to work remotely on a full-time basis. I need to have regular contact, face-to-face contact, with my colleagues."

The least prevalent mode is full-time telework. In most cases where this occurs, the organisations have field-based staff or have full-time teleworking teams where there are special circumstances. For example, some organisations introduced full telework arrangements for some staff in order to reduce operating costs. In other situations, organisations wished to retain staff who were moving to another area – rather than lose their skills and expertise, a full-time telework arrangement was negotiated:

"We do have people who work from home ... with our customer service team ... They go into the office one day a week for socialising and training and manager meetings and stuff like that, but the rest of the time they are working happily from home."

"To my mind, the full-time telework scenario comes from when somebody has provided significant value to the business and the business doesn't want to lose them in the event that they have a lifestyle change where they geographically go somewhere else."

There were a number of virtual organisations in our sample, where there is no physical office and everyone works flexibly and at a distance. In these cases, telework was simply a given, and anyone who works for such an organisation is a full-time teleworker by default. These are often small agencies or not-for-profit organisations:

"My current arrangement is that I have a home office, I have the space in my local town, and then I have [space] in another city – and these are both flexible co-working spaces. So that's my situation. My business partner in another city has a home office and then he has a permanent arrangement where he shares offices in town and uses those when required. And then our contractors are basically all home-based people."

4.3 While the majority of teleworkers do their telework from home, 'working from anywhere' is a growing trend

Anywhere working is a growing trend across most organisations in our sample, whether small, medium or large, and regardless of business type or sector. However, people work 'while they are moving, or on the go', such as when travelling by train or bus on a commute to work. In these 'working from anywhere' situations, handheld devices enable them to clear inboxes of email and respond to work-related text messages easily. There appears to be a growing trend towards forms of 'working from anywhere', including while travelling, visiting clients, or working from a satellite location, as opposed being limited to working from a home office environment:

“I’m one of those people, you know, the old slogan that ‘Work is something you do, not a place you go’. As long as the work gets done.”

“As a manager I would encourage my people to utilise flexible work techniques to optimise their outputs. So, my team is full of consultants and the idea of them being able to produce what they produce from home, from a client site, from a temporary site, from another office, is absolutely ubiquitous.”

4.4 Most people telework without a formal written agreement

While both formal and informal telework arrangements exist in the organisations that we studied, the majority of telework arrangements are informal and fluid in nature:

“The arrangements tend to be informal. We tend to take it as a personal choice.”

“There is nothing rigid. None of them have formal contracts that reflect the proportion of teleworking that they should or shouldn’t be doing.”

Often, these informal telework arrangements simply involve a conversation between an employee and a line manager. In some cases, individual employees have delegated authority to undertake ad hoc telework:

“It’s really based on an individual arrangement between each individual and their manager ... It’s really just a conversation between them. There really wouldn’t be anything on anybody’s file.”

“It would be on an ad hoc basis and it is not systematised with us ... We don’t have procedures or contracts around it. We don’t have teleworking positions that are designated as such, but if a manager or a senior manager needs to get on with the project and wants that to be done in a way so that they can work uninterrupted, then they can work from home to do that.”

However, in other telework arrangements, the basis of the agreement was still between an employee and a manager, except that it is formalised and becomes a signed record of that agreement. Often such written telework agreements will stipulate the hours and days to be worked, expected outputs, as well as terms for measuring performance.

“We do have formal arrangements. So if someone has ... got an agreement that says ‘I work four days a week and the hours are 9 to 3, and on every Tuesday I am working from home’, that would tend to be documented.”

“There would be confirmation of that in writing to the individual to confirm how that arrangement would work and what the review timescales are.”

Where organisations had full-time teleworkers, either because telework is a requirement of the role or the organisation has no physical office, then such arrangements tended to be formalised in the position description or employment contract:

"For the sales team it's formal. For the roles that are [across] split sites it is formal, because it says in the position description that they will work across sites."

"The telework arrangements are set up as part of people's contracts. It is formally included in the contract ... and the employment offer letter that we send to people when we are offering them a position certainly talks about a work from home position."

4.5 Telework arrangements are typically negotiated between an employee and their manager

Regardless of sector, organisational type and size, telework arrangements tended to be negotiated between an employee and a manager. Managers reported that it is usually the employee who initiates the proceedings by requesting the opportunity to telework in a either face-to-face or electronic conversation with his or her supervisor or line manager. The manager then assesses the request and its practicability. Once approved, it is then the manager's responsibility to monitor the telework arrangement and to measure teleworker productivity. In some organisations, a form-based request is made by the employee:

"You propose it to your manager and if your manager believes that it is suitable and it won't impact your deliverables, then it is approved ... It's more to do around that conversation with you and your manager."

"We have a telework application process and a template option that goes with it for any type of flexible work arrangements. To work from home people add that template with their proposal and it's reviewed by their manager and the executive director before it's approved."

Normally, HR was involved in the development of policy and procedures around telework, and only gets involved in setting up telework arrangements in an advisory capacity, if there is a problem, or if they are requested to get involved:

"Telework has been largely an agreement between a manager and an employee, initiated at the request of the employee. HR does not tend to get involved in these situations."

"Obviously if the manager wants to discuss the possibility of something that might be a little bit left field, like a permanent telework five-day week kind of thing, they would discuss it with their HR advisor. But other than that, we have empowered our managers to make the decision themselves."

"Our interventions have really been in assisting managers when they run into trouble managing that situation because it's got a little bit out of control."

This means that managers bear much of the responsibility associated with assessing requests to telework, and ensuring that telework arrangements run smoothly and that the work gets done:

"The agreement between the manager and the employee is fundamental to a successful [telework] arrangement."

"Managers approve telework arrangements and monitor performance, so a lot of responsibility for telework falls on managers and supervisors."

4.6 Not all jobs or roles are amenable to teleworking

While the HR manager of one large private sector organisation asserted that there is no job in their organisation that cannot be worked flexibly, this does not mean that all jobs are amenable to teleworking from home. For example, many managers perceive that jobs with a significant face-to-face component cannot be teleworked in the traditional sense. Similarly, where a specific role is perceived to be 'desk-bound' or requires specialist infrastructure, teleworking is not regarded as feasible:

"There's obviously people in the retail branches ... [that] can't telework because of their roles and because they are in a branch. You can't get customers coming to your house."

"The team that tend not to do it regularly will be the likes of accounts payable, the processing guys who tend to be in the office doing the work next to the finance system."

"We have a couple of operations centres, so they are absolutely bound to that area, because that's about [using specialist equipment]. So that couldn't be done from home or anywhere else."

One manager expressed concern about sub-cultures of 'those who can telework and those who cannot' developing within workplaces; these issues can sometimes create a divide where resentment builds up against those who have a telework arrangement allowing them to work from home:

"There is a bit of a sub-culture that develops in some work areas when some people are not able to work from home – some resentment develops towards teleworkers if they don't have a flexible work arrangement themselves. Sometimes people are reluctant to contact teleworkers at home because they prefer to speak to them face to face. Sometimes it can turn into a divide between those who can telework and those who can't."

Other managers commented that significant thought should go into deciding to what extent a job role can be teleworked successfully. A number mentioned the need to be aware of any potential impacts on the teleworker's team or the wider business:

"There is a responsibility on those that are not in the office to make sure that they do communicate with the wider team as well. so that the team is actually aware of what they are doing too. What we don't want to happen is that a whole lot of things to be starting to happen in isolation and the team not being aware of what other people are doing."

4.7 The cost of the technology and equipment to support telework is usually borne by the organisation

In most organisations, regardless of size, the standard technology used to support telework usually consists of a laptop computer and a smart phone, so in most cases the actual costs of technology are not prohibitive. In smaller organisations, it is often the employee or contractor who bears the cost of the technology and equipment to support telework. Some organisations pay an allowance or a set fee (per month or a per diem) to cover technology or set-up costs for employees. In larger organisations, the issue of who bears the cost is often determined by the seniority of the position, or by the perceived needs of the job role. Managers and mobile workers are unlikely to bear their own costs of technology. Similarly, the organisation covers all the costs where staff are required to telework full-time. :

"Everyone has remote access, if anyone calls your office phone it automatically goes to your mobile, but mobile and laptops are paid for by the company. Everyone's phone is also connected to email, so they don't even have to carry a laptop around."

"They were hired specifically to work from home ... We set up their whole home working situation and their computers, their broadband access, and all that kind of thing. So that takes quite a lot of technology to do that because they need to be able to access specific online tools and complex data bases and things like that."

Many organisations supported a BYOD environment, with iPads and other tablet devices being extremely popular. Often the use of BYOD devices involves a sharing of the costs between the individual and the organisation:

"People have been using their own devices, I use my own computer at home. We have mobile phones and smart phones if you like and we can access people, directories, emails so these are the main sort of pieces of [IT] equipment".

"The individual pays for the iPad but the organisation will pay for the applications on that, that you need in terms of working remotely."

In some organisations, home Internet access is considered to be an individual cost, particularly when the telework arrangement is at the request of the individual. However, other organisations provide separate dedicated landlines for employees who telework full-time, while a few organisations that required their staff to be connected to the Internet all the time invested in high-end Internet access and support for their staff as one organisation mentioned:

"We channel the client technology so that we can provide dedicated bandwidth so when they [teleworkers] are working from home they not using any quota, it [the Internet] is actually free".

4.8 Significant security breaches involving teleworkers were not a concern

Security breaches involving teleworkers did not appear to pose a problem, with most organisations reporting that their systems were robust and well protected. Minor reported issues typically involve the loss or theft of equipment:

“We have worked fairly heavily to have a secure and stable environment. We are comfortable that we got some good systems and processes and the behaviour of staff around teleworking has been solid.”

“The only thing we have had is laptops stolen or vehicles broken into and equipment stolen. So that just heightens the need for our systems to be robust, and encryption, and things not stored on machines that are not backed up.”

Interestingly, in some organisations, the IT function had remote control of particular teleworking devices that enables them to manage the security risk to the organisation in the event the device is lost or stolen:

“All our devices have software on them, security software that allows us to remotely lock and shut down the device ... We’ve got full control of that device remotely, basically ... What we are more interested in is ‘If someone loses it, can we shut it down?’ and we wipe it.”

The security around remote access to an organisation’s systems was handled in a number of ways. For example, some organisations constrain access to sensitive systems:

“[Security is not a concern] for our systems because people cannot get into our systems, they cannot download anything on the system. If they go and look at customer accounts they need to perform ID checks and they cannot go further ... so it’s all done through the VM software to make sure that there are no security issues”.

Most large organisations prefer secure VPNs to enable their teleworkers to access content remotely:

“We have what I would describe as VPN access, whereby you have got to use some sort of authentication login and password and have the appropriate applications installed on your machine to be able to get to it ... and a Citrix connection in order to tunnel into the company systems to get documents off the document management system.”

In cases where organisations have to work with confidential records and other forms of data, employees receive training on how to handle this correctly in line with company IT security policies and/or procedures:

“We have an IT security team that is actually doing the whole thing and IT security policy ... We are very aware of confidentiality or sensitivity [of information] and we know that and say to each other this is pretty sensitive information, we remind one another to be cognizant of what IT security has been developed”.

4.9 Telework related training for managers and employees is rarely provided

Training specifically related to telework was not provided to either managers or employees in the majority of organisations studied. The exceptions tend to be where specific roles or an entire team are classified as teleworkers and training is provided to all personnel involved prior to commencement of the new arrangements:

"Field staff actually come down and they actually have a week of induction, a solid week, around everything from learning how to do it, about working from home, their OSH, our obligations and their obligations, and just that whole thing of working remotely, away on their own."

In most other cases, teleworkers undertake the same training as non-teleworkers. Such training is often web-based, so that access to it is not restricted for teleworkers. Most training involves generic information about the use of IT tools and other technology required for the job. While larger organisations generally provide a broad range of training and IT support, in some smaller organisations and fully virtual organisations, very little training, if any, is provided, other than basic induction and updates as required. Many managers feel that training is not really necessary as most workers are already IT literate or are familiar with the technology and systems in the office-based component of their roles:

"We haven't had [training] for telework. People know enough of the work they are doing, so it's just another place with a similar looking look and feel."

"We are all OK with that [training] if you remotely access our services, you use the same software programs that everybody uses, so the standard training is enough. We have couple of IT staff and they are available or able to assist teleworkers with IT issues as well as people in the office."

Very few organisations provided any training for managers with regard to telework, perhaps with the exception of offering a one-off training session on how to manage flexible workers. Some organisations expressed a desire to provide more support for managers in the form of sharing of best practices, and keeping managers up to date on any relevant policies or OH&S requirements specific to telework. Some concern was raised in public sector organisations about managers being rather traditional and conservative, lacking skills specific to managing workers who are not office based:

"Older managers don't seem as comfortable with managing in a flexible environment, but HR spends a lot of time empowering managers to work effectively in a telework environment. We should provide some induction across the board for managers and employees, but at the moment all we provide is some training material on the web regarding telework, but I'm not sure how many people actually access it. Best practice means that we should ensure that everyone has exposure to this training and preparation for teleworking."

4.10 Teleworkers are expected to assume some responsibility for their own occupational health and safety

In smaller organisations and not for profit organisations without formal policies, teleworkers assumed full responsibility for their own occupational health and safety (OHS). In some of these cases, employees often telework on a continuing fractional basis, or they are employed as contractors. A small number of organisations proactively conduct formal OHS assessments of their employees' teleworking environment. Typically, this is for full-time teleworkers:

"The three [employees] that are [tele]working permanently is obviously very formal. All forms and people coming in from OH&S and looking, and we go in and inspect where they are going to be working, and so on and so forth. And also the field staff,

we have their places are assessed for health and safety, and provide desks and chairs and stuff like that."

In most other cases, the organisation provided some OHS training or guidelines, which the employee is expected to follow. In some organisations, employees are required to fill in a self-check OHS assessment form. In others, an individual teleworker can request a workplace assessment, which is provided by the organisation. Some managers expressed concern about people working 'on the go', for instance, working on the train on the commute to work, or out seeing customers:

"One of the key drivers around the formalisation of OHS arrangements is to make sure that [workers] are safe. There is a form and people have to take responsibility for their own OH&S. There are still concern about people working in transit, working on the go, but if they are free to work anywhere, then they should assume some responsibility for their own health and safety."

"Employees who telework have to fill in a self-check OHS form, and we encourage employees to take a photo of their home office arrangement. The requirement is that the work space at home is reasonably consistent with the workspace at the office, mostly to ensure worker safety and to avoid work cover claims."

"You went down the checklist and you would check it yourself. If it is causing you a strain, you can actually ask for a health and safety person to come and check out your setup."

Some managers indicated that they expect their teleworkers to be aware of general health and safety aspects associated with working from home, although others acknowledged that they rely on the honesty of teleworkers in doing so or performing OHS self-assessments:

"I am alerted to [OH&S] so I am thinking of the legal requirements. Staff need to know wherever they work they need to be safe ... So basic sensible sort of things, but there is no requirement for me to have an inspection or go in."

4.11 Technology is not a barrier to successful telework; the biggest barrier to successful telework is management trust and attitude to teleworking

Managers appear to bear a great deal of responsibility in terms of assessing feasibility, approving and monitoring telework arrangements. Indeed, managers, their attitudes and their relationships with employees seemed to be crucial elements influencing the success or otherwise of telework arrangements. Managers were often perceived as lacking the necessary attitudes or skills to promote and successfully manage telework:

"Technology is no longer a barrier. The biggest barrier is management and the trust component. Many managers have a need to watch people working, they are fixated on presenteeism – this is not a measure of engagement or productivity."

"The culture of a government organisation means that many managers are old fashioned and they want to see people in the office, so changing the culture is the biggest challenge to implementing telework here."

"Managers need to develop skills and capabilities around managing teleworkers ... They need to ensure the work is being done without looking over people's shoulders all the time."

Some concern was expressed about employees lacking the necessary skills to enable successful telework:

"Technology is not a problem, things like communication and management skills are more critical to successful telework."

"Although most roles can be teleworked, I'm concerned that the staff don't have the necessary upward management skills required to take responsibility and manage themselves, communicate effectively and handle the work in a timely manner ... Their lack of skills in these areas means that productivity suffers and the timeliness and quality of getting information is also affected at times."

However, the importance of teleworker autonomy was more widely mentioned. Many managers emphasized the need for teleworkers to be responsible or accountable, and to be productive and achieve agreed outputs. Others commented on how their teleworking employees expected to be given autonomy and be managed by results:

"Telework is not suited to micromanagement. The worker needs some autonomy in terms of what they do and how they do the job. The focus should be on meeting targets and goals, outputs, rather than focusing on how they are doing the job."

"Successful teleworkers have to self-starters, independent and self-disciplined, and expectations between employees and managers have to be clearly communicated. This way it doesn't matter where or when the work gets done, it's about the outcome as per the agreement."

"To be trusted, to be allowed to do their own thing. They [teleworkers] accept that there are limits on that but they get a lot of freedom. And that's what they've come to expect."

Across all the organisations, there was a strong feeling that trust was an integral element of the teleworking arrangement. Managers with significant experience of managing teleworkers asserted that it is important to trust their workers to do a good job, and that it is a matter of good management to make sure that this occurs.

"[Telework] works well here because there is a high level of trust between managers and employees. Managers trust the employees to get on with their jobs, whether they are working in the office or from home. Trust relationships are strong between managers and their employees, it flows down from the CEO who sets the tone and supports flexible work."

"Managers have different styles, some empower their employees a lot, others are more micromanagers. Trust is important, you have to be able to trust your teams to do the job."

The emphasis placed on trust in relation to teleworking is reflected in the low reported incidence of electronic monitoring of teleworkers:

"We assume that people are actually working. We trust them that they are going to get the work done that needs to be done. We are not going to check what time they are logging in and logging off."

"We operate a high trust environment and so far we haven't been let down on that ... Because we're in a high trust relationship with our employees, we don't want to be having checking systems in place where they have to punch in and out."

"We don't monitor or track anybody, but people are aware that they can be tracked when working. I generally believe that most people do the right thing. The fact that people are so grateful to have the flexibility means that they don't abuse it."

4.12 Teleworkers exhibit increased levels of productivity and wellbeing

Across the board, managers reported better work outcomes for people who telework. There seems to be a view that the ability to telework creates a happy worker, which in turns yield productive outcomes:

"There is a strong link between happiness and productivity".

"A large focus of the organisation is to ensure that we have an engaged and happy workforce. And it's important from a productivity perspective."

"I think people's well-being is important and I think teleworking is part of the work experience. Actually, I'd turn it round the other way and say that teleworking is often a contributor to the well-being of individuals."

Overall, managers expressed high levels of satisfaction with the productivity of their teleworking employees. Managers themselves reported increased productivity and wellbeing when teleworking, although most managers teleworked to a lesser extent than their employees.

While few negative issues regarding productivity and wellbeing were raised by the managers with whom we spoke, some concerns were raised about potential effects such as social isolation, work-life imbalance, overwork and stress, and other health and safety related issues:

"There are some health and safety concerns around telework though. We do worry a bit about people getting isolated. The stress and fatigue factors are of concern, but we are trying to find a good way of finding out how much people are working, if they are overworking."

"Work and life are more blended together in a telework environment, so they might run the risk of working too much, or feel they are working all the time, even skip meals."

"You can end up working too much. It's too easy to get caught up in it. You need to be focused and self-disciplined."

Managers indicated that some effort is required to ensure that telework tasks are agreed upon, followed up and completed by the teleworker. This is often challenging when the employees are full-time teleworkers:

“The challenge with guys working from home is the communications and what they need to know and I need to know ... It is harder than obviously walking up and speaking to somebody”.

“I guess the thing I miss is that kind of ‘management by walking around’ type concept – a bit hard to do when they’re based all over the country. So you have to actually make a conscious effort to, both when you need for a specific thing, but also at other times, pick up the phone and call people.”

Where a problem with a particular teleworker’s productivity does arise, this is followed up by the line manager and discussed with the person concerned. In some cases, teleworking employees who are not performing to the agreed standard are asked to cut back on telework arrangements and spend more time in the office:

“At the end of the day it is about the deliverables, so if you are not delivering, you might need to revisit that situation to see why not.”

“If somebody is struggling to meet their stats [quota] then quite often they need to come in to the office and work in the office for the next two to three weeks to see the impacts before it [telework] is accessible [again] ... So if your stats drop, you go back into the office”.

4.13 Telework increases job satisfaction

Managers suggested that the opportunity to telework is valued by many employees and that teleworking is instrumental in increasing their job satisfaction, and thus their overall engagement with the organisation. Frequently, this is attributed to the flexibility and work-life balance that telework can offer:

“Work-life balance has been more positive for home-work staff. They don’t have to travel and all those type of things. We accommodate that.”

“They value it because they like the flexibility ... It allows them to have more home life to do private stuff.”

“Certainly, from an engagement perspective, I think it’s been really positive, that we have been able to accommodate individual needs around that. Where it is being driven by the individual or initiated by the individual, there’s much better engagement, which again does produce better productivity in the long term.”

“I think it improves productivity and I think it improves personal satisfaction. And I think that the net effect is to improve engagement between the individual and the business and most importantly make the individual think that the business cares about the individual, which is one of the key motivators for anybody.”

Managers reported that teleworkers reported higher levels of job satisfaction on employee surveys. There was also less absenteeism among those who teleworked; in some cases, people getting over an illness were happy to work from home rather than come into the office. In other cases, people who teleworked reported getting sick less frequently by avoiding long commutes on public transport. Many people reported that they were happy to telework through their normal commute time (up to 90 minutes each way a day), simply because they were able to avoid the stress of the commute to work and back. The ability to work flexibly was particularly appreciated by employees with caring or other family responsibilities, who found it crucial to achieving balance between work and other commitments.

Some managers directly credited telework as a main reason for their organisation's ability to attract and retain talented staff, especially where there are industry shortages or as part of the organisation's commitment to workforce diversity:

"Teleworking is part of our attraction strategy, which is part of our people strategy. We believe that in the tight markets ... teleworking will give us an advantage."

"I remember very clearly, seven years ago our particular industry was very, very short of qualified staff and a clearly enunciated decision was made that returning mothers were a particularly useful and untapped source of very organised, very well-managed, highly intelligent, highly motivated workers in our industry but that we would have to change our work practices to be more flexible to be able to attract them."

4.14 Absence of cost benefit analysis in relation to telework

Few organisations had engaged in any form of cost benefit analysis relating to telework. One fully virtual organisation prepared an extensive calculation to identify savings relating to office space, electricity, transport and emissions costs as a means to justify their business model. Other organisations calculated savings from reducing the amount of dedicated office space by moving to a hot desking environment and encouraging more telework. Many organisations reported a desire to engage in more formal calculations regarding costs and savings related to telework:

"We haven't been very systematic about that [calculation of savings] ... We haven't gone down that path yet".

"As we refresh operations generally we are doing a bit of cost-benefit analysis, we are going more to hot desking, taking up less office space and going to hybrid forms of telework."

So far we have done an informal cost benefit analysis around telework, looking at cost savings of office space, and gains for employees around flexibility. Costs of staff retention have been reduced, as some employees who have had to move interstate for personal reasons were able to remain with us."

5. Discussion

This study has found strong evidence of the positive benefits of telework for both individual workers and their organisations. **The key study finding is that telework promotes improved productivity and satisfaction with work, with hybrid teleworkers performing better than those who do little telework.** These conclusions are supported by findings from both the on-line survey, where teleworkers out-performed non-teleworkers, and from manager interviews, with managers expressing high levels of satisfaction with their teleworkers' productivity. Moreover, managers noted that teleworkers score more highly on engagement surveys and have less absenteeism than non-teleworkers. Additionally, some managers directly credited telework as a main reason for their organisation's ability to attract and retain talented staff, especially where there are industry shortages or as part of the organisation's commitment to workforce diversity.

Importantly, the differences in mean ratings of productivity and performance between teleworkers and non-teleworkers are sufficiently large (7-11%) to suggest a meaningful, practical difference in the potential productivity outcomes for effectively managed telework. Our findings are in line with those from the international telework literature (e.g. Bosua, 2012; 2013; Pyoria, 2011), with triangulation of data on individual and manager perceptions and experiences offering strong evidence of teleworking effectiveness across our sample.

While there is some evidence of reduced wellbeing impacts for hybrid teleworkers in particular, the difference in ratings for these variables was markedly smaller than for the positive telework variables (productivity and job satisfaction), suggesting relatively small negative effects. These negative impacts, notably social isolation, strain/stress, and work/family conflict, need to be addressed through the provision of good organisational, peer and technical support. In line with the socio-technical systems model that underpins our study (Belanger et al., 2012), these three lines of support were shown using path modeling (SEM) to reduce the negative impacts of teleworking on social isolation, stress, and work/family conflict, while increasing productivity and satisfaction. The implications of these findings are that organisations should seek to ensure their managers responsible for teleworkers have positive attitudes to telework and are supportive of teleworkers' needs. Moreover, adequate technical support should be provided to teleworkers. Indeed, the study suggested teleworkers were only moderately happy with the technological support they received, with less than one-half receiving telework training. This suggests an area for attention and improvement as organisations seek to extend and formalise their telework arrangements.

Data from manager interviews and the on-line survey strongly indicate that telework is a common arrangement within our study organisations. In the majority of cases this arrangement was informal or ad hoc in nature, however, without written agreement to telework. This perhaps reflects the absence of formal telework policy in the majority of participating organisations. Moreover, this finding suggests that organisations are not applying telework performance management strategies, as they do not keep a record of who teleworks in their organisation, and are not able to measure and report their economic, social and environmental contributions through telework arrangements.

Most respondents had teleworked at some time either formally or informally for their current organisation, with nearly 90% doing some weekly telework. Most of our survey respondents were either *low-intensity teleworkers* (Less than eight hours per week

teleworking or *hybrid teleworkers*, with just 16% of respondents teleworking more than three days per week. Hybrid teleworking was perceived by managers as representing an appropriate balance between the flexibility offered by telework and the need for staff to be present in the office at least some of the time to interact with colleagues and maintain a physical connection with the organisation. Hybrid telework also resulted in increased perceived performance, productivity and job satisfaction, suggesting that hybrid telework may be the best model for organisations to adopt.

Telework is a popular flexible work arrangement with staff. Employees who telework rated the experience highly and their attitudes to telework were generally positive. Nearly three-quarters of teleworkers in our sample believed teleworking had a favourable influence on their overall job attitude, and fitted well with the way they liked to work. The large majority also felt telework did not interfere with coordination of work with co-workers or their manager. Indeed, teleworkers reported higher job satisfaction than non-teleworkers, with highest reported levels of satisfaction for hybrid teleworkers. Managers believed that teleworker productivity and retention in particular were related to the opportunity to telework. These findings have important implications for organisations as they add support to the view that telework can form part of an effective employee retention and engagement strategy.

Concerns are often expressed about the quality and safety of telework environments, particularly the home office. However, in our study, teleworkers rated their work environment more highly than non-teleworkers in terms of its impact on their productivity and work quality.

Ergonomics aspects of the telework environment were reported less favourably than for non-teleworkers. Teleworkers reported significantly more ergonomics problems overall than non-teleworkers. Specific differences between telework groups were observed for the thermal environment (*heat, cold, damp, drafts, etc.*), noise or vibration, and the workstation design or set up (excluding seating comfort and VDU monitor). These findings suggest attention to the ergonomics aspects of the home office should be made by employers, and in particular the provision of either home office assessments and/or training for teleworkers on how best to achieve an optimal physical work environment.

Health and safety while teleworking is often expressed as a concern for organisations, and particularly the issue of the employer's duty of care and where responsibility for health and safety lies in regard to remote workers. The concern that telework results in more injuries was not supported by this study, with no significant differences in overall injury and lost time reporting for teleworkers. Organisations did appear to have some effective protocols for managing the health and safety of teleworkers. Managers reported that in most cases the organisation provided some OHS training or guidelines, which the employee is expected to follow. In some organisations, employees are required to fill in a self-check OHS assessment form. In others, an individual teleworker can request a workplace assessment, which is provided by the organisation. These OHS practices will assist in promoting healthy and safe remote work, and should be formalised within the wider OHS management system within organisations engaged in telework.

Technology support for teleworkers was rated as moderate to high by most survey respondents. Telework efficiency and productivity was limited in some cases by broadband availability, with just 69% of teleworkers having access to broadband. While teleworkers most often supplied their own broadband internet connection, the technology hardware was most often supplied and maintained by the organisation. Telework-related training was provided by

organisations in less than 50% of cases for most training areas. The finding that few teleworkers received training for setting up a home office was of particular concern given the ergonomics and workstation problems encountered by teleworkers.

Given the many potential benefits of telework identified in this study and in previous research, it is surprising to find that most of the participating organisations failed engage in any form of cost- benefit analysis relating to telework, or seek to measure the positive benefits of this mode of working. For example, over three-quarters of our teleworking sample had a regular office or workspace allocated for them when not teleworking. These findings suggest that participating organisations may not have been realising the benefits from office space savings that telework can provide through office sharing and other such arrangements.

On the positive side, many organisations reported a desire to engage in more formal calculations regarding costs and savings related to telework. This indicates a need to develop or better promote tools that are designed to measure the social, economic and environmental contributions of telework to the organisation and wider society (Gani & Toleman 2006). This information will better inform organisational strategy with regard to investment in extended telework arrangements and provide important information to inform triple/quadruple bottom line reporting.

In conclusion, this study has provided further evidence of the effectiveness of telework in promoting improved productivity and satisfaction with work, particularly for hybrid teleworking. This mode of working seems to provide the right balance of individual and organisational flexibility while maintaining opportunities for face-to-face interaction within the workplace. However, to realise these benefits organisations must provide the necessary management, peer and technology support to advance productivity and reduce the potentially negative impacts on social isolation and employee stress. Finally, organisations should develop appropriate telework policy and effective telework management approaches, and seek to measure the social, economic and environmental contributions to the organisation and society.

6. Implications for management

Our findings provide further evidence that telework can enhance productivity and job satisfaction in organisations. However, these benefits will be most evident where the organisation provides the necessary support for telework, including supportive manager attitudes, peer support and technological support. Support will also help reduce any potential negative impacts from social isolation, work family conflict and stress.

Management should:

- Ensure regular assessments of teleworking arrangements, contracts and policies to deliver best outcomes from management and teleworker perspectives
- Provide adequate training for teleworkers and managers of teleworkers
- Offer support in setting up a home office, where applicable
- Deliver adequate technology/ICT support for teleworkers
- Provide excellent support for teleworkers from their line managers
- Measure and report the social, economic and environmental contributions of telework to the organisation and society.

References

1. Belanger, F., Watson-Manheim, M., & Swan, B. (2012). A multi-level social technical systems telecommuting framework. *Behaviour and Information Technology*, 1-23.
2. Bosua, R., Gloet, M., Kurnia, S., Mendoza, A. (2012). Telework, productivity and wellbeing. Institute for a Broadband-Enabled Society, University of Melbourne.
3. Bosua, R., Gloet, M., Kurnia, S., Mendoza, A., and Yong, J. (2013). *Telework, productivity and wellbeing: An Australian perspective*, *Telecommunications Journal of Australia*, 63(1), in press.
4. Di Martino, V. & Wirth, L. (1990) Telework: a new way of working and living, *International Labour Review*, 129(5), 529-554.
5. Gajendran, R.S. & Harrison, D.A. (2007). The good, the bad and the unknown about telecommuting: Meta-analysis of psychological mediators and individual consequences. *Journal of Applied Psychology*, 92(6), 1524-1541.
6. Gani, Z. & Toleman, M. (2006). Success factors and barriers to telework adoption in e-business in Australia and Singapore: the influence of culture and organisational culture.
7. Harker M. B. & MacDonnell, R. (2012). Is telework effective for organisations? A meta-analysis of empirical research on perceptions of telework and organisational outcomes. *Management Research Review*, 35(7), 602-610.
8. Neufeld, D. & Fang, Y. (2005). Individual, social and situational determinants of telecommuter productivity. *Informational and Management*, 42, 1037-1049.
9. Offstein, E., Morwick, J. & Koskinen, L. (2010). Making telework work: leading people and leveraging technology for competitive advantage. *Strategic HR Review*, 9(2), 32-37.
10. Pyoria, P. (2011). Managing telework: risks, fears and rules. *Management Research Review*, 34(4), 386-399.

