Future Work Design Phase 2

Exploring the value of digital tools in promoting healthy working practices: an experimental study

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futureworkdesign

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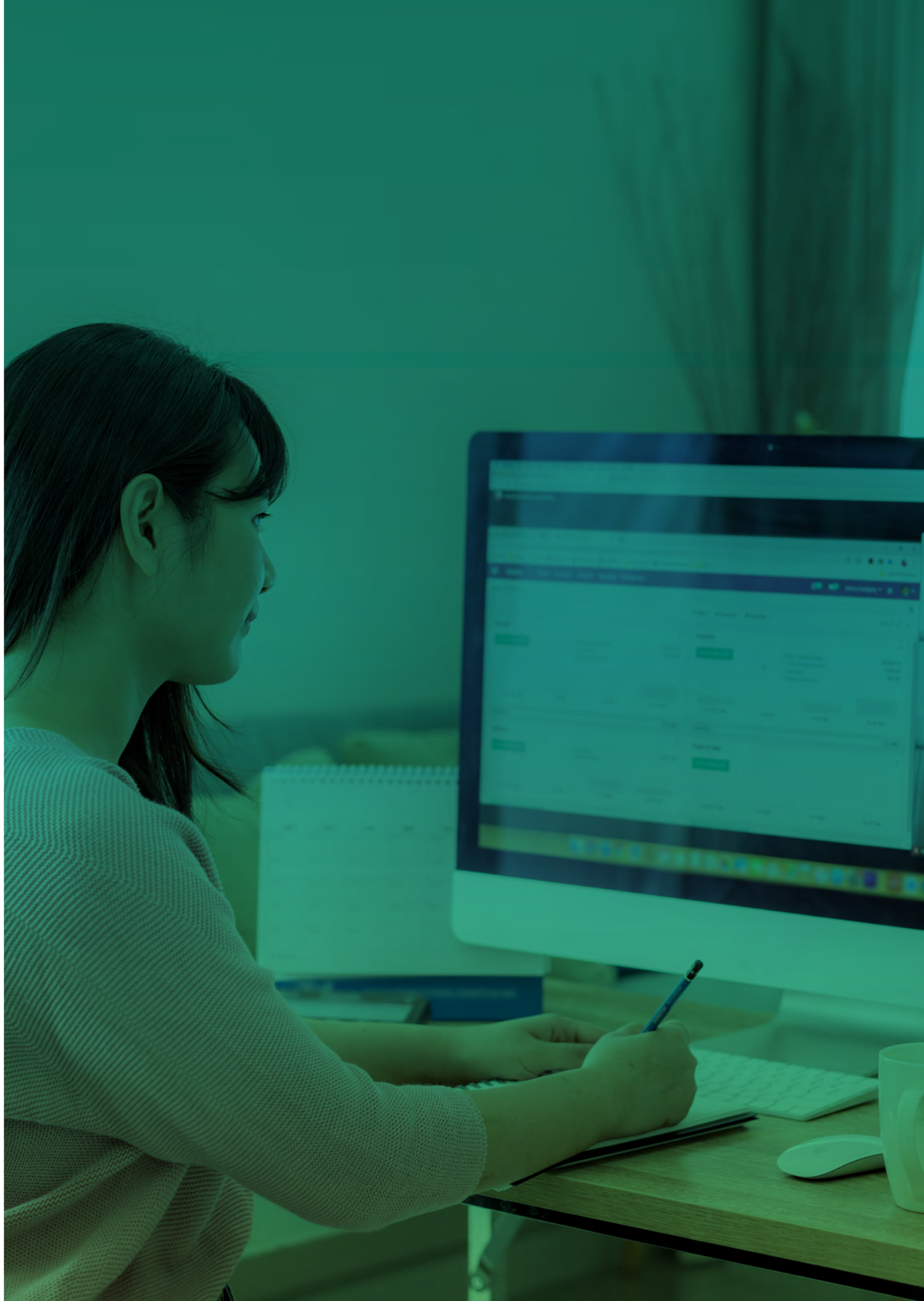


Foreword

With the success of Future Work Design, Phase 1 research and tools to support the changes to working practices using technology as a direct result of Covid-19, Phase 2 has been eagerly anticipated. The concept of the work has been providing staff with the choice to use a wellbeing intervention tool to support their own working practices by providing them with the insight to make informed decisions. The pandemic has continued to challenge us as an organisation and the changes we are making to our working practices are likely to develop into long term solutions as we move from reacting into planning and proactive interventions for service delivery. The new working practices are now becoming embedded in local authority processes and it is important to ensure that staff wellbeing is considered to ensure they are sustainable and safe.

Again, these are challenges that are being faced by local authorities across the country and we were very pleased when we were approached by the Department for Levelling Up Housing and Communities (DLUHC, previously MHCLG) to discuss options to fund another phase of this work. There are tools out there already, such as Microsoft Viva Insights (formerly MyAnalytics), but do they meet the needs of our staff under the current pressures we are experiencing. It is important to ensure the tools we provide our staff are right for us, have the positive impact we are expecting with quality resources available including training and guides.

Darren Stevens
Director of Corporate Resources,
East Riding of Yorkshire Council

Executive Summary

Staff wellbeing is a major concern for UK employers, with costs of poor mental health in the workplace continuing to rise. Nowhere is this more keenly felt than in the public sector. Funded by the Department for Levelling Up, Housing and Communities' (DLUHC) Local Digital Fund, Future Work Design is a two-phase mixed methods project that aims to understand and manage stress risks in local authority settings so that work can be designed in ways that protect wellbeing. As a proactive approach to stress at work, it is hoped that this work will contribute to long term workforce health and sustainability. This report presents the findings of Phase 2 of the Future Work Design project.

Led by East Riding of Yorkshire Council, the partnership includes three other local authorities (Hull City, North Lincolnshire and North East Lincolnshire Councils) and the University of Hull, along with insight and input from Microsoft. Phase 1 consisted of the development of a stress risk assessment tool for remote and hybrid workers in local authorities. Having achieved success in Phase 1, further funding was granted for Phase 2. The aim of Phase 2 was to address specific challenges experienced by workers when working remotely, such as feeling the need to be 'always on', back-to-back meetings, and an inability to protect time for big tasks. We therefore designed an experimental research project with intervention and control groups, testing the efficacy of Microsoft's employee experience platform including Viva Insights. We wanted to understand whether access to and use of the Viva Insights tool could be supportive of staff wellbeing.

276 staff across all four partner local authorities participated, all of whom were in computer-based roles (remote, hybrid and office-based). Of these, 135 (49%) were in the Intervention group (who had access to Viva Insights) and 141 (51%) were in the Control group (who were not given access to Viva Insights). Intervention group participants were provided with access to Viva Insights and associated learning resources, but we also wanted to understand whether people chose to use these resources. We therefore further divided the Intervention participant group into Active and Passive Intervention groups at the end of the study based on the extent to which they made use of the resources.

We found that over 50% of participants in the Intervention group actively engaged regularly and consistently with Viva Insights. Consequently, we observed measurable pre to post study improvements for this group in:

- Digital Maturity
- Daily mood
- Occupational Self Efficacy
- Evaluations of Remote Demands

In a post-experimental survey, we also asked participants about their experiences of the project and found 47% of the full Intervention group reported that use of Viva Insights had positively impacted on wellbeing, 46% reported a positive impact on productivity and 36% reported a positive impact on work/life balance. Others reported neutral impact, with hardly anyone reporting a negative impact.

However, we also found some negative effects of the intervention in the the Active group, whose evaluations of Demands, Management and Peer Support were more negative post study than their pre study evaluations. This negative shift was not found for the Control group and Passive Intervention group. We collected qualitative data to help provide context for our quantitative findings; this provided explanatory evidence as to the reasons for this: although the intervention encouraged healthier ways of working for

this group, others around them who were not participating in the study were not behaving in healthier ways or respecting the boundaries of those who were.

The findings are complex, but as well as demonstrating some positive outcomes for those who engaged with Viva Insights, they provide an evidence-base for other local authorities to make informed decisions about how best to utilise Viva Insights and similar tools to gain maximum benefit. Because of the robust principles underpinning the study design, these findings are generalisable and therefore should be replicable in any local authority setting for participants in similar roles.

The data enables an evidence-based recommendation that organisations wishing to realise the positive benefits of utilising Viva Insights and similar tools should do so as part of a large-scale organisation-level initiative. This should embed healthy working practices, and not just leave it to individuals to 'give it a go'. They also evidence the importance of ensuring there are suitable resources and support mechanisms to support management and peer relationships when rolling out such interventions, with opportunities for further research and interventions around how best to deliver these.

01. Project Introduction

Staff wellbeing is at the top of the agenda across the UK, and rightly so, for there is much work to be done. Under the Management of Health and Safety Regulations 1999, employers have a legal duty to assess and protect employees from work-related stress; yet Health and Safety Executive statistics published in December 2021[1] show that rates of work-related stress, depression and anxiety have been increasing over the past decade, and over the last two years (2019-2021) have been at their highest ever levels. Work-related stress, depression and anxiety accounts for over half of all work-related ill health (new and long standing cases) and 70% of ill-health cases that have been caused or made worse by the pandemic[2]. In all cases, 2020-2021 rates are at their highest in the public sector, being well above the national average in *Public administration and defence*, *Health and social care*, and *Education*.

This may be unsurprising, considering the context of years of austerity, political and economic uncertainty, followed by a global pandemic; Public sector workers are the glue that have held society together through the darkest moments of the pandemic and the deepest lockdowns. They have pulled together and put themselves at risk physically and emotionally to deliver the infrastructure and services needed to support us all, especially the most vulnerable in our communities, and to support the businesses that have been hardest hit. Now, more than ever, it is crucial to capture data about the experiences of staff in this unprecedented situation in which we find ourselves so that decision-making and recovery can be based upon evidence as we all adapt to the 'new normal'.

Funded by the Department for Levelling Up, Housing and Communities' (DLUHC) Local Digital Fund, Future Work Design is a two-phase mixed methods project that aims to understand and manage stress risks in local authority (LA) settings so that work can be properly designed to ensure workforce health and sustainability.

Phase 1 consisted of the development of a stress risk assessment tool for remote and hybrid workers in local authorities, based on in-depth qualitative exploration of emergent stress risks in the first year of remote working. Phase 2 addresses Phase 1 findings through an experimental study testing how effective a digital tool designed to aid productivity and healthy working practices can be in supporting staff wellbeing.

This paper reports the rationale for the project, and provides an overview of the work undertaken in Phase 1. It then presents the rationale, methods and findings from Phase 2, and offers commentary around future implications of this work as well as recommendations and next steps. This paper may be of use to anyone with an interest in or responsibility for supporting workplace wellbeing, either for their own personal information and development, or as a manager or strategic leader, and is likely to be of particular interest to those working in Human Resources, Organisational Development, Wellbeing, ICT, Change & Transformation, and Learning & Development, particularly in the public sector.

[1]Health & Safety Executive (2021). Work-related stress, anxiety or depression statistics in Great Britain. https://www.hse.gov.uk/statistics/causdis/stress.pdf. Accessed 16.12.2021.
[2]Health & Safety Executive (2021). Health and safety at work: Summary statistics for Great Britain 2021. Work-related stress, anxiety or depression statistics in Great Britain, 2019. Accessed 16.12.2021.

1.2 What is Future Work Design?

Led by Eddie Niblett, ICT Strategic Business Solutions Manager at East Riding of Yorkshire Council (ERYC), the work addresses concerns about the impact on staff of changes to working practices. Eddie partnered with a team of organisational psychologists at the Centre for Human Factors, University of Hull (UoH) and with ICT, Human Resources, Organisational Development and Business Change specialists from the three neighbouring local authorities in the Humber region - Hull City Council (HCC), North East Lincolnshire Council (NELC), and North Lincolnshire Council (NLC). Together, we devised a plan for investigating staff experiences of working remotely during the pandemic, with the aim of creating a tool that assesses the prevalence of stress risks in the remote and hybrid working context.

The resulting Remote Working Stress Indicator Tool (ReSIT), published in late 2020, is based on the Health and Safety Executive's (HSE) Management Standards framework and sits alongside HSE's existing 35-item management standards indicator tool[3], providing an holistic assessment of stress risk across the workforce. Further development work has been undertaken to explore and demonstrate the psychometric properties of the new tool.

The tool and accompanying White Paper and Guidance Document are available to download on humanfactors.hull.ac.uk/futureworkdesign; it is also now incorporated into the HSE's digital stress risk management platform called the Stress Indicator Tool (SIT) https://books.hse.gov.uk/Stress-Indicator-Tool/, forming part of the recommended tools for managing stress in the workplace.

This development also makes the ReSIT available digitally and nationally, with excellent data analysis and automatic reporting capabilities. This ensures that low-cost, evidence-based tools that have been updated to suit the current context are widely available for any organisation that seeks to be diagnostic, proactive and preventative in their approach to managing stress in the workplace.

Future Work Design Phase 1 was tremendously successful in achieving its aims, recently winning the 2021 LGC Award for Digital Impact. It also led to the development of a 'Phase 2' project, aiming to address specific challenges experienced by workers when working remotely. The main body of this report presents the Phase 2 project.

[3]Health & Safety Executive (2004). HSE Management standards indicator tool. https://www.hse.gov.uk/stress/assets/docs/indicatortool.pdf.

1.3 Phase 2: Project Background

The aim of Phase 2 of the Future Work Design Project is to develop the evidence base for remote working tools that have the potential to protect the wellbeing of staff. We knew from the findings of Phase 1 (see the Phase 1 White Paper) that workers were experiencing significant challenges; staff were using technologies that had been rolled out at pace with little or no training, support or time to reflect on the potentially negative effects of working in these ways.

The experiences and risks in question reported during Phase 1 included:

- Feeling the need to be 'always on', even outside of working hours
- Feeling that they needed to be constantly available digitally during working hours due to feeling monitored
- Struggling to take breaks
- Back-to-back meetings
- Difficulties avoiding distractions and communications via multiple platforms
- Difficulties finding or protecting focused time

Based on what is known about work-related stress, the potential effects of working in this way both in the short, medium and long term may include:

- Loss of feelings of control over how and when one works
- A perceived or actual increase in demands
- Feelings of overwhelm leading to stress
- Difficulties in interpersonal relationships
- The potential for burnout

Although difficult to measure cause and effect, it is reasonable to expect that if this continues, the financial impact for organisations would be experienced through:

- Sickness days
- Resignations and high staff turnover
- Lost expertise
- Inefficiency through chaotic working practices
- Reduced output as staff begin to lose motivation
- Reduced quality of services resulting in the increased likelihood of vulnerable people entering social care and health systems which will increase costs exponentially.

As well as attempting to understand and then quantify the prevalence of these possible effects and impacts, it became clear that it was necessary to provide urgent but meaningful interventions as quickly as possible; ones that support and empower staff to manage and mitigate these risks and protect their own health and wellbeing.

Of course, we were not the only ones thinking this way. Over the last two years, there's been a huge drive to support mental health in the workplace, and an overwhelming array of options from which employers are required to choose.

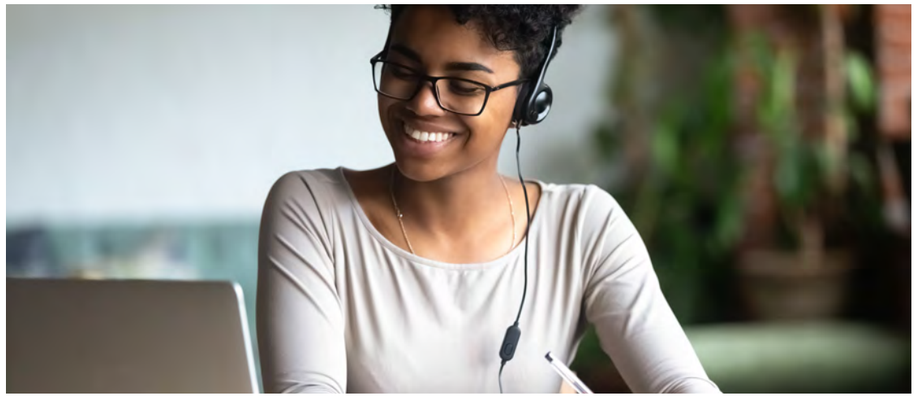
As evidence-based practitioners, we believe it is important to support organisations to make decisions about how to use their resources by building the evidence-base around what works. Our interest in developing the Phase 2 work stemmed from a desire to explore the tools that local authorities already had at their disposal - those that would not require drastic investment - and apply research methods and psychological frameworks to explore their efficacy, thus building organisational confidence in its recommendations around working practices and supportive tools.

1.4 What the Project Involved

This second phase of Future Work Design has been an experimental study to test the effectiveness of an intervention for staff wellbeing called Viva Insights.

Viva Insights (formerly MyAnalytics) is a Microsoft cloud-based application that shows you statistics about your work patterns in Microsoft 365 over the past month, including your focus and collaboration time, how many days you were able to disconnect from work, and how effectively you are networking with your co-workers. It is designed to play a supportive role in helping staff achieve healthier ways of working through self-reflection and awareness of what they have been doing with their time, and provides nudges towards healthier approaches. See the following link: https://docs.microsoft.com/en-us/workplace-analytics/myanalytics/use/wellbeing

This work was not designed as a means of advertising Microsoft solutions but rather to evaluate the efficacy of the tools currently being adopted in local authority settings, and to provide evidence that either supports or refutes claims about the tool's ability to help staff and enhance wellbeing.



1.5 The Team

Again led by Eddie Niblett at ERYC, Future Work Design Phase 2 has been a multi-disciplinary and multi-organisational collaboration between East Riding of Yorkshire Council, Hull City Council, North Lincolnshire Council, North East Lincolnshire Council and the University of Hull, and a communications team consisting of UoH and freelance marketing and communications specialists - bringing in Microsoft as an expert partner.

1.5.1 Local Authorities

The LA teams comprised a mix of staff with responsibility for ICT, OD, HR and Transformation, in recognition of the various significant organisational impacts of the changes to working practices.

The four LAs combined cover a large geographical area within Yorkshire and Lincolnshire often referred to as 'The Humber Region', and together they serve the populations of the City of Hull, the towns of Beverley, Goole, Bridlington, Driffield, Barton-upon-Humber, Brigg, Scunthorpe, Grimsby, Cleethorpes, the East Yorkshire and North East Lincolnshire coast, and the smaller towns and villages in between.

The region lies on the North and South bank of the River Humber, on the North East coast of England, is joined by The Humber Bridge, and it sits within the Yorkshire & The Humber region. Further contextual information regarding each LA is provided below.

East Riding of Yorkshire Council (ERYC)
ERYC Project Leads: Eddie Niblett, ICT Strategic Business Solutions Manager, and Jo Shores, Organisation Development and Inclusion Manager

ERYC is a unitary authority and serves a population of over 300,000 covering around 1000 square miles of coastal and rural communities, mostly small towns and villages. It employs over 5,000 people the majority of whom were office-based prior to COVID-19. There were a minimal number of staff homeworking with agile working adopted by specific teams within the authority prior to COVID-19.

North Lincolnshire Council (NLC)
NL Project Lead: Joanne Andrew, HR Operational & Commercial Lead

NLC is a unitary authority and serves a population of over 172,000 covering around 328 square miles of coastal and rural communities, mostly small towns and villages but including Scunthorpe, Brigg and Barton-upon-Humber. It employs over 5000 people with just over one third of these being office-based prior to COVID-19. There were some staff homeworking with agile working adopted by many staff within the authority prior to COVID-19.

North East Lincolnshire Council (NELC)
NELC Project Lead: Claire Ardron, ICT Business Partner

NELC covers an area of 74 sq miles and has an estimated population of 160,000. North East Lincolnshire is on the south bank of the Humber estuary and includes the three towns of Grimsby, Cleethorpes and Immingham and an area of surrounding Wolds villages. It employs around 2,200 people with just over half being office based prior to COVID-19. There were some staff homeworking with agile working adopted by many staff within the authority prior to COVID-19.

Hull City Council (HCC)
HCC Project Lead: Becky Colton, Senior Transformation Officer

HCC is a unitary authority and serves a population of over 300,000 covering around 27 square miles. Hull is the fourth largest city in Yorkshire and Humber. It employs just under 5000 people. A third of the workforce had started to adopt smarter working practices, including already performing many tasks remotely prior to COVID-19.

1.5.2 University of Hull

The University of Hull has a proud history of academic excellence and an ambitious research and knowledge exchange agenda. Our team at the Centre for Human Factors includes psychologists and researchers with expertise in quantitative and qualitative research methods, occupational health psychology and human factors. The team undertakes applied research exploring aspects of psychosocial risk in occupational settings. Working with a broad range of partners, we aim to improve future working practices, placing employee health and wellbeing at the centre of business decision-making. The University of Hull team designed the research, sought ethical approval and ran the study. We then conducted the data analyses and wrote this final project report evidencing the findings.

Researcher backgrounds

The core UoH research team for this project was co-led by Professor Fiona Earle and Dr Katie Cunnah, supported by Dr Stefi McMaster. Information about the core team is included below. Further consultation on study design was provided by Psychologists Dr Mary Ellen-Large, Dr Stephanie Sayan, and Dr Bernice Wright. Data Scientist Jon Cline supported the study set up and data management, and Statistician Rachel Waddington supported the data analysis process.

Professor Fiona Earle is a Chartered Occupational Psychologist, Director of the Centre for Human Factors and academic in the Department of Psychology. With over 20 years' experience of working in academic and industrial settings, her main focus is working with organisations to understand the sources of work-place stress, and implementing solutions to minimise the impact of these stressors.

Dr Katie Cunnah is Senior Psychologist and Operations Director for the Centre for Human Factors. She has expertise in qualitative research methods and occupational stress risk assessment, management and mitigation. Her experience within clinical mental health settings brings a clinical psychology perspective to her work.

Dr Stefi McMaster is a Psychologist with specialist skills in fatigue risk identification and management within the workplace. She also has specialist knowledge of issues relating to Equality, Diversity and Inclusion (EDI).

1.5.3 Microsoft

Led by Public Sector Account Executive Michelle Mulder, the team at Microsoft facilitated access to the software, providing technical support to the local authorities in ensuring all intervention participants had access to the necessary resources. Their team also provided important insight into the development of a 'Digital Maturity' tool for the pre and post measures in the study and developed the supportive learning resources that formed part of the intervention.

02. Methods

2.1 Research Aims

The overall aim of this study is to explore the potential impact of using Viva Insights and accompanying Learning Pathways (together, these are considered 'The Intervention') on key work and health-related outcomes. As such, the study aimed to address the following questions:

RQ 1

When provided with the opportunity to engage with Viva Insights and the Learning Pathways, to what extent do individual workers engage with these resources?

RQ 2

What are the barriers to individual workers engaging with Viva Insights and the Learning Pathways?

RQ 3

When workers do engage with the intervention, is there a measurable impact on work and health-related factors such as: changes in digital maturity, wellbeing, mental health, self efficacy, evaluations of psychosocial stress risks and of the working day.

2.2 Research Design

An experimental mixed design was employed to test this intervention, including Control and Intervention groups with random allocation based on balanced groups for the two key variables of organisation and digital maturity. The Intervention group received training in how to use Viva Insights and further resources for enhancing digital capabilities, upon which maximum benefit from Viva Insights is dependent. Participants in the Control group conducted business as usual. Both groups completed pre- and post- measures including wellbeing, self efficacy and work-related stress risk factors, and all participants also completed a brief daily diary measure of wellbeing. This section provides further detail about the methodological aspects of this work.

2.3 Recruitment & Participants

2.3.1 Identifying Target Groups

Because local authorities are such diverse organisations with so many varied role types and ways of working, during Phase 1 the team had devised a means of grouping participants by 'working practice' - the ways in which they worked outlined as follows:

1. **Home Visits Examples:** social workers (adult, children, disability, fostering, adoption); family co-ordinators; housing; rents; fostering and adoption service; welfare visits.

2. **Business to Business Examples:** environmental health, finance for schools and other services to schools such as admissions; waste management; commissioning; care brokerage; flood risk; partnership delivery; trading standards

3. **Leisure Services Examples:** events and venues; libraries; parks and gardens; museums; galleries; creative arts and culture.

4. **Community Outreach and Hubs Examples:** teachers/adult education; community outreach; family support; children's centres; youth community development workers; road safety.

5. **Customer Contact Examples:** call centres; debt management; tax; bereavement; waste management; electoral services; neighbourhood nuisance; collections.

6. **Business Support - Office-based Examples:** human resources (HR); learning & development (L&D); payroll; finance; marketing; communications; PR; business change; policy; recruitment; procurement; legal (corporate); business intelligence;

7. **Business Support – Facilities-based Examples:** ICT; facilities management and building control; projects; safety.

8. **Court-related & legal processes Examples:** registrar & bereavement; coroners court; magistrates court; independent reviewing officers; court enforcement.

9. **COVID-19 Hub:** individuals were brought in from elsewhere to support the development of COVID-19 response hubs.

In order to gain meaningful results, it was necessary to design the study with consistency in the sample in terms of their ways of working. Priority areas for testing the intervention were identified by the four local authorities on the basis of a) The findings from Phase 1; b) Consultation with managers internally within each organisation to understand where the need was and where there was capacity and potential appetite for people to engage in such a study; and c) An area of the workforces across all four local authorities where there was some degree of consistency in working practices.

Consequently, it was decided that people who worked in Business Support functions (both facilities and office-based), which are primarily computer-based roles, would be invited to participate.

The target numbers for recruitment were agreed between the research team and the local authority partners based on what was necessary for experimental power, balanced with what was practical, reasonable, and would allow for withdrawals without affecting the inferential statistical tests. The target numbers for recruitment are outlined in Table 1.

Table 1. Target recruitment numbers

Intervention	ERYC	HCC	NEL	NL
Business Support – Facilities-based	20	20	20	20
Business Support – Office-based	20	20	20	20
Control	**ERYC**	**HCC**	**NEL**	**NL**
Business Support – Facilities-based	20	20	20	20
Business Support – Office-based	20	20	20	20
Total	**80**	**80**	**80**	**80**

2.3.2 Recruitment & Group Allocation

Participants were identified and invited to participate by the local authority project leads and their teams. Once local authorities had consent from participants to share their contact details with the UoH team, the researchers made initial contact with all participants, providing further information about the study, and offering a chance for participants to ask questions prior to collecting consent. The UoH team then matched participants within each local authority on the basis of digital maturity score (see Section 2.4.2) and each pair of matched participants was randomly assigned each to either the intervention or control group - one in each.

This meant that the study began with equal numbers of participants in the control and intervention group in each local authority.

Within the first week of the intervention, several participants had to be moved from the intervention to the control group owing to problems with Viva Insights not working for them. There were also a number of withdrawals during the study for reasons such as changes in role or leaving the organisation.

2.3.3 The Sample

In total, 276 staff participated in the study, with *n*=135 (49%) in the Intervention group and *n*=141 (51%) in the Control group. The demographics for the study sample are reported in full in Appendix 1, including a thorough analysis of any bias in allocation to the Intervention and Control participant groups. Key sample characteristics are summarised here:

- Participants were recruited from across the 4 local authorities with *n*=79 (29%) in both East Riding and North Lincolnshire, *n*=67 (24%) in Hull and *n*=51 (18.5%) in North East Lincolnshire.
- The vast majority of participants, *n*=269 (98%) were from a White British background, with only one participant from a Black/Black British background and two participants being Other White.
- 63% (*n*=174) of participants were female and 37% (*n*=102) male, with no participants preferring not to say or preferring to self-describe. Males and females were well balanced in the Intervention and Control groups.
- Participant age ranged from 19 years to 66 years with a total mean age of 43.08 years. The mean age of Control participants was *M*=42.8 year (*SD* = 10.6) and mean age for the Intervention group was *M*=43.4 years (*SD* = 10.6) and there was no significant age difference by group.
- Approximately two-thirds of participants (65%) were team members and one in three had a senior role (team manager or senior manager).
- Mean length of service of Control participants was *M*=14.4 years (*SD* = 10.7) and mean length of service for Intervention participants was *M*=14.5 years (*SD* = 10.3).

Analysis of the participants' data showed a well-matched Intervention and Control group, with no significant differences in any of the demographics.

2.4 Procedures

2.4.1 The Intervention

The intervention phase ran for 12 weeks between the end of July and middle of October 2021. During this time, all participants received daily prompts asking them to complete a daily diary. The contents of the daily diary included a standardised brief measure of mood called the Positive and Negative Affect Schedule: PANAS[4], and some brief bespoke questions about how the individual felt about work that day. The bespoke questions from the daily diary survey are included in Appendix 2.

During the experimental period, participants in the intervention were set up with Viva Insights, and provided with a platform containing Microsoft learning resources ('Learning Pathways'). These were a series of more than 120 short instructional videos to support optimal use of a range of Microsoft products such as Excel, Powerpoint, Word, Teams, Outlook, OneNote and Viva Insights.

Viva Insights is only able to provide useful data if participants were able to make full use of the MS365 suite - for example, through using the Outlook calendar rather than a paper diary. The Microsoft team worked with the UoH team to generate a list of key digital skills that individuals might have, and this list was developed into a 'Digital Maturity' measure (see Appendix 3). From the digital maturity measure, specific building blocks of learning were identified and the Microsoft team created the package of Learning Pathways.

Participants were provided with access to these resources and several emails and communication documents at the beginning of the study reminded them of the available resources. This included an instructional video made by the research team about how to access Viva Insights and the Learning Pathways which was sent to all intervention participants by email on three separate occasions when the study first began. Beyond the first week of the study, participants were not prompted or required to use the resources - it was left entirely to the participant to choose whether or not to make use of both the Learning Pathways and Viva Insights. However, participants in both the control and intervention groups did receive automated daily reminders to complete the daily diary.

Viva Insights takes a few weeks after being turned on to gather data so that the insights it provides are meaningful. It was also expected that most participants would take at least two weeks of annual leave during the intervention period. As we aimed to achieve 7-8 weeks of intervention data for all participants, a 12 week intervention window provided ample time for Viva Insights to gain pace and allow for annual leave.

The majority of participants had never used Viva Insights before, although occasional participants had already had access to it prior to the study. For those in the Control group, Viva Insights was turned off, and all participants were asked in the baseline measures to provide details of any previous experience with Viva Insights so that this could be controlled for in the analyses.

[4]Thompson, E.R. (2007). Development and validation of an internationally reliable short-form of the Positive and Negative Affect Schedule (PANAS). Journal of Cross-Cultural Psychology, 38-227.

2.4.2 Baseline and Post-Intervention Measures

In addition to a measure of Digital Maturity, baseline and post-intervention measures were taken that addressed wellbeing, individual differences (self efficacy), and work characteristics. All measures were selected following extensive research by a team of six psychologists to identify the best reliable and valid standardised measures appropriate to our research question and study aims. The final selection is outlined in Table 2, with more detailed descriptions of each measure provided in Appendix 4. The baseline, daily diary and post-intervention measures were hosted on a secure online survey platform, Cognito Forms. Baseline measures were taken in the two weeks prior to the launch of the intervention phase and daily diary measure, and post-intervention measures were taken in the two weeks following the closure of the study.

Table 2. Pre and Post Measures

Measure	Pre	Post
Digital Maturity	X	X
Occupational self-efficacy scale – Short form (OSS-SF[5])	X	X
Brief Mental Health Measure (PHQ-4[6])	X	X
Subjective Wellbeing Measure (WEMWBS[7])	X	X
Management Standards Indicator Tool (SIT[8])	X	X
Remote Working Stress Indicator Tool (ReSIT[9])	X	X
Evaluation of Intervention Questions	0	X

In addition to ensuring there was no bias in the sample demographics for the Intervention and Control groups, it was important to ensure that participants were balanced with regards to Digital Maturity, and in the key work-related factors of Stress Risk, Mental Health and Wellbeing. There were no significant differences between the Intervention and Control groups across any of the measures (see Appendix 5 for descriptive data and analysis of group differences).

[5]Rigotti, T., Schyns, B., & Mohr, G. (2008). A short version of the occupational self efficacy scale: Structural and construct validity across five countries. Journal of Career Assessment, 16(2), 238 - 255.

[6]Kroenke K, Spitzer RL, Williams JB, Löwe B. An ultra-brief screening scale for anxiety and depression: the PHQ-4. Psychosomatics. 2009 Nov, Dec;50(6):613, 21. doi: 10.1176/appi.psy.50.6.613. PMID: 19996233.

[7]Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., Parkinson, J., Secker, J., & Stewart-Brown, S. (2007). The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): Development and UK validation. Health and Quality of Life Outcomes, 5, Article 63.

[8]Health & Safety Executive (2004). HSE management standards indicator tool. https://www.hse.gov.uk/stress/assets/docs/indicatortool.pdf.

[9]https://humanfactors.hull.ac.uk/wp-content/uploads/2020/11/FWD-Risk-Assessment-Tool-v2.pdf

2.4.3 Qualitative Data Collection

Qualitative data was also collected at the end of the study; This took place in the two weeks following completion of the post-intervention measures. The purpose of the groups was to explore participant experiences of a) participating in the study b) using the daily diary method and c) for the intervention group, understand more about their experiences of using Viva Insights and the Learning Pathways provided, and a topic guide was developed accordingly. Participants from both the Control and Intervention group were asked to participate in one of eight focus groups lasting one hour, facilitated by the UoH researchers. Attendees in each group are presented in Table 3. A semi-structured approach was taken to running the groups based on the topic guide; sessions were audio-recorded and transcribed, and data was then analysed using a content analysis approach based on the pre-defined areas of interest outlined in the topic guide.

Table 3. Focus Group Participants

Group name	Number of participants attended	Local authorities included
Intervention group 1	5	ERYC (3), NEL (1), HCC (1)
Intervention group 2	6	ERYC (2), NEL (1), NL (2), HCC (1)
Intervention group 3	7	ERYC (3), NL (2), HCC (2)
Intervention group 4	4	ERYC (1), HCC (3), NL (1)
Control group 1	5	ERYC (1), NEL (1), NL (3)
Control group 2	5	ERYC (1), NL (4)
Control group 3	8	ERYC (2), HCC (5), NL (1)
Control group 4	4	ERYC (1), HCC (2), NL (1)

2.5 Ethical Considerations

Ethical approval was provided for this study by the University of Hull Faculty of Health Sciences Research Ethics Committee. The process was designed to ensure that:

- All participants were provided with accessible and clear information about what participation would involve and how their data would be used, and had opportunities to ask questions before providing consent.
- Although the study took place during work time, participation was completely voluntary and participants were made aware that they had the right to withdraw at any time without consequence.
- Provisions were in place for any participant who may be experiencing any difficulties relating to the study or work during the study, with contact details for sources of support made available to participants.

Microsoft protects employee privacy and supports compliance with local regulations, such as the General Data Protection Regulation (GDPR) when data is processed for Viva Insights. The data collected by Viva Insights was only available to the participants themselves. It was not intended for analysis as part of the research data, nor was it made available to their employers/managers. This was made clear to participants in the participant information sheet and when they began training to use Viva Insights.

03. Findings

3.1 Introduction to Findings

The findings are presented in two main sections. The qualitative data from the focus groups will be presented first, highlighting relevant quotes along with summaries of themes from participant experiences. The quantitative findings will then be presented, along with figures of descriptive data and a thorough statistical analysis.

3.2 Qualitative Focus Group Findings

A major aim of the qualitative research was to provide contextual understanding of the quantitative results, shedding light on what may have underpinned the experimental findings. However, for a reader, presenting this contextual understanding prior to the quantitative results may aid interpretation. For this reason, we first present the qualitative findings followed by the quantitative findings. Following content analysis of the focus group transcripts, findings are presented based on the predetermined areas of interest (upon which the focus group topic guide was based), with some areas relevant to participants in both the Control and Intervention groups and others specifically relevant to the Intervention group. Commonalities in answers between the groups are highlighted, as well as interesting, but less common findings. Where appropriate, quotations are included to provide evidence and insight into participant perspectives.

3.2.1 Reasons for participating - Intervention & Control

Focus group participants generally cited two reasons for volunteering to participate in this study: 1) that they were personally interested in the premise of the study; 2) that they had been asked to take part in the study by their managers. Those who were personally interested in the study tended to be either responsible for managing staff, working in strategic roles or have roles relevant to mental health or wellbeing. This was also particularly the case for Microsoft 365 and Wellbeing Champions as well as Mental Health First Aiders. Additionally, some highlighted that they had been involved in the Phase 1 study and so were interested in participating again.

Those who were interested in the study tended to attribute their interest in this work to the context of the changing work environment (due to the pandemic) and the widespread switch to remote/hybrid working.

Some participants felt their demands had increased since the pandemic and thought that their participation in this work might inform their personal future work practices through the opportunity to be self-reflective:

> "I just wanted to find out if there's a better way of organising my day"

Many participants said that they felt a sense of moral duty to participate in research, particularly that which is focused on improving workplace wellbeing:

> "We need people to engage or we won't get the information to support people"

Team leaders who participated frequently commented that they thought that there might be learnings that could be taken back to their team to improve wellbeing. One commented that they were interested in hearing about "what the actual struggle is" with their team rather than guessing.

Some participants said that they had been asked to consider participating by their managers before subsequently deciding to volunteer. It seemed that the difference between those who volunteered without being encouraged and those who were encouraged by a line manager may have been influenced by job roles.

Those in strategic/management roles tended to say that they were personally interested in the project. This could be due to the notion that their roles require more strategic thinking and therefore a strategic approach to time management appealed more to them. It could also be the case that individuals in those roles had more space to work in self-directed ways and therefore thought that they would benefit from using the tool.

3.2.2 Experience of filling in the daily diaries - Intervention & Control

The daily diary was used as a mechanism for data collection, but the researchers recognised that the daily diary may also be experienced as a form of intervention for participants. Consequently, it was important to explore participant experiences of using the daily diary method. Indeed, focus group participants from both the Control and Intervention group indicated that using the daily diary was a positive experience; many participants stated that filling in the diary offered them an opportunity for reflective practice which they had not previously had and which was of value. Some expressed that this generally had a positive impact on their experience at work due to the following factors:

- It helped them to be aware of how much of their experience of stress was associated with work.
- Some suggested that it increased their compassion towards themselves and others, helping them to appreciate that they were dealing with people who may well be experiencing similar things to what they had recorded in their diary that day. This has the potential to improve experiences of peer support: "sometimes people forget there is a human being at the end of an email".
- Some participants highlighted that the experience of regular reflection had provided them with a framework from which to have conversations with their managers about their wellbeing which they had not previously sought out.
- Multiple participants stated that filling in the diary at around 4pm each day provided them with the opportunity to decompress and reflect towards the end of their work days. Whereas previously they may have continued with their work until finishing, entering their recovery time in a potentially stressed state, the diary allowed them time to decompress before finishing work and put it "away in a box". This was particularly the case for participants who worked remotely who stated that their commute would have previously served as a bridge between work and home, but they had lost that through working from home. The diary prompted this time for reflection and debriefing about the content of their days.
- Multiple participants said that they would have appreciated the opportunity to add qualitative data alongside their diary entries, providing context to their answers and allowing the opportunity for deeper reflection.

Though many participants highlighted the positive impact of the diary for personal reflective practice, it was also commonly stated that the diary itself was not a form of intervention as they could not 'do' anything with the information. Some suggested that having feedback on their data so that they could identify patterns in their positive/ negative experiences at work and adjust their practices accordingly would serve as a positive intervention, for example:

> "I'd love to know because I always have one day a week where I'm back-to-back meetings and I just filled the diary in every day as a daily diary but I would love to know if, you know, do I always feel more productive on a Wednesday when I've got six hours of meetings but do I always feel sad on a Wednesday or do I, you know, do I always feel better because it would help, that would then change how you worked. If I felt that Mondays were always a really positive day or whatever, you know, it might change how you shifted your workload and everything but for me, the questions would have to be slightly tweaked."

This would be akin to adding a diary element to Viva Insights - allowing it to serve as a reflective tool for wellbeing as well as working practices. However there would be various issues with privacy and psychological safety with this type of intervention.

3.2.3 Experience of using Viva Insights - Intervention Only

Level of interaction with Viva Insights & the Learning Pathways

Participants in the intervention group were asked about how much they engaged with Viva Insights during the study. Answers were mixed with some reporting that they did not engage with the tool at all (though still participated with the study through filling in the dairy), and others reported that they had used it 'religiously'. There were three main factors cited by those who never/rarely interacted with Viva Insights:

1) The first was due to lack of engagement with the Learning Pathways, meaning that those less confident with IT felt unable to use Viva Insights to the best of its capabilities. Reasons for not interacting with the Learning Pathways tended to either be because participants had not seen, or engaged with email prompts or that they felt that they did not have time to do so.

> "I didn't understand what the tools were - they just kind of appeared in my diary and I didn't know what they were for."

> [training] "I tried a few times, but unfortunately work got in the way. Lack of time... I went on it, and I clicked on a few, but the ones I clicked on weren't aimed at my level and then that almost put me off, I didn't then find the time to go digging deeper as I knew the basics myself... could have been helped by better signposting."

2) Some participants stated that they decided not to use the tool because they did not feel that they needed to. This was mostly because they already used specific time management practices such as calendar blocking and felt that they did not need to engage with a new tool.

> "As for the time management stuff, I already have regular meetings with both my teams and, because I do have to be quite strict with my time management anyway to make sure I'm doing the same amount of work for each team, because of that I have regular meetings for both jobs anyway."

3) Another factor was a feeling of apathy; a lack of belief that using the tool would change anything about their current experience at work because they felt that their team and managers did not respect the boundaries that they had tried to put in place through the use of Teams such as 'do not disturb' or by stating that they needed time for specific tasks on their calendars.

> "So they don't think of how I work, so they will just pick the phone up and go right, I need to speak to XXX now and they won't even look at whether I'm predisposed or anything, you know, they wouldn't even bother to look and that happens all the time with me. So I don't know how it saying focus time would make a difference."

Perceptions and experience of Viva Insights

Some participants in the focus groups described feeling generally overwhelmed with the level of enquiries coming through from their peers and managers, particularly hybrid/remote workers. For some workers this meant that colleagues would contact them via Teams for non-urgent requests, even if their diaries/Teams availability stated that they were busy. It could also mean that individuals were booked into continuous meetings without the opportunity for breaks:

> "Working from home, people are under the impression they can book your meetings back-to-back – in the office people booked in travel time. It's not acknowledged that you need time to grab a cup of tea or go to the loo."

A key feature of Viva Insights is that it can help with this particular challenge is the support it provides with the implementation of breaks and focus time. There was a perception amongst participants that some people needed Viva Insights more than others - for example, those with fewer boundaries around work, and those who had team members/colleagues who booked sessions into their diaries or who had others regularly needing adhoc input from them. For some, they described feeling validated by the permission that Viva Insights gives them to protect their time for focused tasks. However, it seemed that the helpfulness of the tool was heavily dependent on how open colleagues, teams and/or managers were to individuals implementing boundaries in order to manage their time and workload.

For example, there were reports of different experiences of using the 'focus time' feature - some participants reported that colleagues, teams and/or managers respected their need to do this and the implementation of these practices had improved their wellbeing. However, others said that their attempts to book out and protect focus time was viewed as inappropriate by colleagues/team members who were not participating in the study. One participant described being chased by colleagues on multiple communication platforms such as mobile phones, emails and Teams when they were set on 'Do Not Disturb', and other participants in that session agreed that they too had experienced this behaviour. Others had experienced colleagues specifically using it as an opportunity to make contact with them because they could see a gap in the meetings in their diaries, for example:

> "It was hit and miss, I used the focus time a lot, but there were some people, culturally, that really respected that and others that saw that as a potential gap in your diary to book appointments in... I think that's something we need to do as an organisation - we have implemented team protocols as part of blended working...we must respect people's [MS Teams] status and not go against that, because unfortunately some people did."

There are many examples in the qualitative data of participants who may have benefitted from the working practices encouraged by the tool, but who were prevented from realising its full potential due to the behaviours of others in their organisation. It seemed that there was a lack of common understanding of appropriate behaviour around this which is perhaps unsurprising as current methods of communication (e.g. Teams) were implemented during a time of emergency.

One participant pointed out that the features of Viva Insights could help to mitigate some of the negative behaviours that had developed around the use of Teams. For example, participants described an increased level of judgement and surveillance amongst colleagues; because people have the ability to see whether others are 'available' on Teams, participants said that some colleagues perceived a status of 'away' to mean that an individual was not working and that this was perceived as an evasion of work or duty, rather than taking acceptable breaks or working without interruption. Therefore, people felt the need to be seen as being constantly available. As Viva Insights allows individuals to schedule in focus time and this overrides the Teams 'online' feature, it meant that despite the attitudes and behaviours of others, some individuals felt validated in their attempts to work in line with what was best for them, empowering them through reducing their fear of judgement from colleagues:

> "[Viva Insights] tells you you can [take breaks and focus time], and it's not wrong to do it. We've got people in our teams that constantly watch you, as soon as they see you go yellow on Teams, they're like checking how long you've been away on Teams. This just gives you that time where, you might have wandered off for ten minutes just to have a walk, but nobody's judging you, it takes away that judgemental aspect, of 'I'm having a minute, I'm having some time for myself,' and then people are not keeping an eye on you."

Another participant commented that although their lack of availability during allotted focus time was a source of challenge for others who were not involved in the study, using Viva Insights had helped them create space to get on with tasks uninterrupted, which they felt had been helpful:

> "I put focus time in, I thought well I'll see what this is like, and put it in, but I didn't realise people couldn't get in touch with me until I started getting complaints from people because they couldn't get hold of me. But actually it was really good. It did give me a chance to get on with things."

Some participants who continued to regularly engage with the tool throughout the study highlighted a number of positive impacts. The first was that it provided an opportunity to evidence how their time was being spent, both to themselves and others. One participant stated that using the tool, which had prompted them to make better use of Microsoft tools such as Outlook Calendar, had allowed them to add structure into their days which they had previously struggled with:

> "I had to try and make sure that any meetings I had were actually in the calendar and also trying to make some time for myself as well so putting in lunch breaks, focus time breaks and I felt actually that I needed that to be able to make sure that I could fit everybody in around the time that, so around the time that I needed, so for like catch-up and stuff. I probably only started using it at the beginning of this study and up until then, I think, I was quite sort of like…everything was all over the place and using some of the tools to help, sort of like, structure my days was really helpful."

Other participants had used data from Viva Insights to evidence that their current working practices were unproductive which facilitated a change in role and project organisation:

> "I do two split jobs and it actually made me realise that I can't work the set days that I was allocated to begin with….so by doing this, I realised there was so much crossover… in the end I spoke to my boss on the back of this and said I'll just provide the support wherever the demand is so what I've ended up doing is…my days are all as one now and I just manage my diary differently…. because I can see better now what I'm doing…I can meet the demand a bit better and I can be a bit more flexible with it."

> "One of the of the things that I was able to look at on the analytics was how much other people were impacting the progress of my days so that I could plan things differently…it was seeing the impact of [other projects] in terms of my time that led me to attending a wider department management meeting to say 'we're recognising now the massive impact and influence that this project is under and is it still the right thing to do based on what I'm finding based on the amount of time I'm getting pulled in different directions because of these other projects?'. As a result we've reviewed the project plan and are now going to be delivering something different to what we intended to…so it was that recognition and being able to recognise how much time I was spending collaborating with people from different projects…rather than how many meetings it was 'who were those meetings with?'"

Getting this in-depth data on their working time allowed some users to operate with a higher level of self-awareness and feel empowered to ask for changes to be made in their roles.

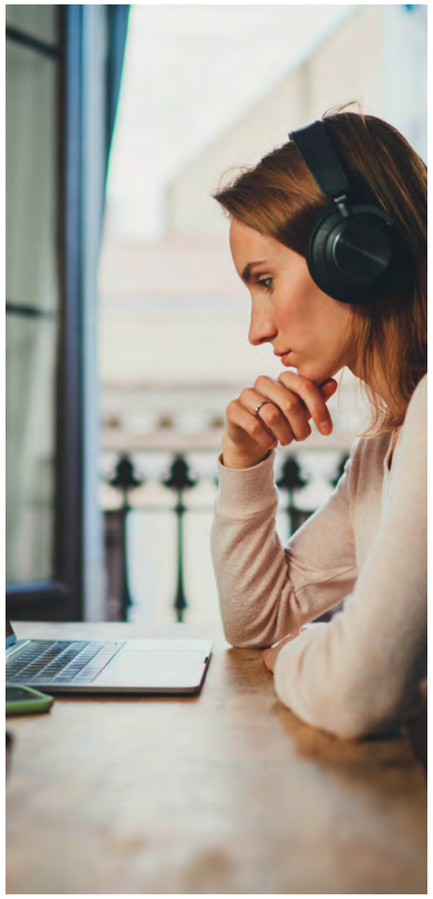
Though findings highlighted various benefits of using the tool, some participants reported specific challenges with the functionality of Viva Insights. This tended to be focused on its lack of usefulness for employees who were not always office-based as Viva Insights only captures information from time spent on Microsoft programmes. Therefore, for individuals who spend a lot of time out of the office on visits, the insights were not accurate reflections of their working days:

> "…I'm out at five visits where I don't need to speak to anybody, I'm just going to take some photographs or I'm out and then I'm going to hand deliver these letters and come back in and then I've got a flurry of work of updating our case records when I come back in… I got one [Viva Insights email] and it said 'for 85% of this week you've had downtime' and I thought 'no I haven't, I've been running round like a proverbial this week', or it felt like it to me, and I didn't have that information to back it up because it can only see what you're doing on your computer."

Some participants highlighted that this caused a feeling of anxiety about how they are perceived by their colleagues and managers in terms of their productivity, adding to a perception of surveillance, particularly for those who needed to work in more flexible ways. It was also an issue where individuals used a computer frequently in their work but not within Microsoft tools:

> "So my case system, case management system, isn't Microsoft so I can quite literally have been sat there all day using that, building a file ready to write a statement on Word and my statement takes me half an hour but I've spent five hours getting everything, all of my documents and everything ready to put into that statement and it thinks I've only done this half hour."

> "It can only see, I think, what you're doing on your computer within Microsoft tools…I'm obviously different to all of you because I'm not a manager so I didn't have meetings or focus time to read documents or whatever, we're just basically inputting data all the time. So some of the things that it offered weren't, you know, they were nice to know but there was no use for me because the way I work…I'm working in a totally different way because obviously I'm at a lower level than all of you."



Summary of Qualitative Findings

When asked about their experience of filling in the daily diaries, many participants highlighted that this had been a notably positive experience. This was generally cited as an opportunity for reflection which had not previously been incorporated into their roles. In particular, those who worked from home stated that filling in the diary towards the end of their working day allowed an opportunity for decompression that they had lost when they stopped commuting. However, many commented that the impact of the diaries was limited due to their inability to provide qualitative data to give a more in-depth account of why they had selected the answers that they had and the lack of feedback on their diary entries.

Discussions with participants from the intervention groups about their level of interaction with Viva Insights provided some varied data. Around half of participants stated that they had used Viva Insights regularly whereas others highlighted that they did not use the tool at all, or had begun to engage with it, but hadn't found it useful. A barrier for interacting with Viva Insights tended to be a lack of engagement with the Learning Pathways. Some participants either had not read the emails directing them to the Learning Pathways, or were aware of them but did not feel that they had the time to engage with them. For those less confident with IT, this seemed to be a barrier preventing them from engaging with Viva Insights at all. Other reasons for not interacting with the tool tended to be that participants felt that they already had useful methods of time management and teams that supported their need to have boundaries around their time and so were reluctant to engage with a new system.

Conversely, some stated that they did not have peers/managers who respected their boundaries and thought it unlikely that the use of Viva Insights would provide any meaningful change.

Participants who did use Viva Insights tended to say that they were interested in the potential for a technological intervention to improve organisation and streamline their work. Experience of using the tool was varied. Some found Viva Insights to be useful, particularly as it allowed them to add structure to their days and provide insights into how they were spending their time which they could use to make positive changes- both through changing their own organisation and providing evidence to change job or project organisation at a higher level. However, major challenges with the tool were that its usefulness appeared to be mediated by peer and management support. If they had peers/managers who encouraged healthy working practices, Viva Insights acted as a useful method of facilitating a common understanding around work time boundaries. However, if they had peers/managers who did not understand the need for this, the usefulness of Viva Insights was either limited or could cause tension between colleagues and managers (e.g. some participants highlighted that there were different perceptions of the appropriateness of using 'focus time'). Additionally, the positive impact of Viva Insights appeared to be limited to those who were desk-based and used Microsoft programmes. A discussion of these findings in line with the quantitative results will be provided in Section 4.

3.3 Quantitative Findings

3.3.1 Quantitative Data Analysis

The impact of the intervention on pre and post measures

To determine whether using Viva Insights had a measurable impact on wellbeing, self-efficacy, mental health (anxiety and depression), and perception of work-related stress risks, we compared results between the Intervention and Control groups from measures taken before (pre) and after (post) the intervention or control period (12 weeks).

How did we test this?
To explore any differences in results between pre and post measures for the Control and Intervention group, we used a statistical test called a mixed design 2x3 ANOVA (Analysis of Variance). Although we initially planned to compare the Control group to the Intervention group, preliminary analysis demonstrated a clear split in the Intervention group between those participants who had actively engaged with the tool, and those who had not. This provided three participant groups (Control, Active Intervention, Passive Intervention). The two Intervention groups are also referred to as *experimental* groups because they were under experimental conditions, and in figures and tables they are sometimes labelled *Active EXP* and *Passive EXP* meaning Active or Passive Experimental groups.

This series of tests allowed us to determine whether there is a significant difference between pre and post scores and whether these results were significantly different depending on the group.

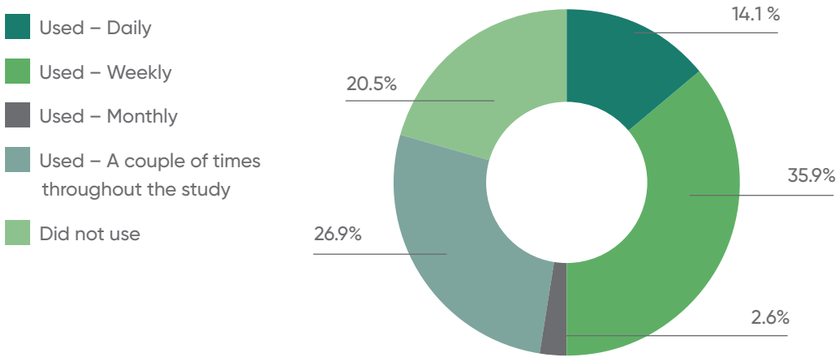
Thus we included two time points (pre and post) and the three participant groups. Results tell us the magnitude of this effect (*F* value) and how confident we are that this difference is meaningful (significance, or *p* value). Statistical significance determines the degree to which a result cannot reasonably be attributed to chance or random factors. In most academic research, results are determined to be statistically significant if the significance value is p=0.05 or less, meaning that there is a 5% or less chance that results could have been caused by chance.

3.3.2 Quantitative Results

Intervention Group adoption of Viva Insights and Learning Pathways

Participants in the Intervention group were provided with access to Viva Insights and directed to a series of Learning Pathways to support their understanding, engagement and benefits of the tool. As indicated above, adoption of these tools was varied with some participants in the Intervention group engaging regularly and others not engaging at all. Most participants did engage at some level, with 78.5% of participants in the Intervention group stating that they had used Viva Insights during the course of the research. However, only a small proportion of the Intervention group reported using the tool daily (14%) and around a third (35.9%) using the tool weekly. Twenty percent of the Intervention group reported not engaging with Viva Insights during the course of the intervention (see Figure 1).

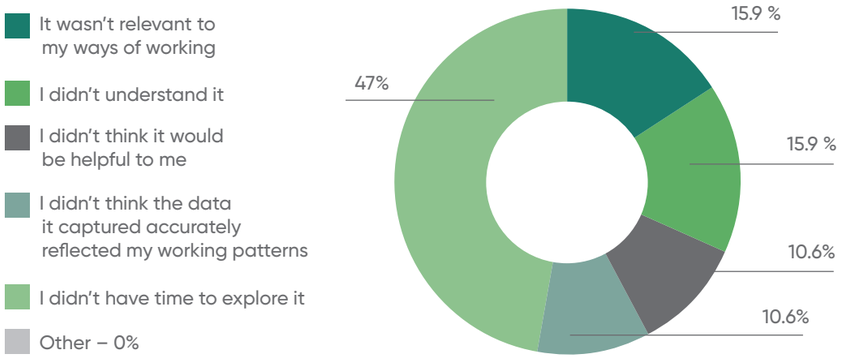
Figure 1. Viva Insights Usage



In terms of patterns of use, almost half (44%) of the Intervention group reported that engagement with the system remained relatively consistent throughout the 12 week intervention, 37% reported frequency of engagement with the system increasing through the course of the study and 19% of participants reported a decrease in their usage.

For those participants who did not use Viva Insights, a variety of explanations were provided, most commonly feeling they did not have the time to explore the tool. Other explanations included: *It wasn't relevant to my ways of working*; *I didn't understand it*; *I didn't think it would be helpful to me*; *I didn't think the data it captured accurately reflected my working pattern* (see Figure 2).

Figure 2. Reasons for not using Viva Insights



With regards to the Learning Pathways, 64.6% of the Intervention group stated they had not used the Learning Pathways during the course of the research with only 5% using it at least every month. The most common reason stated for not engaging with the Learning Pathways was once again feeling that they did not have time to explore these tools (57%). Further reasons for lack of engagement included: *I didn't think I needed the Learning Pathways* (18%); *I didn't think it would be helpful* (12%); *I didn't know how to access them* (10%); *I didn't think they were relevant* (8%); *I didn't understand them* (6%).

Patterns of engagement with the tools were interesting, with younger participants (under 24 years) being the most engaged with both Viva Insights (100%) and the Learning Pathways (50%), although this group represented only a small proportion of participants.

Similarly, participants who were new to their role (up to one year) were most likely to engage with both Viva Insights (91%) and the Learning Pathways (64%). Males were slightly more likely to engage with Viva Insights (82% of males did engage) compared with females (76% of females reporting engaging). Unsurprisingly, participants with a higher Digital Maturity score were more likely to engage with both Viva Insights (83%) and the Learning Pathways (39%) than those participants with a lower Digital Maturity score (74% and 32% respectively). However, none of these between group differences reached statistical significance (see Appendix 6 for relative frequencies of between group tool usage).

Post Study Evaluation

Following completion of the Intervention Phase, participants were asked a series of evaluation questions relating to the impacts of using Viva Insights, the Learning Pathways and the daily diary. The Control group was asked a reduced set of questions, not including evaluation of the Microsoft tools.

Most notably, very few participants (2%) reported a negative impact of using Viva Insights, whilst the proportion of respondents reporting a (net) positive impact varied from 29% to 47%, with the most positive impact noted for wellbeing and the least impact noted for relationships (see Table 4).

Table 4. The impact and usability of Viva Insights

Impact on:	Very negative	Somewhat negative	Neutral	Somewhat positive	Very positive	Net positive
Wellbeing at work	1%	1%	51%	41%	7%	47%
Productivity	1%	1%	52%	38%	8%	46%
Work life balance	1%	1%	62%	24%	12%	36%
Work relationships	1%	1%	69%	22%	7%	29%
The usability of Viva Insights has been:	1%	2%	44%	40%	13%	53%

Further analysis of these evaluations considered the patterns of positive responses to Viva Insights across the demographic groups. Consistent with the 'usage' findings above, younger participants (Under 24) were the most likely group to assign a positive rating to their experience of engaging with Viva Insights (50% positive), and those participants with a higher Digital Maturity score were slightly more likely to assign a positive rating (41% positive) than those with a lower Digital Maturity score (38% positive). These between group differences did not reach statistical significance. However, perhaps contrary to the finding that males were more likely to engage with Viva Insights, females were significantly more likely than males to rate their experience as positive (females M=46%, males M=27%), despite males being more likely to engage with the tool.

This gender difference was found to be significant ($t(89)=2.3$, $p<0.05$). Ratings of the Learning Pathways were less positive than those of Viva Insights, with a quarter of respondents reporting a positive impact on their wellbeing at work (see Table 5). Most participants reported a neutral impact, with roughly equal evaluations of the impact on productivity and wellbeing. However, it is important to note that evaluations of the impact and usability of the Learning Pathways are likely to have been highly influenced by the low levels of engagement as outlined above, with relatively few participants actively engaging with these support tools during the study.

Table 5: The impact and usability of the Learning Pathways

Impact on:	Very negative	Somewhat negative	Neutral	Somewhat positive	Very positive	Net positive
Productivity	1%	0%	74%	21%	4%	25%
Wellbeing at work	1%	0%	75%	19%	5%	24%
The usability of the Learning Pathways has been	1%	2%	64%	29%	4%	33%

Whilst only the Intervention group was provided with access to Viva Insights and the Learning Pathways, both the Intervention and Control groups were invited to complete the daily diary. Although the main function of the daily diary within the study was to measure and monitor any changes in wellbeing and work evaluation, data was also gathered to explore evaluations of this reflective process.

The post study evaluations found that the daily diary was rated as broadly positive for the Intervention and Control groups, with very few participants reporting a negative impact. The proportion of participants who reported a positive impact of the daily diary is greater in the Intervention group than the Control group but not significantly so (see Table 6).

Table 6: The impact of the daily diary

Impact of the daily diary		Very negative	Somewhat negative	Neutral	Somewhat positive	Very positive	Net positive
...on work	Exp *n*=91	2%	3%	47%	35%	12%	47%
	Control *n*=102	0%	2%	59%	36%	3%	39%
...on wellbeing	Exp *n*=91	2%	2%	47%	38%	10%	48%
	Control *n*=102	0%	1%	60%	33%	6%	39%

Exploring the effects of the intervention on work and wellbeing

The main aim of the study was to explore the impact of a digital intervention, Viva Insights and the Learning Pathways, on work and wellbeing in an experimental study. The findings presented above provide a solid foundation for this analysis, including evidence of a well-matched control group, with good balance between the groups for all measured individual differences.

The findings above also provide useful information about the levels of engagement with Viva Insights in the Intervention group. Of particular interest is the frequency of usage, with almost half of Intervention participants (47%) reporting only engaging with the system monthly or less frequently. Whereas, 53% of participants reported engaging with the tool either daily or weekly. Consequently, the Intervention group has been separated into two subgroups, representing active or passive engagement - The following analyses will compare outcomes for the three groups: Intervention Active; Intervention Passive; and Control. As described above, Analysis of Variance (ANOVA) is used to explore differences between the groups both before and after the Intervention, and to ascertain whether these differences are statistically significant. This ANOVA method is particularly useful here as it allows us to identify any 'interactions', i.e. differences in the way each group has responded to the intervention. The following series of analyses will consider effects on baseline measures (Digital Maturity, Wellbeing, Self Efficacy and Mental Health) and stress risk measures (including perceptions of general stress risks and remote working stress risks).

Pre and Post Measures

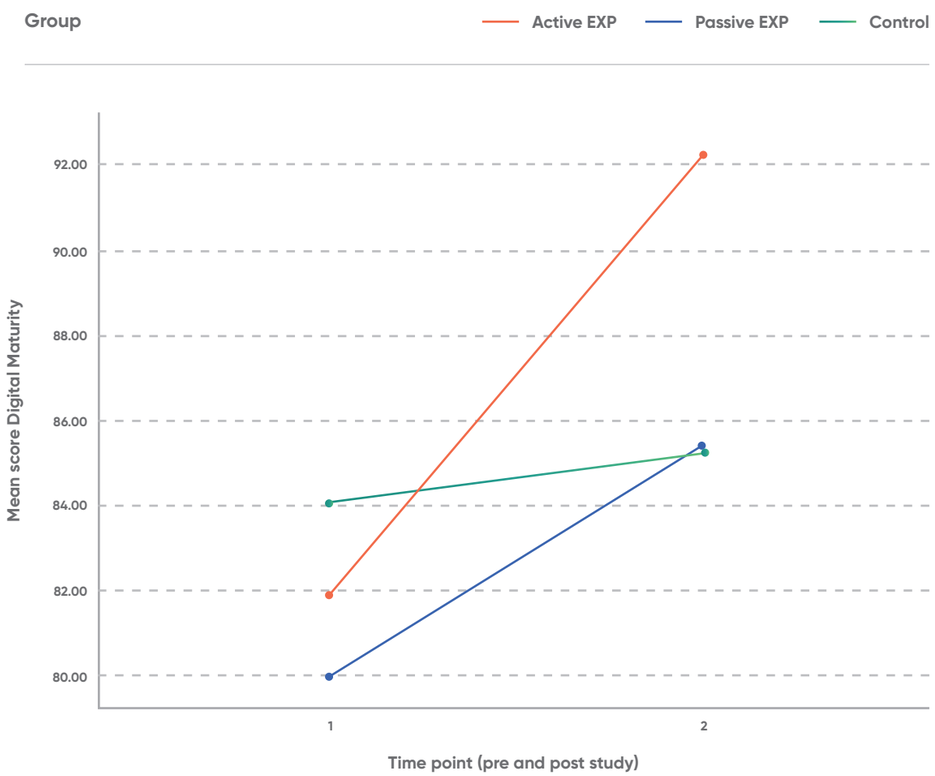
Digital Maturity was found to improve over the course of the intervention phase and this improvement was found to be highly statistically significant[10]. Thus, overall, participants in the study improved in their proficiency with regards to digital working tools. However, as illustrated by Figure 3, the improvement was not equal across the groups, with only a very slight improvement within the Control group, a larger improvement in the Passive Intervention group and the greatest improvement in the Active Intervention group.

The differential impact of the intervention on the three groups was found to be highly statistically significant, providing strong evidence that the engagement with Viva Insights and the Learning Pathways improved digital proficiency in line with participants levels of engagement. This is an important and interesting finding, which supports the adoption of these tools to enhance worker proficiency in using digital technologies.

[10]Main effect of intervention (pre, post) $F(1,167) = 33.71$, $p<0.001$; No main effect of group $F(2,167)<1$, NS); Interaction $F(2,167) = 8.84$, $p<0.001$

Figure 3: Change in Digital Maturity

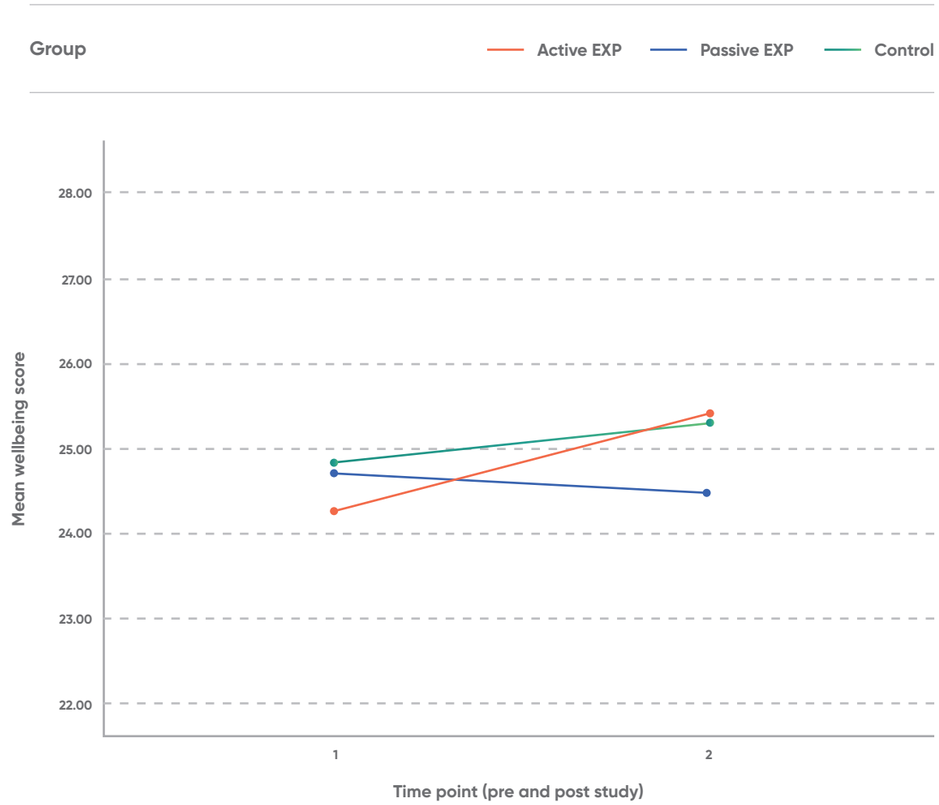
Digital Maturity Pre and Post Intervention by Group



On the basis of wellbeing scores taken pre and post intervention, there was no evidence of any notable change in wellbeing in any of the groups[11]; Scores for the three groups remained relatively constant (see Figure 4).

Figure 4. Change in Wellbeing

Wellbeing Pre and Post Intervention by Group

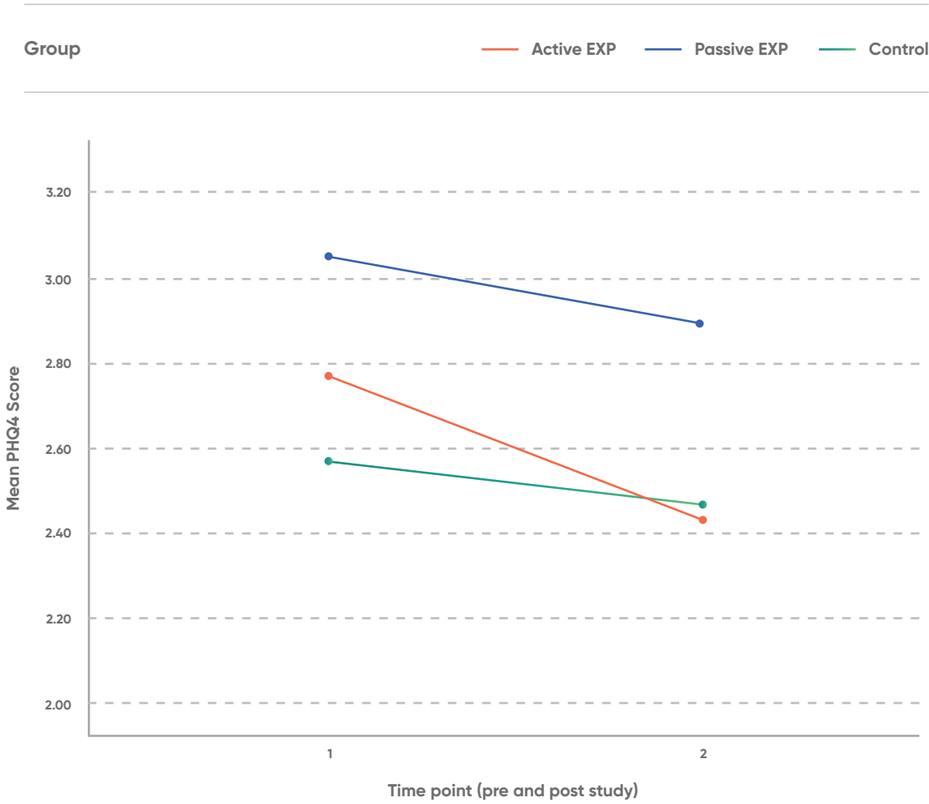


[11]No main effect of intervention (pre, post) F(1,167) = 1.90, NS; No main effect of group F(2,167)<1, NS; No interaction F(2,167) <1, NS

Changes in Mental Health pre to post intervention are illustrated in Figure 5. A high score on this scale relates to a greater severity of mental health difficulty (anxiety and depression combined). Slight trends towards Mental Health improvement were found over the course of the study, most notably within the Active Intervention group, but these trends were not significant[12]

Figure 5. Change in Mental Health

Mental Health (PHQ4 Scores) Pre and Post Intervention by Group

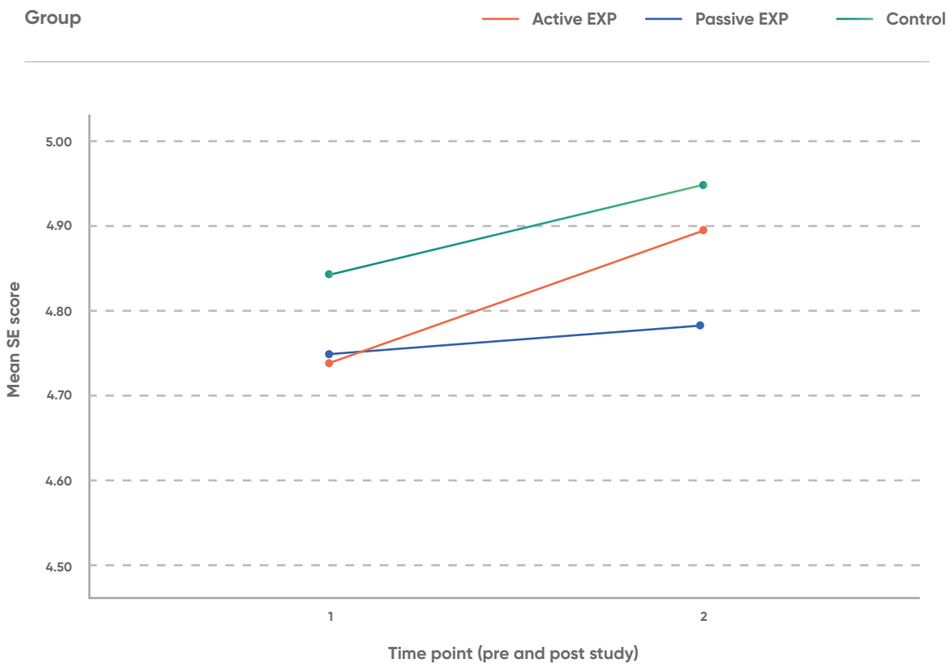


[12]No main effect of intervention (pre, post) F(1,167) <1, NS; No effect of group F(2,167)<1, NS; No interaction F(2,167) <1, NS

A measure of Occupational Self Efficacy was principally incorporated into the study to explore any role this personality factor may have on engagement with the intervention tools. However, it is possible that engaging with these tools in the Intervention phase may have empowered participants, impacting on their sense of Self Efficacy. Therefore, pre and post measures were reviewed here. Interestingly, there was a significant increase in Occupational Self Efficacy (see Figure 6), pre to post[13]. However, although this effect was strongest in the Active Intervention group, with the greatest increase in Self Efficacy being found in those actively engaging with the tools, this interaction did not reach statistical significance.

Figure 6. Change in Self Efficacy

Self Efficacy Pre and Post Intervention by Group



[13]Main effect of intervention (pre, post) F(1,167) = 5.27, p<0.05; No main effect of group F(2,167) <1, NS); No Interaction F(2,167) <1, NS.

Psychosocial Stress Risk

The remaining pre to post comparison measures relate to participant perceptions of 'psychosocial stress risks'. These are aspects of work that may result in negative psychological, physical and social outcomes such as stress, burnout and mental health difficulties. These risks arise from poor work design, organisational and management support, as well as a poor social context of work. Two measures of work-related psychosocial stress risk were included in the study, the SIT (HSE's general stress risk tool) and the ReSIT (Stress risk tool for remote and hybrid workers).

For the SIT stress risk domains, an interesting and perhaps unexpected pattern of results were found. For several of the key risk domains (Demands, Peer Support and Management Support) there were significant effects of the intervention on stress risks[14]. However, in each of these domains, the perception of stress risks was significantly worse over the study, which was not in the expected direction. The implications of this will be discussed in Section 4.

This pattern of results was also found in the Change domain, although this effect did not quite reach the level of required statistical significance. (See Figure 7; a high score on this scale reflects a healthy work environment, and low scores indicate greater stress risks.)

Of further interest is the differential effects of the Intervention phase on the groups, with three of the four domains illustrated below demonstrating a trend towards a greater increase in risk for those in the Active Intervention group. Although these group differences did not reach statistical significance, they provide an interesting trend worthy of consideration. Our reflections on these findings will be discussed in Section 4, combined with the wider results and the qualitative data.

The remaining SIT domains (Control, Role and Relationships) showed no significant changes pre to post intervention and no significant between group differences or interactions were found (all $p>0.05$).

[14]SIT Demands: Main effect of intervention (pre, post) $F(1,167) = 4.81$, $p<0.05$; No main effect of group $F(2,167) <1$, NS; Interaction $F(2,167) = 1.00$, NS
SIT Peer Support: Main effect of intervention (pre, post) $F(1,167) = 4.69$, $p<0.05$; No main effect of group $F(2,167) = 2.38$, NS; Interaction $F(2,167) <1$, NS
SIT Management Support: Main effect of intervention (pre, post) $F(1,167) = 6.35$ $p=0.013$; No main effect of group $F(2,167) = 1,10$ NS; no Interaction $F(2,167) = 1.87$, NS
SIT Change: Main effect of intervention (pre, post) $F(1,167) = 3.68$, $p=0.056$; No main effect of group $F(2,167) = 2.04$, NS; Interaction $F(2,167) <1$, NS

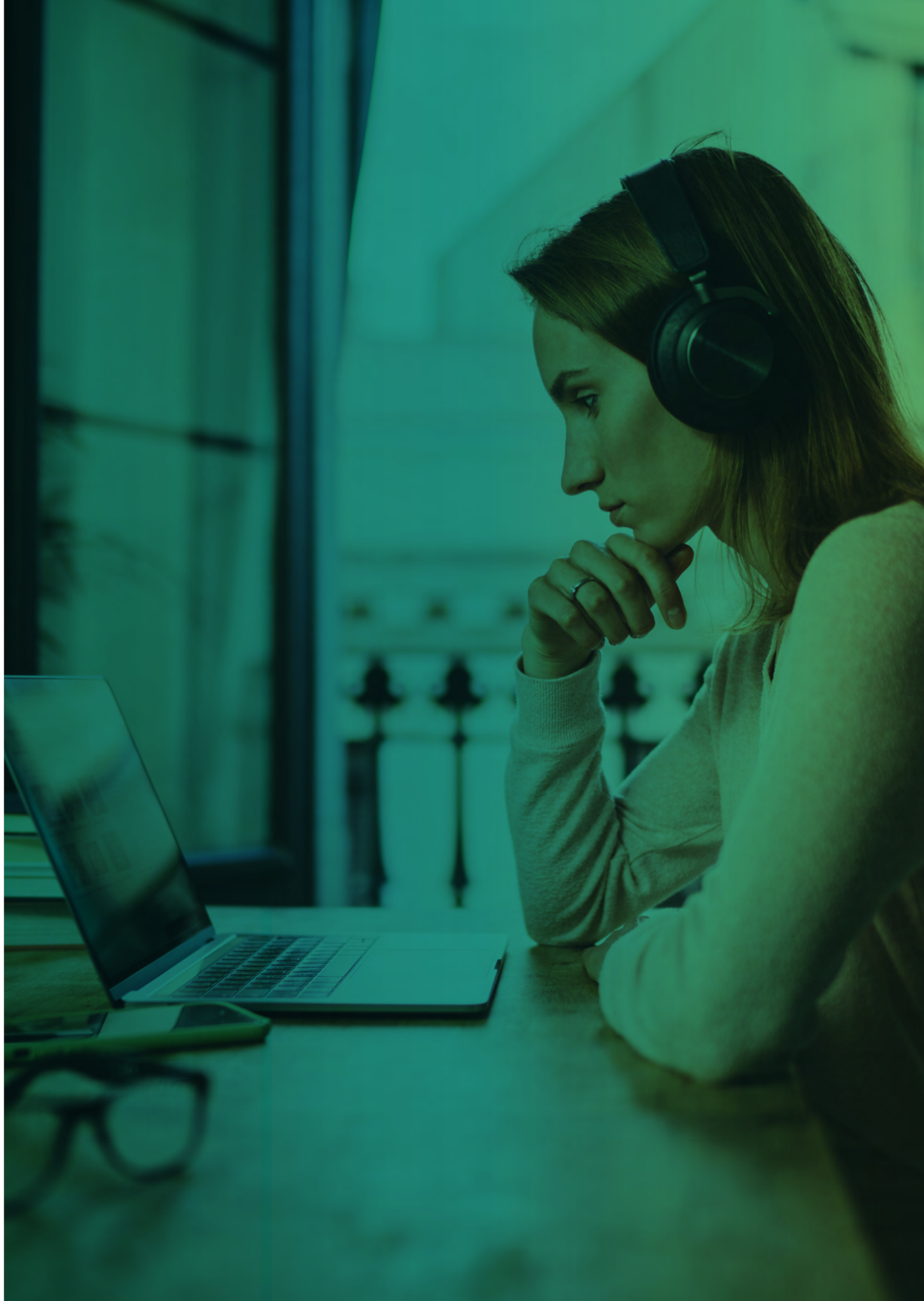
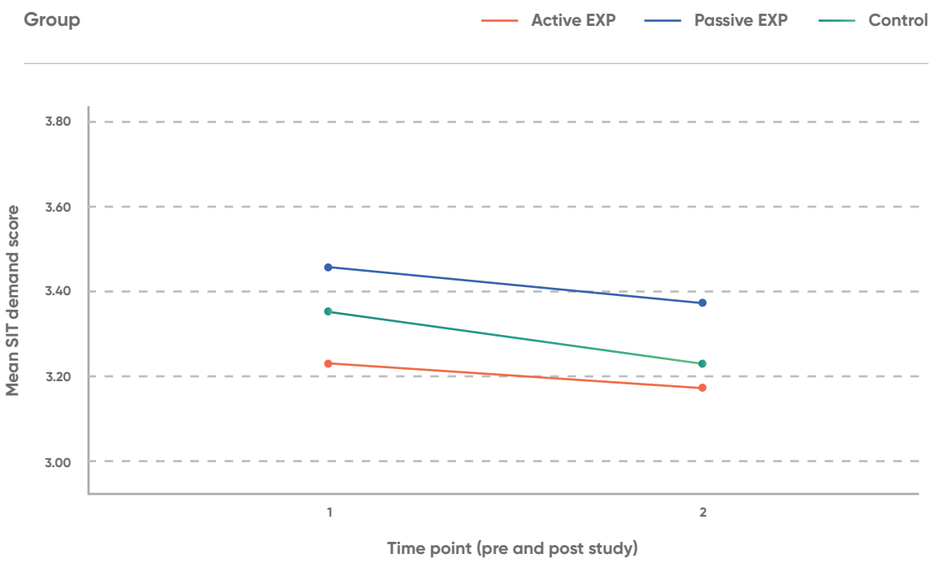
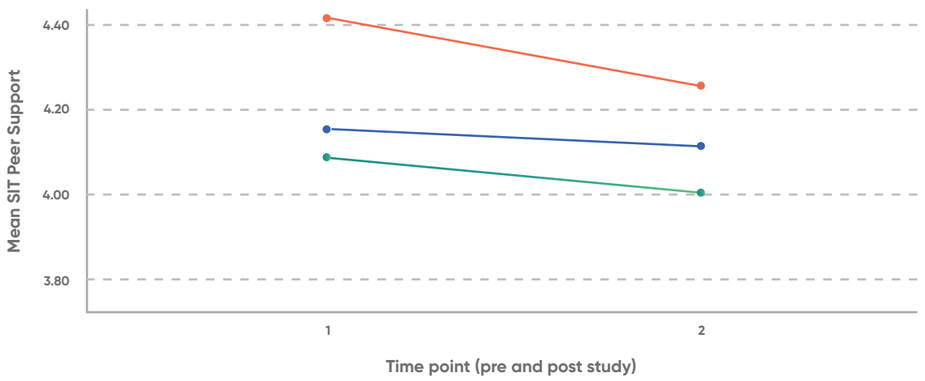


Figure 7. SIT Domains - Demands, Peer Support, Management Support & Change

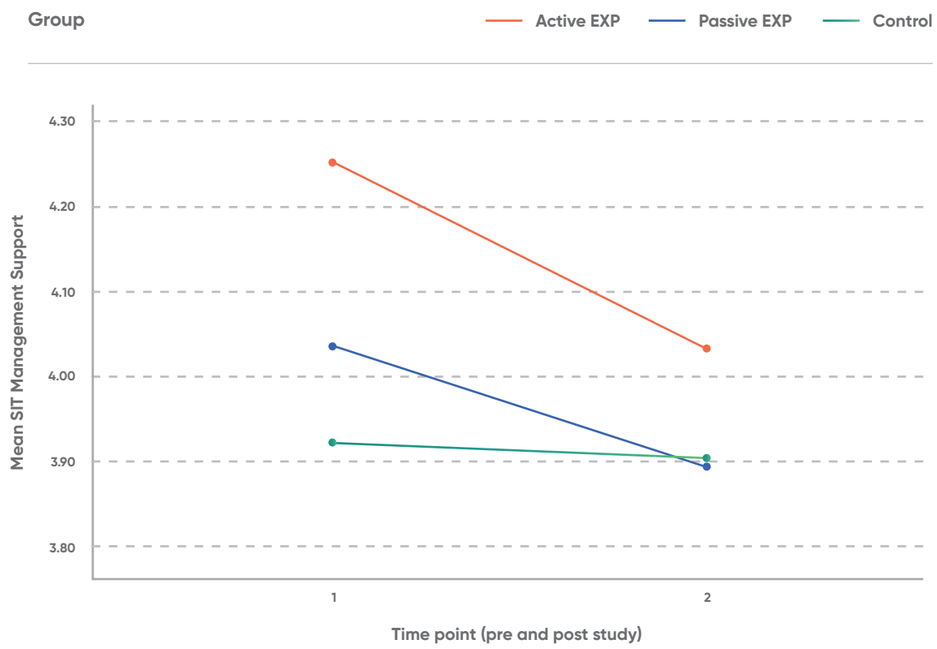
SIT Demands (reversed) Scores Pre to Post Intervention by Group



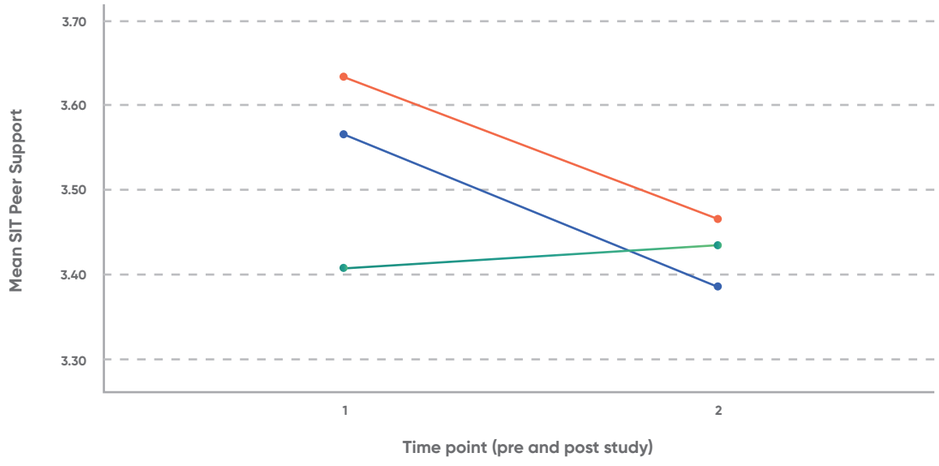
SIT Peer Support Pre to Post Intervention by Group



SIT Management Support Pre and Post by Group



SIT Change Pre to Post Intervention by Group

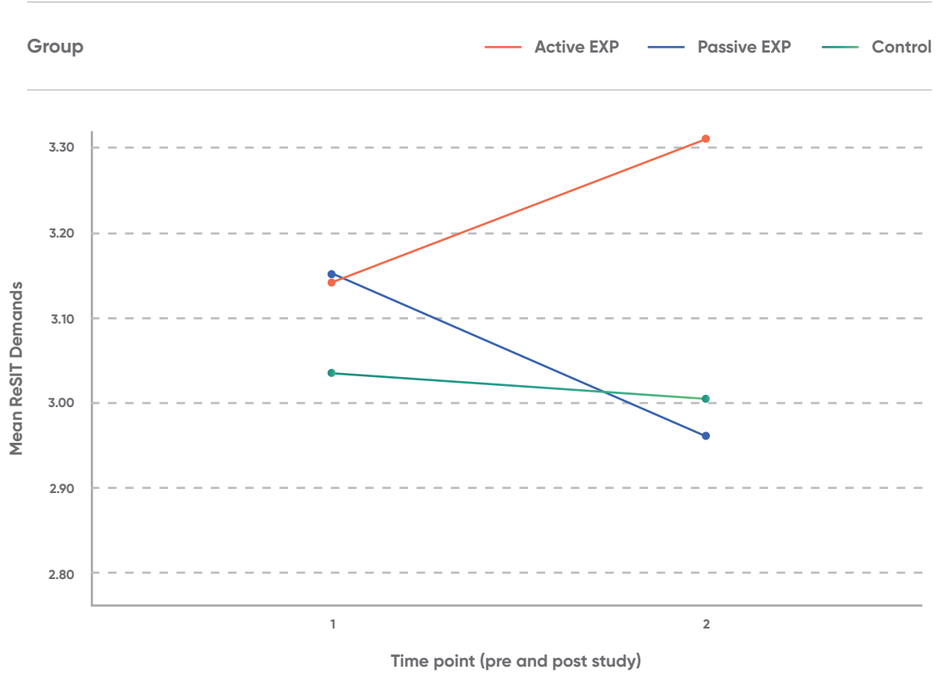


The second psychosocial stress risk measure, the ReSIT, addresses specific stress risks associated with working from home. Although closely related to the SIT, the patterns of data for the ReSIT domains were not all consistent with the findings for the SIT tool.

Perhaps most interesting is the ReSIT Demands domain (see Figure 8). Whilst a deterioration in Demands-related stress risks were identified within the SIT measure, a different picture emerged for the ReSIT Demands domain, with a significant interaction between groups and time[15], explained by an improvement in Demands-related stress risk only for the Active Intervention group. This finding is consistent with the study hypothesis and the specific aims of the intervention tools, and will be discussed in detail in Section 4.

Figure 8. Change in ReSIT Demands

ReSIT Demands (reversed) Pre and Post Intervention

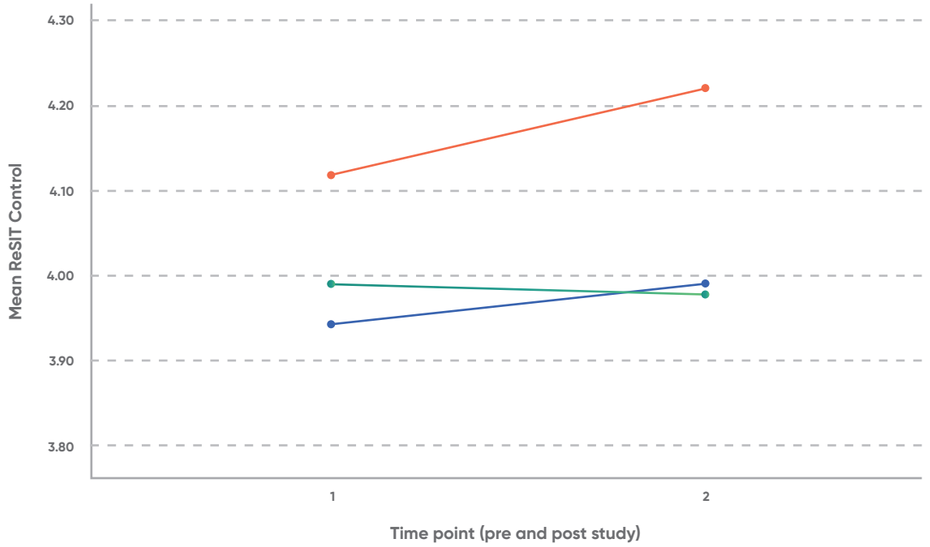


[15]ReSIT Demands: Main effect of intervention (pre, post) F(1,167) <1, NS; Main effect of group F(2,167) =1.36, NS; Interaction F(2,167) = 3.54, p<0.05.

The remaining analysis for the ReSIT domains found no significant effects of the intervention, no between group differences and no significant interactions (all $p>0.05$). However, some interesting trends were found, including a trend towards benefits for the Active Intervention group for ReSIT Control[16] (See Figure 9). This domain again represents an aspect of work-related stress risk that closely aligns with the goals of intervention tools, so it is interesting to see that small improvements in ReSIT Control were consistent with these goals and found for the Active Intervention group only. However, it is important to note that these trends were not found to be significant and should therefore be treated with caution.

Figure 9. Change in ReSIT Control

ReSIT Control Pre and Post Intervention by Group

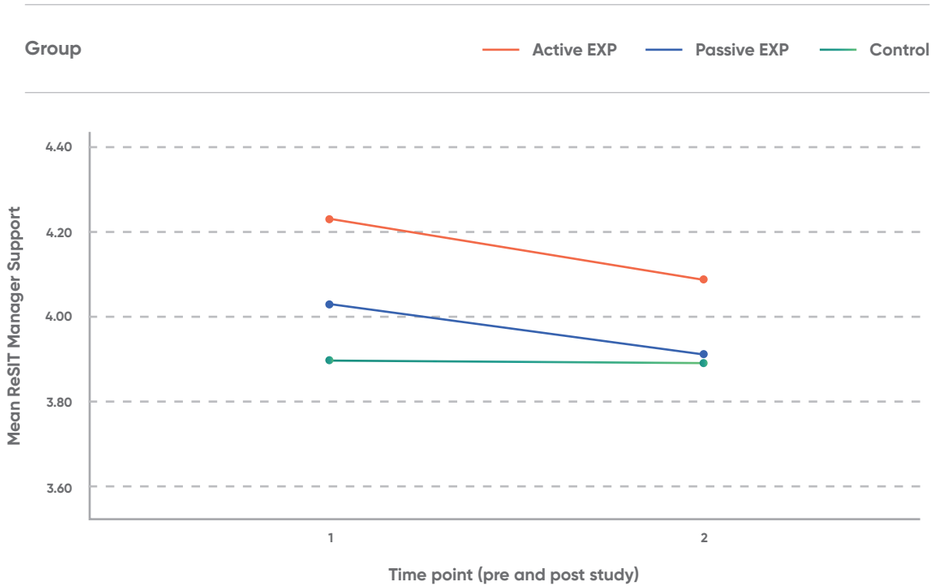


[16]ReSIT Control: Main effect of intervention (pre, post) F(1,167) <1, NS; Main effect of group F(2,167) <1, NS; Interaction F(2,167) =1.92, NS.

However, despite benefits for the Active Intervention group for ReSIT Demands and (to some extent) ReSIT Control, three further domains showed a worsening of stress risk for the Intervention group (See Figure 10): risks relating to Remote Manager Support and Remote Change were both found to worsen for the Intervention groups over the course of the study, for both Active and Passive participants, with no change for the Control group[17]. However, once again, these trends and small scale differences did not reach statistical significance.

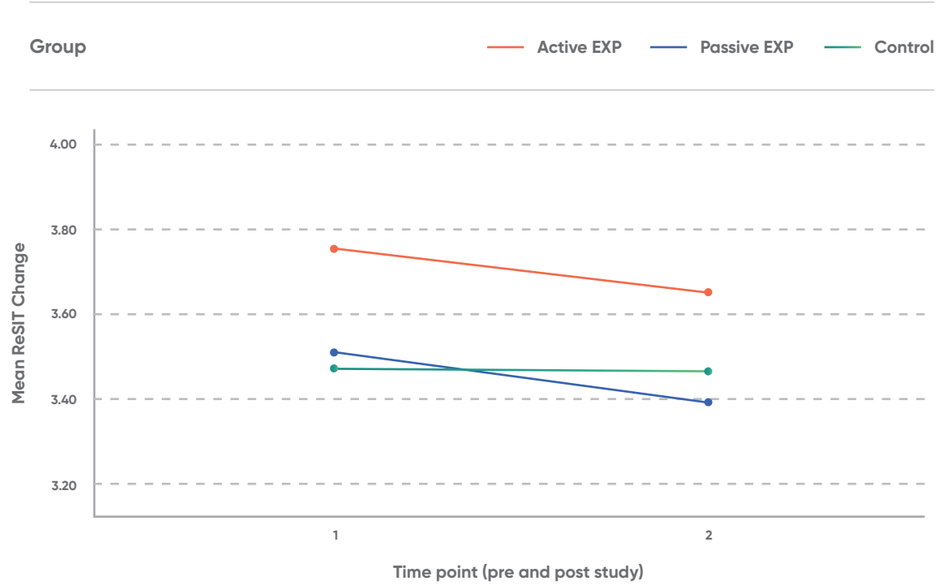
Figure 10. ReSIT Management Support and Change

ReSIT Manager Support Pre and Post Intervention by Group



[17]ReSIT Manager Support: Main effect of intervention (pre, post) F(1,167) = 2.27, NS; Main effect of group F(2,167) =1.35, NS; Interaction F(2,167) <1, NS.
ReSIT Change: Main effect of intervention (pre, post) F(1,167) = 1.59, NS; Main effect of group F(2,167) 1.43, NS; Interaction F(2,167) <1, NS.

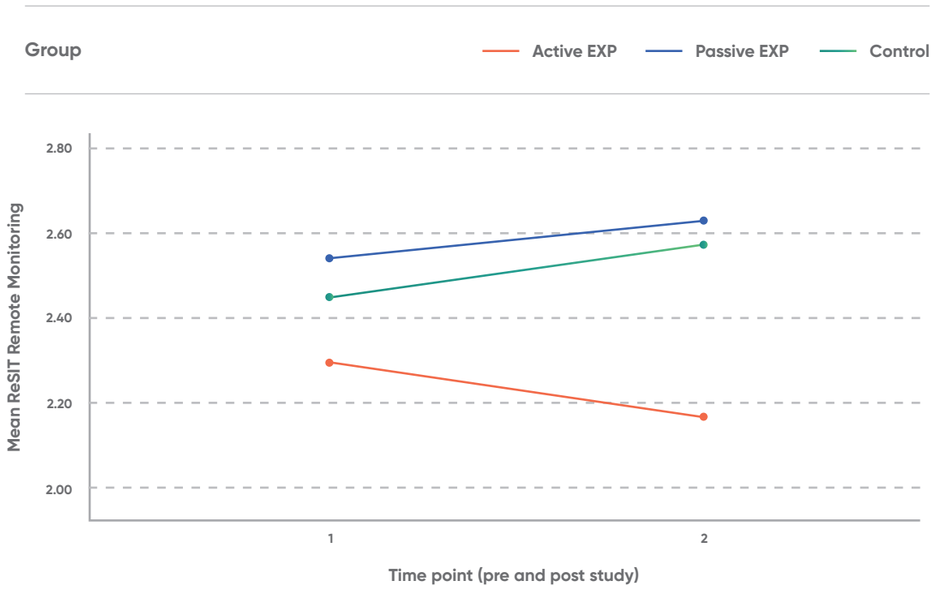
ReSIT Change Pre and Post Intervention by Group



Similarly, a trend towards worsening of stress risks was found for the Active Intervention group for the ReSIT domain Remote Monitoring (see Figure 11), with very small improvements in stress risks for the Passive Intervention group and the Control group, but a worsening of Remote Monitoring stress risks for the Active Intervention group. As above, these trends did not reach significance[18] and should be treated with caution, but it is worthy of note and perhaps further investigation, as monitoring of work patterns is a major aspect of Viva Insights.

Figure 11. ReSIT Remote Monitoring

ReSIT Remote Monitoring Pre and Post Intervention by Group



[18]ReSIT Remote Monitoring: Main effect of intervention (pre, post) F(1,167) <1, NS; Main effect of group F(2,167) 1.27, NS; Interaction F(2,167) <1, NS.

Daily Diary Monitoring

In addition to patterns of effects from pre to post intervention, the current study also used a Daily Diary (see Appendix 2) to monitor effects during the intervention on mood and evaluations of work. Daily measures were averaged for each quarter (3 week period) to support meaningful analysis. Patterns of effects are presented and analysed below. It is important to note when interpreting this daily diary data that mean scores have been calculated for four time periods during the intervention phase, each representing one quarter of the data collection period. Thus, time point one is not a baseline measure, but instead represents mean scores during the first three weeks of study participation.

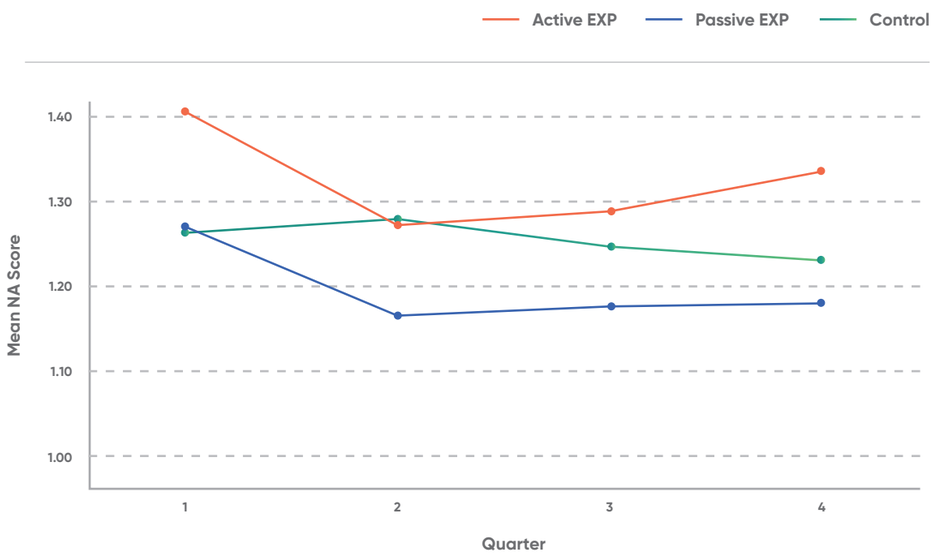
Positive and Negative Affect (mood) were found to have broadly similar trends of effects over the course of the study (See Figure 12). Both aspects of mood showed early improvements for both Intervention groups, specifically a reduction in NA and an increase in PA.

However, these differences represented only small changes in the context of the scale of responses. When subjected to Analysis of Variance, the trends in the Positive Affect (PA) scores were not found to be significant[19]. However, a highly significant effect of time on Negative Affect (NA) was found[20]. As illustrated in Figure 12, there was a reduction in NA in the early stages of the project.

However, this effect of improvement over time is attributable only to benefits in the Intervention groups, as the Control group's negative mood remained constant throughout the intervention period. Of further interest here is that this reduction in negative mood for the Intervention groups was largely maintained throughout the study, perhaps supporting sustained benefits.

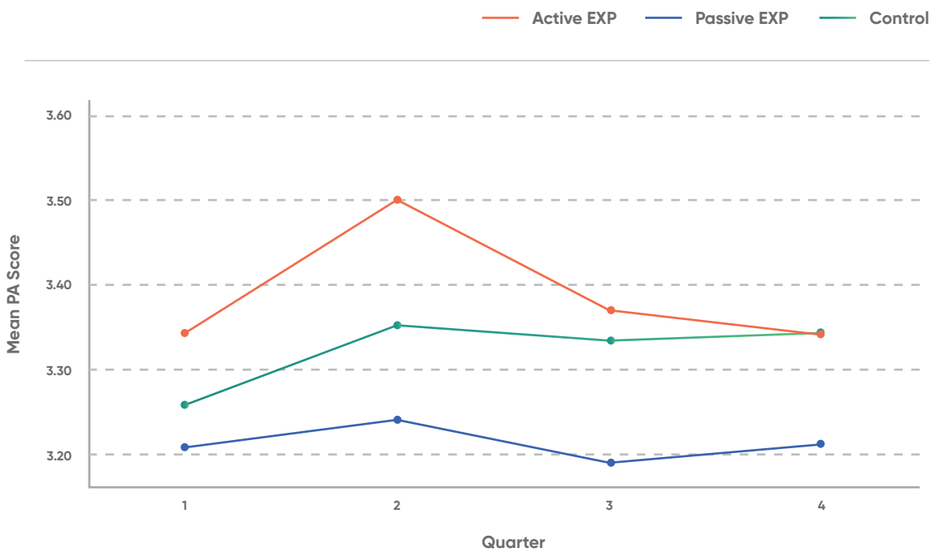
Figure 12. Patterns of Positive and Negative Affect over the 12 week Intervention Period (averaged over 3 weeks).

Diary Data: Negative Affect During Intervention



[19]Daily Diary Positive Affect: Main effect of intervention (quarters 1-4) F(3,459) =1.69, NS; Main effect of group F(2,153) <1, NS; Interaction F(6,459) <1, NS.
[20]Daily Diary Negative Affect: Main effect of intervention (quarters 1-4) F(3,459) =4.35, p<0.01; Main effect of group F(2,153) = 1.25, NS; Interaction F(6,459) =1.62, NS.

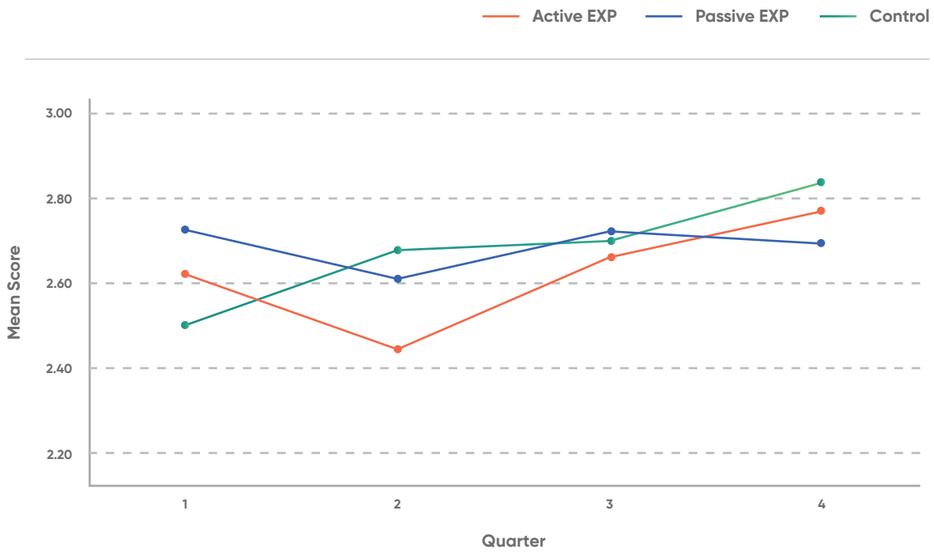
Diary Data: Positive Affect During Intervention



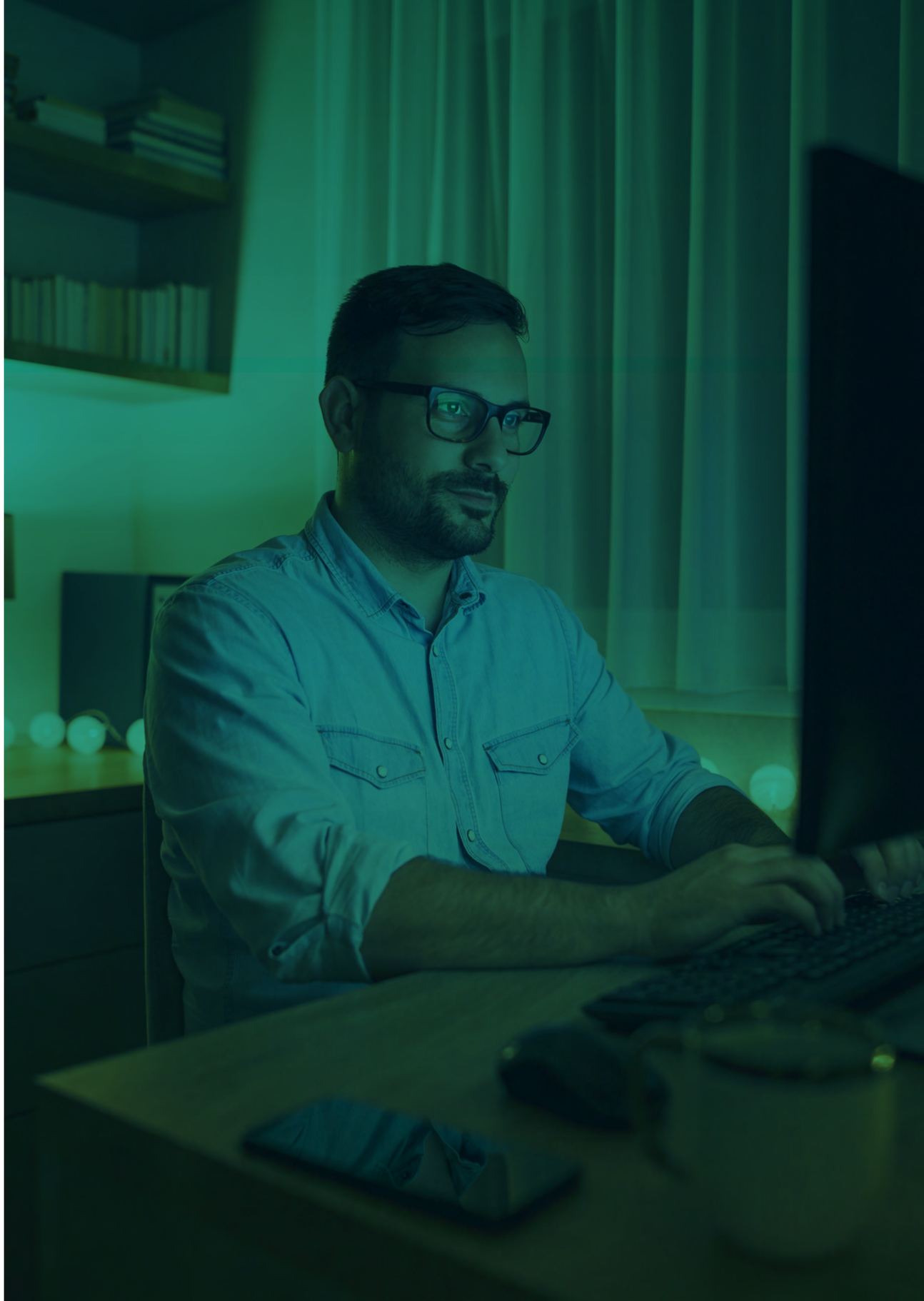
Further aspects of the daily diary were the evaluations of the work day. This included questions about the extent to which participants felt in control, felt able to focus, found interactions with colleagues to be supportive, found the day to be stressful, felt engaged with the organisation and felt positive about their work. A series of ANOVAs found no significant effects of the intervention period on these daily evaluations (all $p>0.05$), with the exception of 'I found work stressful today'[21]. However, as illustrated by Figure 13, the significant main effect of intervention time period was based on a rise in reported levels of stress for the Control and Active Intervention groups, so any changes could not be soley attributed to the intervention.

Figure 13. Changes in Daily Diary

Diary Work Evaluation: I found work stressful today



[21]Daily Diary I found work stressful today: Main effect of intervention (quarters 1-4) F(3,459) =3.89, p<0.01; Main effect of group F(2,153) <1, NS; Interaction F(6,459) =1.80, NS.



04. Discussion

Findings from Phase 1 of the Future Work Design project suggested that participants who were working remotely were experiencing particular difficulties in relation to the following risks:

- Feeling the need to be 'always on', even outside of working hours
- Feeling that they needed to be constantly available digitally during working hours due to feeling monitored
- Struggling to take breaks
- Back-to-back meetings
- Difficulties avoiding distractions and communications via multiple platforms
- Difficulties finding or protecting focused time

With these risks to employee wellbeing in mind, the main aim of this study has been to explore the impact of a digital intervention - Viva Insights and the Learning Pathways - on work and wellbeing. We aimed to address the following research questions:

RQ 1

When provided with the opportunity to engage with Viva Insights and the Learning Pathways, to what extent do individual workers engage with these resources?

RQ 2

What are the barriers to individual workers engaging with Viva Insights and the Learning Pathways?

RQ 3

When workers do engage with the intervention, is there a measurable impact on work and health-related factors such as: changes in digital maturity, wellbeing, mental health, self efficacy, evaluations of psychosocial stress risks and of the working day.

Having presented the qualitative and quantitative findings, we now discuss the meaning of these results in relation to these stress risks, from our perspective as researchers and psychologists working in the niche area of organisational stress management, with reference to the limitations of the research.

Research Questions 1 and 2

Regarding the extent to which individuals engaged with the resources, and the barriers and enablers in their doing so, approximately half of the intervention group reported using the Viva Insights intervention regularly (daily or weekly), with 20% reported not using it at all. The Learning Pathways were less well utilised, with two thirds of intervention participants reporting not using these tools at all. The primary reason cited for not using Viva Insights and the Learning Pathways was feeling that they did not have enough time to do so; a secondary reason for both resources was that some participants did not understand them or feel that they were relevant to them. Males were slightly more likely to engage with the resources than females, but females reported significantly more positive outcomes from engaging than their male counterparts. Participants aged 24 and under were the most likely group to use the resources, although this group represented only a small proportion of the total number in the intervention group.

We posited in the research design process that Viva Insights would be more likely to offer useful insights if the data it collected was rich, and that the richness of the data was dependent on an individual's use of the suite of Microsoft tools. This was the reason for the inclusion of the Digital Maturity measure and Learning Pathways resources in the study design. This was supported by qualitative data presented, suggesting that those whose roles involve work away from the computer and/or in other non-Microsoft programmes do not find the Viva Insights data presented back to them to be a useful reflection of their work. In some cases, this was reported to be a source of frustration. It was also supported by the finding that those participants who had a higher Digital Maturity score at the beginning of the study were more likely to engage with the resources.

These findings suggest that there is variability in engagement levels of Viva Insights, and that the roll-out of Viva Insights or similar resources within an organisation should be underpinned by learning resources, an organisation-wide and team-level encouragement to engage with the resources, and guidance for those for whom Viva Insights may be less relevant in terms of how to make the best of what it can offer them.

Research Question 3

Because there was variability in the extent to which participants in the Intervention group engaged with the resources, the Intervention group was separated into two groups for the purpose of analyses, leaving three conditions: Control, Active Intervention and Passive Intervention.

Improvements in Digital Maturity

When considering a change in Digital Maturity score as an outcome of the study overall, Digital Maturity scores improved significantly with regards to participant proficiency with digital tools during the 12 weeks of the study. However, this effect was clearly attributable to a significant interaction, with the greatest improvement in the Active Intervention group. Findings therefore demonstrate that the Active Intervention group benefitted most in terms of an improvement in their proficiency with digital working tools - and this change was of a meaningful magnitude. This suggests that regular and consistent engagement with the Learning Pathways and Viva Insights is related to an improvement in Digital Maturity - so, the resources led to positive outcomes in terms of upskilling the workforce for those who engaged.

Complex pattern of effect of intervention on Stress Risks

Perhaps the most interesting finding overall was the patterns observed for the ReSIT domains, which were designed in the first phase of this work to assess elements of risk associated with remote working. Remote Demands and Remote Control are the domains that relate most closely to the aims of the intervention tools, with an emphasis on managing and controlling healthy work flow. Consistent with this, there was a significant interaction for Remote Demands, which is explained by a reduction in demand-related stress risk only for the Active Intervention group. Demand-related stress risks increased for the Passive Intervention group and remained constant for the Control group. It is maybe helpful to reflect on the items from the ReSIT Demands domain:

- When working remotely, I feel the need to be constantly available
- I find it difficult to maintain healthy limits on my work hours when working remotely
- Working remotely feels monotonous
- I find it difficult to keep up with the volume of digital communication
- My workload feels more intense when I am working remotely

If we return to the risks highlighted at the beginning of this paper and this discussion that this study aimed to address through the exploration of Viva Insights as a digital intervention to reduce these risks, these items do appear to tap into those specific challenges - which makes sense, because they were derived from the same data as the stress risks that we identified earlier, and which formed the rationale for this work.

Similarly, for Remote Control, although not significant, trends were consistent with the pattern as for Remote Demands, with a trend towards a positive change for the Active Intervention group.

Importantly, these benefits appear to be highly specific and were not found to extend to either the remaining ReSIT domains or the SIT domains. In fact, Remote Manager Support, and Remote Change were both found to worsen for the Intervention group over the course of the study (although not significantly). There was also a (not significant) trend of increased concern about Remote Monitoring for the Active Intervention group, which may be related to increased self-monitoring and increased worries because of the digital monitoring being run by Viva Insights analytics.

This pattern of trends was also consistent with the significant changes in SIT risk scores from pre to post intervention. For SIT Demands, Peer Support and Management Support there were significant changes pre to post intervention, with the evaluation of stress risks being significantly worse after the intervention, which was not in the expected direction. This pattern of results was also found in the Change domain (although this effect did not quite reach the level of required statistical significance).

Possibly the most likely explanation for this pattern of effects is a contextual change beyond the control of the current study.

It is possible that time-of-year effects explain a general increase in actual stress risks facing participants during the course of the study. This would explain the general worsening of stress risks, but with only very specific improvements in those domains closely related to the goals of the study. This perhaps suggests a protective effect of Viva Insights, helping those participants who actively engaged to manage their work in the face of high demands.

This explanation is to some extent supported by the findings from the daily diary monitoring; For example, there was a significant (albeit small) increase in stress ratings for all groups, with participant ratings for the daily diary item 'I found work stressful today' increasing across the study. Interestingly, the only group that had a linear increase in stress evaluation was the Control group who reported being incrementally more stressed as the project went on. For both Active and Passive groups, there was an initial improvement in stress evaluation, but with an overall trend towards increasing levels of stress for all groups.

An alternative explanation to a general increase in real world workload, is that engaging with the intervention created negative effects - this could include the feelings of frustration described by participants during the focus groups relating to the attitudes and behaviours of colleagues. It is possible that the intervention led participants to adjust their own expectations of support from colleagues and managers, and/ or that their own attempts to implement healthier ways of working were thwarted by the attitudes and behaviours of others who were not engaged in the study. This explanation is supported by focus group findings; for example, some participants reported that although they tried to implement the strategies recommended by Viva Insights, sometimes with positive results, many found that colleagues did not respect the boundaries they tried to implement.

In summary, there was some evidence of positive and protective effects of the intervention, but only with regards to specific aspects of stress risk, most convincingly in Remote Demands. This is consistent with the qualitative results, supporting the value of Viva's integral features such as Focus Time and support for healthy diary management - Some participants clearly valued these features, as well as linking their use to direct benefits in their Wellbeing in the post study evaluation measures.

However, this experience was variable, perhaps depending on role characteristics and personal choices about tool engagement as well as behaviours from within and across teams.

Overall, this pattern of qualitative and quantitative data suggests Viva Insights and the Learning Pathways have value in reducing the specific stress risks most closely aligned with the challenges of remote working demands, but that these benefits are likely to be limited to these specific risks and be moderated by levels of engagement, team culture and role characteristics.

Wellbeing, Mental Health and Mood

Wellbeing was evaluated broadly in a number of ways within the study, Wellbeing and Mental Health measures were taken at the start and end of the study and mood was measured as part of a daily diary. No effects on Wellbeing were found, and average pre to post levels remained relatively constant for all three groups. With regards to pre and post Mental Health changes, there were slight trends towards Mental Health improvement over the course of the study, most notably within the Active Intervention group, but these trends were not significant.

This means that we cannot report a measurable change in Wellbeing or Mental Health in relation to the use of Viva Insights and the Learning Pathways.

It is possible that this is a limitation of the intervention, or of the suitability of the tools selected to measure any associated changes in Wellbeing and Mental Health, or most likely both; Wellbeing and Mental Health are diverse and complex states which are likely to be heavily influenced by many broad life and work factors. The measures selected for this study were standardised and have previously been used in similar studies, but are intended to measure broad Wellbeing and Mental Health, not work-specific states. Further, this intervention only targets individual ways of working, and does not remove the broad range of stress risks such as high workloads or difficulties in working relationships. Thus, it may be unrealistic to expect that the incremental changes encouraged through an individual's engagement with Viva Insights can have an impact on broad measures of general wellbeing.

There were, however, interesting effects of the intervention on daily mood as measured within the daily diary (Positive and Negative Affect Scale).

For Negative Affect, these changes were found to be significant and represented a small improvement in daily NA for the Intervention group. Of particular interest here is that this reduction in negative mood was largely maintained throughout the study, perhaps supporting sustained benefits of long-term tool usage. So here, again, we see some support for the potential positive impacts through engagement with Viva Insights.

In line with this positive evidence of the impact of the intervention on mood, the self-report evaluation data from the Intervention group at the end of the study suggests that 47% of participants believed it had a positive impact on their wellbeing, and 46% believed it had improved their productivity. As outlined above, these positive evaluations were consistent with some very powerful positive statements within the qualitative data. However, it should also be noted that more than half of the participants felt that there had been no impact on wellbeing, productivity, and work/life balance, and 70% felt engagement with Viva Insights had no impact on working relationships. In summary, this suggests a varied experience of using Viva Insights and that positive effects on mood were present, but not experienced by all.

Daily Diary

One final point worthy of consideration is the impact of the daily diary. This aspect of the study design was intended as a measurement tool for gathering state data, rather than as an intervention. However, there were some striking qualitative findings, suggesting positive participant experiences of reflecting whilst completing the daily diary. In particular, participants noted the opportunity for closure on their day as well as an opportunity to reflect on what had influenced their wellbeing, with some participants then acting upon these reflections to make changes to their working habits. This was partially supported by the self-report evaluation data, finding nearly half of the Intervention group and 39% of the Control group reported positive impacts on wellbeing and work.

This positive aspect of participating in the study may, at least partially, explain the general trend towards improvement in Mental Health for the whole sample, but as this was again not statistically significant, it is important not to over interpret this finding. Nonetheless, compelling qualitative data regarding the value of the daily diary, might support the value of daily reflective practice for work and wellbeing.

When taken together, whilst there is a lack of statistically significant results, the frequent measurable trends suggesting slight improvements in key outcomes (mood, mental health and self efficacy) together with a significant improvement in Digital Maturity and specific remote working stress risk, all of which were greater in the Active Intervention group than in the Passive and Control groups, do suggest that there could be positive outcomes to be gained in these areas through the use of Viva Insights. It could be that the intervention was not long enough to see significant effects for these measures, or that the measurement tools themselves were not sufficiently sensitive to meaningful changes. It may also be the case that whilst there may have been a positive impact from engagement with Viva Insights, a broad range of uncontrollable factors were undoubtedly at play and may have impacted the wellbeing of individuals, making it challenging to isolate cause-and-effect, and less likely that a positive effect would be measurable. It may instead be the case that, rather than leading to improvements in wellbeing, the daily diary and tools had a buffering effect for those who used them, preventing deterioration in mental health and mood due to external, uncontrollable factors.

4.2 Implications

The findings suggest that Viva Insights does improve evaluations of some specific stress risks for those who engage with the tool. With regards to wellbeing, the findings of this study do not evidence a very clear impact of engagement with Viva Insights. However, there are several findings that point towards Viva Insights as a tool that has potential to improve some work and health-related outcomes, particularly

- ReSIT demands improvements
- decrease in Negative Affect for the Active Intervention group
- trends towards improvements in Mental Health and Self Efficacy
- increase in Digital Maturity

However, improvements may be more observable and impactful if the tool is rolled out across an organisation, with supportive resources and a programme that aims to educate people at the organisational level about the importance of shared expectations of and adherence to healthy ways of working.

The findings should provide organisations with evidence to support decision-making about the roll-out of interventions such as Viva Insights.

4.3 Limitations

A major limitation of this study is the fact that it was an applied research project with limited ability to control conditions and therefore there were many extraneous variables (aspects of work that we could not investigate or control, which may have influenced study results). For example: participants were recruited from a broad range of role types and levels across four organisations. We were unable to control work characteristics or sources of psychosocial stress risk related to these differences, such as work demands, interactions with colleagues, interactions with managers, and organisational change.

The study began just before the school summer holidays, and ended several weeks after schools had gone back. This meant that at the beginning of the study, most participants will have been working towards taking a period of summer leave, whilst towards the end, most had returned from leave to focus on work for a prolonged period. Contextually in many organisations, the summer period does tend to quieten down and the pace of work slows whilst many people take their leave to coincide with family breaks, and when a majority of the workforce returns in early September, the pace of work and communications again increase, with an accompanying increase in demands as a result. It is possible that this is one explanation for the observed overall increase in perceptions of stress between the start and end of the study.

Whilst we did not stipulate that all participants should be remote workers, because the participant pool consisted of people in Business Support functions, all participants were remote or hybrid workers during this study. Therefore, the findings of this work are likely to be generalisable to remote workers specifically, and to computer-based workers generally, particularly within local authority settings, but with relevance for any remote or hybrid computer-based worker in a range of organisational contexts. Our aim was to use Viva Insights as one example of similar products available from a range of providers. Because our findings specifically relate to Viva Insights, they are discussed here in relation to Viva Insights specifically, but it is likely that studies using similar products would provide similar findings - further research is needed to confirm this.

4.4 Recommendations

Viva Insights may offer positive outcomes in worker perceptions of remote working demands, wellbeing and productivity, but this outcome is more likely to be achieved when it forms part of efforts to shift team or organisational culture towards ‘healthy’ ways of working. Therefore, we recommend that if the organisational goal is to improve worker wellbeing, Viva Insights is rolled out as part of a programme that aims to encourage its use and adherence to its principles, with senior leaders and managers also modelling these. We also make the following recommendations:

- Viva Insights and similar tools should always be adopted as a part of a wider package of interventions that include stress risk assessment, support and training.
- Supportive learning resources such as the Learning Pathways videos are important to help ensure that employees are able to get the most out of their Microsoft Suite of tools.
- Fundamental organisational commitment is critical in encouraging the use of Viva Insights and of the Learning Pathways during roll-out.
- Organisation-wide approaches to healthy inter- and intra-team etiquette should be underpinned by team and one-to-one discussions about engagement with Viva Insights.
- Support for those whose roles involve significant time away from computers and Microsoft tools so they and their managers are clear about how useful Viva Insights is likely to be for them - it may be worth thinking with these individuals about how the working practices that Viva Insights data nudges them towards (such as focus time, records of time spent on certain tasks) can be implemented for them in the absence of useful Viva Insights data. It would also be worth clarifying for them that they are not being monitored on the time they spend engaging with a computer, as their outputs are not related to computer-time.
- More needs to be done to understand the wider work characteristics of Manager Support, Peer Support, Change, Role and Relationships in these specific work situations.

4.5 Final Thoughts

The qualitative data provided many examples of participants who felt they had benefitted from the working practices encouraged by the tool. However, there were also frequent examples of those who felt that they had been prevented from realising its full benefits due to the behaviours of others in their organisation. This suggests that organisational culture and etiquette remain key barriers to the efforts made by some to implement healthy working practices. The qualitative findings suggest that Viva Insights and similar tools could be useful to help facilitate the cultivation of a common understanding of appropriate behaviour around communication and work-related boundaries if implemented for and used by everyone within and across teams. If used in teams or organisations who seek to get the best out of their people by preparing them for optimal performance at work, there is likely to be a recognition of the need for healthy boundaries to facilitate wellbeing and productivity.

As part of a holistic package of wellbeing offerings that also includes preventative approaches such as risk assessments and mitigation strategies, and support with symptoms such as Mental Health First Aid and Counselling, tools like Viva Insights have been demonstrated to make a meaningful contribution towards a healthy work landscape. By gently nudging employees towards healthy attitudes and behaviours around work, it may contribute to the transformation of organisational culture and increase productivity in ways that enhance the sustainability of the workforce.

Appendices

Appendix 1

Full sample demographic data and analysis of group bias

Participants were recruited from across the 4 local authorities with *n*=79 (29%) in East Riding and North Lincolnshire, *n*=67 (24%) in Hull and *n*=51 (18.5%) in North East Lincolnshire.

To ensure there was no bias in local authority allocation to Intervention/Control condition, a chi-square test of independence was performed to examine the relation between group and local authority. The relation between these variables was not significant, (3, *N* = 276) = 1.1, *p* = .771, demonstrating no bias in condition allocation.

	Group					
	Intervention		Control		Total	
Local Authority	Count	Column N %	Count	Column N %	Count	Column N %
ERYC	40	29.6%	39	27.7%	79	28.6%
HCC	29	21.5%	38	27.0%	67	24.3%
NEL	26	19.3%	25	17.7%	51	18.5%
NL	40	29.6%	39	27.7%	79	28.6%
Total	**135**	**100.0%**	**141**	**100.0%**	**276**	**100.0%**

The overall sample was very limited in representing diverse ethnic groups, as 98% of participants were from a white British background. No difference in ethnic diversity was found between Intervention and Control groups.

	Group					
	Intervention		Control		Total	
Ethnicity	Count	Column N %	Count	Column N %	Count	Column N %
Asian / Asian British	0	0.0%	1	0.7%	1	0.4%
Black / Black British	1	0.7%	0	0.0%	1	0.4%
Mixed / Multiple ethnicities	0	0.0%	1	0.7%	1	0.4%
Other white	2	1.5%	2	1.4%	4	1.4%
White - British / English / Welsh / Scottish / Northern Irish	132	97.8%	137	97.2%	269	97.5%
Total	**135**	**100.0%**	**141**	**100.0%**	**276**	**100.0%**

A greater proportion (65%) of the Control group were women, compared with the Intervention group (61%) but this difference did not reach the level of statistical significance (1, *N* = 276) = 6.0, *p* = .438.

	Group					
	EXP		Control		Total	
Gender	Count	Column N %	Count	Column N %	Count	Column N %
Female	82	60.7%	92	65.2%	174	63.0%
Male	53	39.3%	49	34.8%	102	37.0%
Total	**135**	**100.0%**	**141**	**100.0%**	**276**	**100.0%**

Participant age ranged from 19 to 66 years. Average (mean) age of Control participants was *M*=42.8 years (*SD* = 10.6) and mean age for the Intervention group was *M*=43.4 years (*SD* = 10.6) but there was no significant age difference by group, *t*(274) = 0.45, *p* = .652.

	Group					
	Intervention		Control		Total	
Age Group	Count	Column N %	Count	Column N %	Count	Column N %
Under 25	5	3.7%	6	4.3%	11	4.0%
25-34	21	15.6%	28	19.9%	49	17.8%
35-44	49	36.3%	43	30.5%	92	33.3%
45-54	36	26.7%	45	31.9%	81	29.3%
55+	24	17.8%	19	13.5%	43	15.6%
Total	**135**	**100.0%**	**141**	**100.0%**	**276**	**100.0%**

Approximately two-thirds of participants (65%) were team members and one in three had a senior role (team manager or senior manager. No difference between the Intervention and Control groups was detected (2, *N* = 276) = 0.8, *p* = .665

	Group					
	Intervention		Control		Total	
Seniority	Count	Column N %	Count	Column N %	Count	Column N %
Senior Manager	10	7.4%	7	5.0%	17	6.2%
Team Manager	37	27.4%	42	29.8%	79	28.6%
Team Member	88	65.2%	92	65.2%	180	65.2%
Total	**135**	**100.0%**	**141**	**100.0%**	**276**	**100.0%**

Average (mean) length of service of Control participants was *M*=14.4 years (*SD* = 10.7) and mean length of service for the Intervention group was *M*=14.5 years (*SD* = 10.3) but there was no significant difference in length of service by group, $t(274) = 0.15$, $p = .883$.

	Group					
	EXP		Control		Total	
Length	**Count**	**Column N %**	**Count**	**Column N %**	**Count**	**Column N %**
Up to 1 year	17	12.6%	16	11.3%	33	12.0%
2-10 years	32	23.7%	40	28.4%	72	26.1%
11-20 years	50	37.0%	51	36.2%	101	36.6%
More than 20 years	36	26.7%	34	24.1%	70	25.4%
Total	**135**	**100.0%**	**141**	**100.0%**	**276**	**100.0%**

Appendix 2

Bespoke Daily Diary Questions

To what extent were your feelings today linked to work events or circumstances?	Not at all linked	A little	Moderately	Quite a lot	Very closely linked
Thinking about my work today..... How intense were the following demands?	**Not at all intense**	**A little**	**Moderately**	**Quite intense**	**Extremely intense**
Mental demands					
Emotional demands					
Physical demands					
	Not at all intense	**A little**	**Moderately**	**Quite intense**	**Extremely intense**
I felt in control today					
I felt able to focus today					
Contact with colleagues felt supportive today					
I found work stressful today					
I felt engaged with my organisation					
I felt positive about my work today					

Appendix 3

Digital Maturity Measure

Please rate how proficient you are for each of the following statements. If you do not understand a statement or are not familiar with the tools listed, please rate it '1'.

	1 = Not at all proficient 5 = Extremely proficient
I can send & receive email at work	1 2 3 4 5
I can initiate & respond to chat digitally at work (E.g. Teams chat, Yammer)	1 2 3 4 5
I can make an appointment in my digital calendar	1 2 3 4 5
I can view other users' digital calendars	1 2 3 4 5
I can categorise meetings in my digital calendar	1 2 3 4 5
I can create and manage tasks for myself digitally	1 2 3 4 5
I can access digital work-related wellbeing tools such as MyAnalytics & reflect on how this relates to my ways of working	1 2 3 4 5
I know how to access digital training and learning materials for my continuous professional development needs	1 2 3 4 5
I can create Documents (Word)	1 2 3 4 5
I can create Presentations (PowerPoint)	1 2 3 4 5
I can create Spreadsheets (Excel)	1 2 3 4 5
I can store, access & share documents (e.g. in OneDrive, SharePoint, Teams, Google Docs)	1 2 3 4 5
I can collaborate on documents with colleagues (e.g. in OneDrive, SharePoint, Teams, Google Docs)	1 2 3 4 5
I know how to classify documents for intended audiences for digital security purposes	1 2 3 4 5
I can create and share digital notes (e.g. OneNote, Evernote, Apple Notes)	1 2 3 4 5
I know how to create & manage automated workflow for myself(e.g. Flow, PowerAutomate, Outlook Rules)	1 2 3 4 5
I know how to create applications & automate processes for my team(s) to improve user experience and efficiency (e.g. Flow, PowerAutomate)	1 2 3 4 5
I know how to create and allocate tasks within a team (e.g. in Planner/MS Teams)	1 2 3 4 5
I know how to create content optimised for digital (e.g. Sway)	1 2 3 4 5
I know how to ensure content is accessible for different peoples needs (e.g. using the Accessibility Checker, Translation Services, Readability)	1 2 3 4 5
I can use tools such as immersive reader, captioning, dictate, magnifier, editor, and dark mode to make digital content work for my needs	1 2 3 4 5
I know how to gain insights from reports in Power BI Tools (Access, manage, produce and share)	1 2 3 4 5
I can search for content that is relevant and being shared with me using tools such as Delve or Windows Search	1 2 3 4 5
I know how to manage my work brand & share my skills (e.g. LinkedIn presence, Skill Directories, WorkTribe, Web profiles)	1 2 3 4 5
I understand the potential impact of Artificial Intelligence and Cognitive Services in my role & service area	1 2 3 4 5

Appendix 4

Explaining the measures

Explaining the measures	
Digital Maturity	The Digital Maturity measure was developed for the Future Work Design project with important input and insight from Microsoft. This was used to measure the extent to which an individual is proficient in using the range of digital tools in the Microsoft Suite, on a five-point scale. It was developed because it was recognised that the benefits of Viva Insights are contingent on the use of Microsoft Tools. To evaluate the usefulness of Viva Insights, it was necessary to understand individual differences in Digital Maturity at the pre-intervention stage, and to measure any changes in Digital Maturity at the post-intervention stage. The Learning Pathways that were provided as part of this project were designed to support individuals in developing their skills in the areas identified in the Digital Maturity measure. It is included in Appendix 3 of this document.
Occupational Self-efficacy	Self efficacy is defined as a person's belief in their ability to succeed in the tasks they attempt, and meet the challenges they face. Occupational self-efficacy has been explored as a specific work-related concept referring to the belief held by an individual that they have the competence to fulfil work-related tasks. Rigotti, T., Schyns, B., & Mohr, G. (2008). A short version of the occupational self efficacy scale: Structural and construct validity across five countries. *Journal of Career Assessment*, 16(2), 238 - 255.
Mental Health Wellbeing Measure	The Patient Health Questionnaire (PHQ-4) is an ultra-brief mental health screening tool commonly used in clinical practice and research (anxiety and depression). It consists of four questions, two measuring anxiety and two measuring depression, on a four-point likert scale. The total PHQ–4 score provides an overall measure of symptom burden, as well as functional impairment and disability, with higher scores indicating increased burden. Kroenke K, Spitzer RL, Williams JB, Löwe B. *An ultra-brief screening scale for anxiety and depression: the PHQ-4. Psychosomatics*. 2009 Nov, Dec;50(6):613, 21. doi: 10.1176/appi.psy.50.6.613. PMID: 19996233.
Subjective wellbeing measure WEMWBS	The Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) is a 14-item measure of mental wellbeing within which all items are worded positively. They cover feelings and functioning aspect of mental wellbeing, which the authors posit makes the concept of mental wellbeing more accessible. It therefore contributes a positive psychology approach to the measurement of wellbeing not addressed by using the PHQ-4 which measures only symptomology of poor mental health. The WEMWBS has been used widely in research, monitoring and evaluation work. Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., Parkinson, J., Secker, J., & Stewart-Brown, S. (2007). The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): Development and UK validation. *Health and Quality of Life Outcomes*, 5, Article 63.
Management Standards Indicator Tool (SIT)	HSE's Management Standards represent a set of conditions that, if present: • demonstrate good practice through a step-by-step risk assessment approach • allow assessment of the current situation using pre-existing data, surveys and other techniques • promote active discussion and working in partnership with employees and their representatives, to help decide on practical improvements that can be made • help simplify risk assessment for work-related stress by: - identifying the main risk factors - helping employers focus on the underlying causes and their prevention - providing a yardstick by which organisations can gauge their performance in tackling the key causes of stress They cover six key areas of work design that, if not properly managed, are associated with poor health, lower productivity and increased accident and sickness absence rates. The Management Standards are divided into six domains: • Demands – this includes issues such as workload, work patterns and the work environment • Control – how much say the person has in the way they do their work • Support – this includes Management Support and Peer Support and encompasses the encouragement, sponsorship and resources provided by the organisation, line management and colleagues • Relationships – this includes promoting positive working to avoid conflict and dealing with unacceptable behaviour • Role – whether people understand their role within the organisation and whether the organisation ensures that they do not have conflicting roles • Change – how organisational change (large or small) is managed and communicated in the organisation The HSE's Management Standards Stress Indicator Tool (SIT) is a 35-item measure of stress risk in the workplace across these domains of stress risk. Health & Safety Executive (2004). *HSE management standards indicator tool*. www.hse.gov.uk/stress/assets/docs/indicatortool.pdf.

Remote Working Stress Indicator Tool (ReSIT)	The ReSIT was developed and refined during Future Work Design Phases 1 and 2. This tool was developed following a large-scale qualitative study of 32 focus groups. Participants were a diverse range of Local Authority workers, many of whom were required to work from home during the first COVID lockdown (March – July 2020). The data from this study was analysed into themes, which are described in full in the project report. From this qualitative data, a set of stress risk items were generated, which were consistent with the stress risk model of the HSE Management Standards. The aim of the tool is to provide a mechanism for organisations to explore and assess the stress risks associated with remote working. The domains are in line with the seven stress risk domains of the SIT, but with the addition of two new areas of interest, Remote Digital Enablers and Remote Digital Risks. To reduce the item scores into their subscale means, averages of the seven stress risk domains can be calculated, but items representing the two new domains (Remote Digital Enablers and Remote Digital Risks) should only be viewed as sets of individual items, as they incorporate a diversity of risks, which may not be meaningfully represented by a mean score. Cunnah, K. & Earle, F. (2021). *Remote Working Stress Risk Assessment Tool*. University of Hull. https://humanfactors.hull.ac.uk/wp-content/uploads/2020/11/FWD-Risk-Assessment-Tool-v2.pdf
The Positive and Negative Affect Schedule (PANAS) short-form version	The Positive and Negative Affect Schedule (PANAS) is a scale consisiting of a series of words that describe feelings and emotions. The original PANAS consists of 20 items rated on a 5-point Likert scale. The shortform version used in this work consists of 10 items. Half of the items measure positive affect (the experience of positive emotions) and half measure negative affect (the experience of negative emotions). It has been widely used as a self-report measure of affect in community, clinical and research contexts. Thompson, E.R. (2007). Development and validation of an internationally reliable short-form of the Positive and Negative Affect Schedule (PANAS). *Journal of Cross-Cultural Psychology*, 38-227.

Appendix 5

Analysis of group scores for baseline measures

Digital maturity ranged from 43 to 125. Although Control (M = 85, SD = 17.7) attained higher scores than the Intervention group (M = 84, SD = 18.6), there was no significant difference in digital maturity score between the control and experimental group, $t(274) = 0.51$, $p = .739$.

	Group					
	Intervention		Control		Total	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Digital Maturity	84.41	18.61	85.14	17.65	84.79	18.10

The key measures in the study are wellbeing, Self-Efficacy, Mental Health (PHQ anxiety and depression), SIT and ReSIT measures of stress risk. It is important that there are no significant differences between the Intervention and Control groups and, in summary, no significant differences were found between the Intervention group and the Control group across any of the measures, supporting the lack of bias in group allocation.

	Experimental	Control	Total	T	P
Sample Base	135	141	276		
Mean score of Self Efficacy	*M*=4.87 (*SD* =0.71)	*M*=4.85 (*SD* =0.65)	*M*=4.86 (*SD* =0.68)	0.280	0.780
PHQ 4 total score	*M*=2.67 (*SD* =2.58)	*M*=2.92 (*SD* =2.69)	*M*=2.8 (*SD* =2.64)	-0.803	0.422
Warwick Edinburgh Work and Wellbeing scale	*M*=24.7 (*SD* =3.63)	*M*=24.62 (*SD* =3.81)	*M*=24.66 (*SD* =3.71)	0.178	0.859
SIT Stress Risks					
SIT demands subscale	*M*=2.65 (*SD* =0.7)	*M*=2.66 (*SD* =0.64)	*M*=2.66 (*SD* =0.67)	-0.082	0.935
SIT demand (reversed)	*M*=3.35 (*SD* =0.7)	*M*=3.34 (*SD* =0.64)	*M*=3.34 (*SD* =0.67)		
SIT control subscale	*M*=3.95 (*SD* =0.59)	*M*=4.03 (*SD* =0.53)	*M*=3.99 (*SD* =0.56)	-1.149	0.252
SIT peer support subscale	*M*=4.2 (*SD* =0.7)	*M*=4.11 (*SD* =0.66)	*M*=4.15 (*SD* =0.68)	1.166	0.245
SIT manager support subscale	*M*=4.01 (*SD* =0.86)	*M*=3.87 (*SD* =0.84)	*M*=3.94 (*SD* =0.85)	1.306	0.192
SIT role subscale	*M*=4.14 (*SD* =0.61)	*M*=4.09 (*SD* =0.57)	*M*=4.12 (*SD* =0.59)	0.641	0.522
SIT relationships subscale	*M*=1.7 (*SD* =0.64)	*M*=1.73 (*SD* =0.65)	*M*=1.71 (*SD* =0.65)	-0.414	0.679
SIT relationships (reversed)	*M*=4.3 (*SD* =0.64)	*M*=4.27 (*SD* =0.65)	*M*=4.29 (*SD* =0.65)		
SIT change subscale	*M*=3.52 (*SD* =0.75)	*M*=3.4 (*SD* =0.75)	*M*=3.46 (*SD* =0.75)	1.395	0.164

	Experimental	Control	Total	T	P
ReSIT					
ReSIT demands	*M*=2.91 (*SD* =0.76)	*M*=3.08 (*SD* =0.72)	*M*=3 (*SD* =0.74)	-1.853	0.065
ReSIT remote demands (reversed)	*M*=3.09 (*SD* =0.76)	*M*=2.92 (*SD* =0.72)	*M*=3 (*SD* =0.74)		
ReSIT control	*M*=3.9 (*SD* =0.71)	*M*=3.96 (*SD* =0.56)	*M*=3.93 (*SD* =0.64)	-0.676	0.500
ReSIT peer support	*M*=3.92 (*SD* =0.67)	*M*=3.88 (*SD* =0.62)	*M*=3.9 (*SD* =0.64)	0.541	0.589
ReSIT manager support	*M*=3.97 (*SD* =0.9)	*M*=3.84 (*SD* =0.86)	*M*=3.9 (*SD* =0.88)	1.289	0.198
ReSIT relationships	*M*=2.52 (*SD* =0.83)	*M*=2.57 (*SD* =0.85)	*M*=2.55 (*SD* =0.84)	-0.555	0.579
ReSIT remote relationships (reversed)	*M*=3.48 (*SD* =0.83)	*M*=3.43 (*SD* =0.85)	*M*=3.45 (*SD* =0.84)		
ReSIT change	*M*=3.55 (*SD* =0.85)	*M*=3.44 (*SD* =0.74)	*M*=3.49 (*SD* =0.8)	1.186	0.237
ReSIT work home interface	*M*=3.93 (*SD* =0.75)	*M*=3.9 (*SD* =0.7)	*M*=3.91 (*SD* =0.73)	0.398	0.691
ReSIT remote monitoring	*M*=2.38 (*SD* =1.06)	*M*=2.51 (*SD* =1.07)	*M*=2.45 (*SD* =1.06)	-1.039	0.300
SIT relationships subscale	*M*=1.7 (*SD* =0.64)	*M*=1.73 (*SD* =0.65)	*M*=1.71 (*SD* =0.65)	-0.414	0.679
SIT relationships (reversed)	*M*=4.3 (*SD* =0.64)	*M*=4.27 (*SD* =0.65)	*M*=4.29 (*SD* =0.65)		
SIT change subscale	*M*=3.52 (*SD* =0.75)	*M*=3.4 (*SD* =0.75)	*M*=3.46 (*SD* =0.75)	1.395	0.164

Appendix 6

Relative frequencies for between groups tool usage

Demographics	% Using Viva Insights	% Using Learning Pathways
Under 24	100%	50%
25-34	80%	50%
35-44	79%	34%
45-54	76%	27%
55+	75%	38%
Female	76%	34%
Male	82%	38%
DM Moderate (up to 80)	74%	32%
DM High (more than 80)	83%	39%
ERYC	88%	32%
HCC	62%	46%
NEL	69%	23%
NL	81%	39%
Senior Manager	83%	33%
Team Manager	88%	35%
Team Member	75%	36%
Up to 1 year	91%	64%
2-10 years	63%	50%
11-20 years	80%	27%
More than 20 years	81%	23%

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