Navigating the New Norm:

Remote Work and Its Impact on the Well-Being of Businesses and Their Employees

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Abstract—**COVID-19 changed the world in many different ways and has created a long-lasting impact in certain areas. One of those areas is how we interact and work with people. Remote work was the alternative to keep everyone safe at the time but has now turned into a preference for employees and employers due to many benefits. Some businesses suffered during the pandemic from remote working and have opted out of doing so in the future because of a lack of proper policies and procedures. This study aims to investigate success factors and barriers in remote working to provide organizations with information to make informed business decisions on implementing a remote or hybrid work policy. Using a survey based on 1,500 remote workers in Australia's New South Wales to capture the shift in experiences and opinions about working from home. This study is to review factors regarding demographics & industry, productivity & time use, mental health & well-being, and business perceptions. The results have recommendations for managers seeking to implement a new work environment policy.**

I. INTRODUCTION

The occupational world changed after the 2019 COVID pandemic. These changes continue to affect how we operate and interact in business today. The trend toward remote work was already underway, thanks to the rise of telecommunications and freelance opportunities. However, the pandemic accelerated this trend, resulting in the widespread adoption of working from home and its transformative effects on traditional work structures.

A study based on the perspective of workers in Italy through a questionnaire explores the economic and financial impacts of remote working during the COVID-19 pandemic. The findings reveal that over 50% of workers experience negative economic impacts due to additional costs associated with digital technologies and other factors that outweigh savings from reduced costs. Psychological factors such as job satisfaction and technostress play crucial roles in workers' decisions to continue remote work post-pandemic [1].

Another study provides a systematic literature review of remote working's role in employees' well-being and performance, focusing on papers published from 2010 to 2021. The review aims to summarize the assumptions, opportunities, and challenges associated with remote work, particularly regarding employees' perceptions, health, and work-life balance. The revealed that remote work impacts employees' perceptions of themselves and their workplace positively as well as contributes to better work-life balance and reduced stress levels. However, there are potential drawbacks [2].

The results of whether or not a business can reap the benefits of remote working are based on the ability of businesses to effectively implement a successful model or policy. This is based on industry, company budget, technological competency from employees, and many more factors to be discussed.

The research objective is to give businesses seeking to implement a remote/hybrid work policy an indication on whether or not this type of policy would be appropriate and successful by giving businesses the variables to consider.

Guiding questions for the analysis:

Productivity

- What are the qualitative factors (such as employee engagement, collaboration effectiveness, and innovation in addition to quantitative productivity) in remote work metrics?

- What are the quantitative factors in remote work metrics (Evaluate productivity metrics such as task completion rates, project deadlines met, and output quality for both remote and in-office workers)?

Healthier work-life balance and overall well-being

- What are the common challenges remote workers face regarding their well-being (such as feelings of isolation, difficulties in communication, and work-related stress)?

- What are the benefits of working remotely?

Saving and Costs

- What are the costs of implementing a remote work policy for businesses and their employees?

- What are the savings of implementing a remote work policy for businesses and their employees?

This research aims to provide businesses with actionable insights to inform their decision-making regarding remote work policies, ultimately fostering a more effective and sustainable work environment for both employers and employees in the new norm of remote work.

II.   THE DATA

The data chosen are survey responses from 1,500 remote workers in New South Wales. The goal is to capture the shift in remote work experiences and attitudes during different stages of the COVID-19 pandemic. This survey was taken from August - September 2020 and March - April 2021. The data was collected by the NSW Productivity Commission.

Before starting data preparation and analysis, it's crucial to have a general understanding of the data to anticipate any issues and data elements that may require cleaning or analysis. After examining the data, there are a few patterns that are to be noted:

- The data set is mainly comprised of strings. Many of the questions prompted respondents to answer off of given categories from multiple choice to Likert-type response scales.
- The questions are more skewed towards remote-work-related rather than on-site-related questions.
- Both datasets contained similar questions with the same information, but changes were made to the wording in the 2021 survey. In addition, the time frame for past comparisons was altered. For instance, in 2020, some questions referred to the previous year or the three months prior to taking the survey. However, in the 2021 survey, the time frame was changed to the last quarter of the previous year and the past six months.
- The 2021 survey included over 30 additional questions and placed greater emphasis on management perceptions of remote work than it did in 2020.

For an overall comparison of both years, merging the two surveys is an ideal tactic. The issue stemmed from differences not only in dataset sizes but also in the nature of the questions posed. The 2021 survey had additional questions and a change of wording, but the questions between both years are mostly the same. I had to address the inconsistency in the data sets and identify columns that indicated the same information to merge. To keep track of similar columns between the data sets, a reference key was used, which will also be used to change the column names. For the questions that were not included in the newly merged data set, they will be cleaned up and used during exploratory data analysis. Merging the NSW 2020 and 2021 surveys enables comparative analysis. This allows for the comparison of responses, outcomes, or behaviors across various demographic groups, geographic regions, and other relevant categories to identify trends. In order to prepare the merged dataset for Exploratory Data Analysis, the following steps were taken to clean and transform the data:

A. Condensing Column Names

The original column names in the survey were in the form of questions. To facilitate easy recall of column names and to identify the same column from multiple data sets, the columns were renamed. The new names provided a general idea of the survey question for better readability of the data. Punctuation marks and spaces from the column names were removed and replaced with underscores or dashes.

B. Dropping Columns

In the 2020 survey, there are two duplicate columns, industry_detailed and occupation_detailed. These are detailed versions of the original industry and occupation columns. In 2021, the researchers updated their survey to omit the detailed version. The pay_cute_acceptability column in the 2021 survey has over 65% of missing values. This is significantly higher than the rest of the columns.

C. Replace Missing Values

In columns that had an object data type that consists of strings, all missing values are replaced with "Not Available". For the columns that have float types, they were replaced with 0.00.

D. Merge Categories in a Column

The gender column has three additional options other than 'Male' and 'Female', two of those options are essentially the same, 'Prefer not to say'. The third option is 'Other'. Combining those three categories will enhance representation since there is a low frequency between these categories. This will also simplify the analysis while still recognizing gender diversity. This is also the case with household_descrip, where multiple categories were the same.

E. Changing Data Types

Some of the columns that seemed to be mainly floats were categorized as object types because it was written as a string. The time preferred columns are percentages with additional descriptive labels such as, "50% - About half of my time". The description will be removed only leaving a number to be turned into a float type. To do this, I used regular expressions to extract the numerical value from the string and then convert it to a float. Identifying the regex pattern as $r'(\d+(?:\.\d+)?)\%'$, for most of both data sets, to only identify the numbers. For productivity_hour and productivity_hour_management, the regex pattern is $r'(\d+(?:\.\d+)?)\%\s*(more|less)'$. This will identify some numbers as a negative number. Note that the rows that contained purely strings with no numbers ("I would not have preferred to work remotely") are considered 0.00%. The label that summed up anything less than 10% but not zero is considered to be just 10%. Any non-responses are replaced with NaN.

F. Realign Index

When initially merging the data sets, the response ID did not come out as expected. This is due to both tables having their sequence of response_ID values and the merge operation not aligned properly. I realigned response_ID by creating separate sequences for each year and then merged the tables based on similar columns together. This also sets response_ID as the index. Reuploading a newer version of NSW_2021 with the new response_ID column was necessary before continuing.

III.   ANALYSIS

Most of the analysis will be based on reported work-from-home (WFH) participation for three months (2020 and 2021). We will use the remote_last3months and remote_time_2020_Q3 columns. Remote_last3months is from the 2020 survey. It asks the question, "Thinking about

your current job, how much of your time did you spend working remotely in the last 3 months?"

Remote_time_2020_Q3, from the 2021 survey, asks a very similar question, though the discrepancy is the question asked about the last quarter of 2020. It also further explains how respondents should measure their time, "If you work a 5-day week, each day of remote working equals 20% of your time". This will be applied when looking at both columns for ease of analysis.

As the 2020 survey was conducted between August to September, we can assume that only a 5-month gap exists between any changes, if any, in the respondents' experiences. This time gap was selected to facilitate easier analysis for comparing experiences within a similar timeframe. Additionally, there is an adequate gap between timeframes for perceptions and attitudes to potentially change due to factors such as improvement in technology or skills.

A. Demographic & Industry

Exploring demographics can help employers tailor policies to meet specific needs and preferences for different demographic types. For example, understanding the preferences of older generations or young working parents. There are different needs for each age group. By grouping birth years into generational cohorts, employers can gain insights into different age groups and their characteristics. This is useful since the precise birth years are not as important as the overall age distribution, which ranges from 1900-2002. The age categories are labeled as follows:

Silent Generation: Born between 1928 and 1945

Baby Boomers: Born between 1946 and 1964

Generation X: Born between 1965 and 1980

Millennials (Generation Y): Born between 1981 and 1996

Generation Z: Born between 1997 and 2012

Note that the two respondents who were born before 1928 are to be included in the Silent Generation.

Fig. 1 shows that out of the 15,000 remote worker respondents, the top three respondents fell into Gen X or Millennials (Gen Y) individuals who live in a two-adult household with or without children. Gen X and Gen Y are practically the same and the highest category to report working from home. The Baby Boomers are now leaning
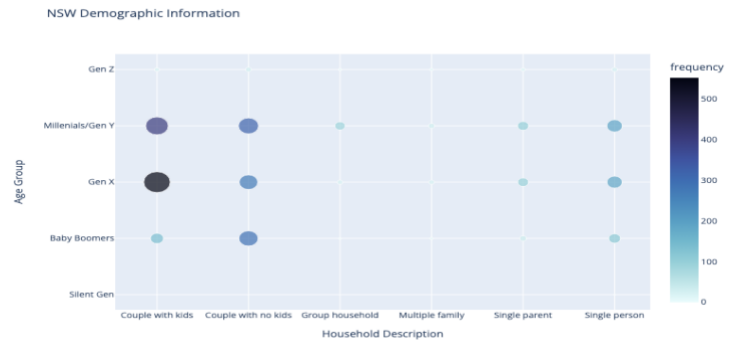

Fig. 1. NSW Demographic Information

toward retirement and exiting the workforce while Gen Z is just entering. As more members of the Gen Z population enter the workforce, this number surely changes as proven by the March 2024 result update of The Survey of Working Arrangements and Attitudes, where 46% of 20-29-year-olds are working from home or participating in hybrid working where only 40% of 40-49-year-olds are doing the same [3].

Fig. 2 indicates remote work participation increased to 39% in people participating in completely different working environments in just a few months. This includes individuals who worked remotely for less than or equal to a standard workday out of a five-day workweek. Instead of solely working remotely or in-office, more people are now opting for a hybrid work model, which involves working from home two to three days per week. In 2021, Gen Zers have started participating more in remote work, perhaps because more individuals from this generation have entered the workforce. However, Millennials and Gen X are still the dominant age
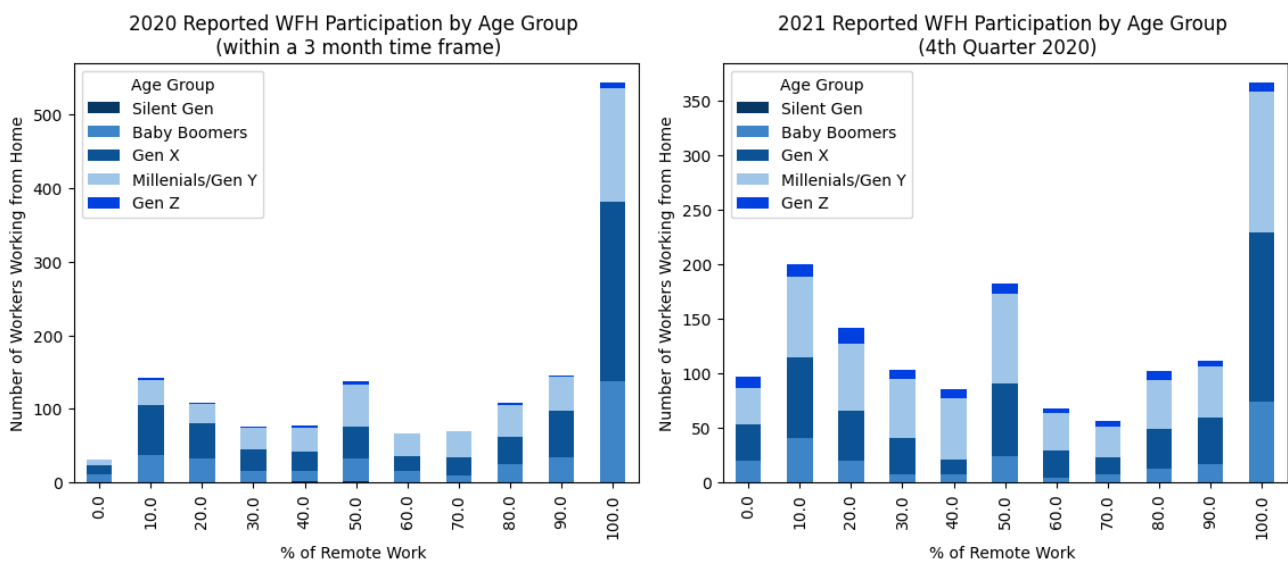

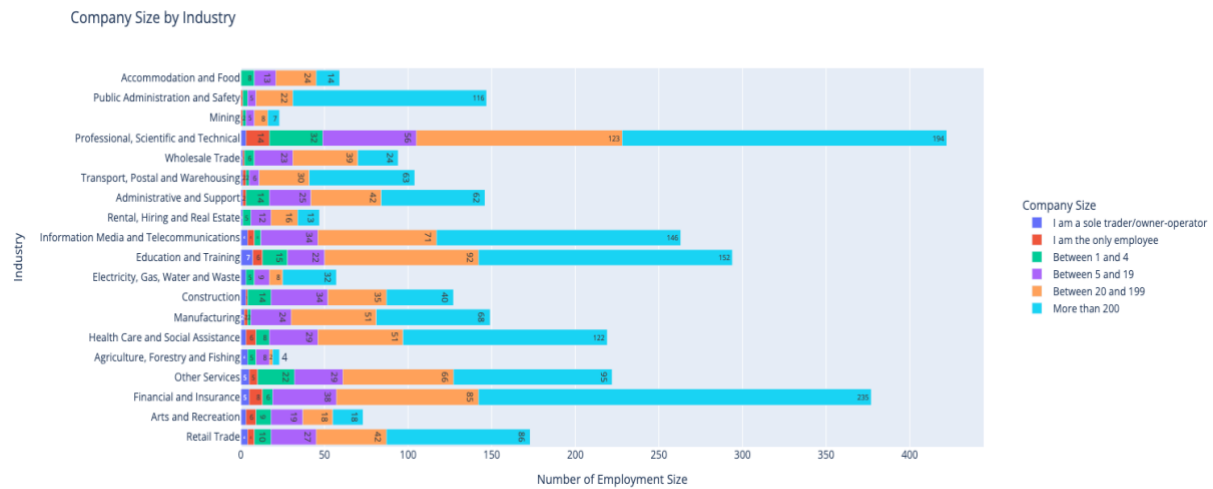
Fig. 2. Reported Work from Home by Age Group

Fig. 1. Company Size by Industry

groups in the workforce, accounting for the majority of remote workers.

The top three household types include a two-adult household with or without children and single-adult households. The categories representing the remaining respondents account for less than 20% of respondents. It is unclear as to how they are categorized the way they are without any more information from the data source. In terms of gender, 52% of the Australian respondents are Male and 48% Female. 78.9% of people live in a metropolitan region while 21.1% live in a rural or regional area.

Fig. 3 shows the top three industries that utilize a remote work policy are "Professional, Scientific and Technical", "Financial and Insurance", and "Education and Training". These top industries have over 500 companies that have more than 200 employees.

B. Productivity & Time-Use

Examining productivity and time use will give businesses clearer insight into setting realistic goals and expectations for remote workers, mitigating risks involved with remote working, and remote work versus in-office barriers. When looking into factors of remote work success barriers, both surveys provided the same factors, with the exception of the 2021 survey adding two questions about additional costs and health and safety while working remotely, which will be excluded to ensure consistency. The questions are framed differently between surveys. In 2020, they asked the respondents to select the most and least significant barriers to doing their work remotely, whereas, in 2021, they were asked if these barriers have improved or worsened for them over the past 6 months. The surveys look into the following factors for remote work barriers:

- The organization's software and systems
- Feeling left out and/or isolated
- Poor management
- Connectivity (internet connection)
- Difficulty collaborating remotely
- I have tasks that can't be done remotely
- My living situation (e.g. location, home size, who I live with)
- Lack of motivation
- Cyber security
- Lack of remote working skills
- IT equipment (computer, printer, etc.)
- Caring responsibilities
- Workspace (e.g. suitable chair, lighting, noise levels, facilities)
- Management discourages remote working

The 2020 survey asked researchers to choose what barrier they thought to be the most and least significant barrier. Interestingly enough, respondents considered "lack of motivation" to be the most and the least significant barrier. This could be due to differences in mental focus when working in the comfort of their own homes and the industry they work in. The top three most significant barriers are "Lack of Motivation", "Difficulty Collaborating Remotely", and "Feeling Left Out/Isolated". The top 3 least significant barriers are "Lack of Motivation," "Caring Responsibilities," and "Living Situations".
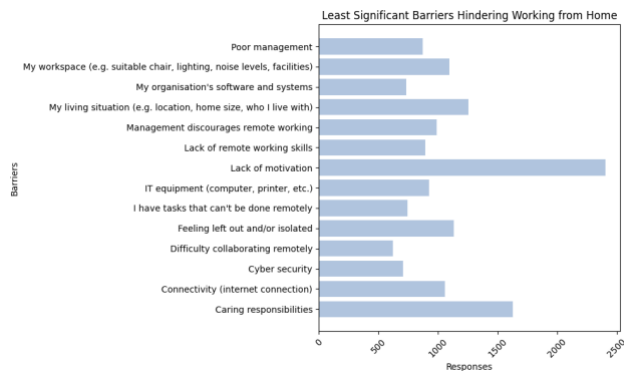
Fig. 2. Most and Least Significant Barriers
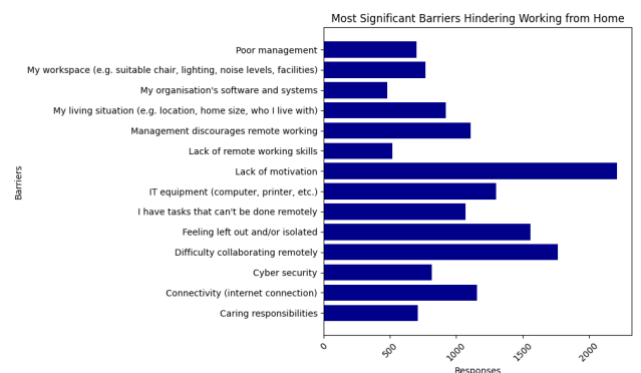
Fig. 4. Productivity Perceptions

As seen in Fig. 5, 31% of respondents thought the barrier to collaborating with others had improved after some time had passed from the height of COVID-19, getting the kinks out of working with technology and how we communicate in a new working environment. About the same number of respondents voted that lack of motivation stayed the same or had improved. 24% of respondents claimed that their feeling of being isolated had worsened as time went on in continuing to work remotely.

To set realistic expectations when it comes to productivity, the surveys examined workers' perceptions of their productivity as well as managers' perceptions of how productive they thought their workers were.

Fig 6 takes a look at the productvity_hour column in NSW 2020 and 2021, the question asks respondents to compare their productivity when they work remotely to when they work at their employers' workplace and roughly give a measurement of their productivity each hour. Respondents indicated their level of productivity, expressed as a percentage when working remotely. Note that there were far fewer manager respondents than there were employees. This can result in a biased observation if not carefully considered and noted. Fig 6 shows that employees think of themselves as being more productive when working remotely. Management seems to reflect this as well. The question aimed to determine the quality and the quantity of work done each
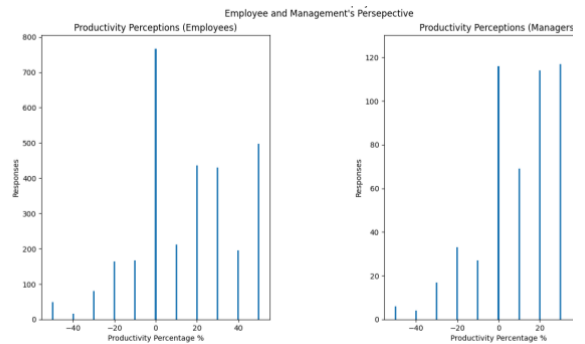
hour. In general, direct management and senior leadership support working remotely and over 60% of employees report that their organizations even encourage remote working.

Time spent doing activities during working hours will tell employers a lot about productivity. The activities the surveys focus on are "Preparing for work and commuting", "Working", "Caring and Domestic Responsibilities", and "Personal and Family Time". NSW 2021 also included sleep as a factor, but for a better comparison, this will be left out of the analysis.

More people took longer in 2021 to prepare for work remotely. The average time it took a respondent is a little under an hour. 36-44% of remote workers spent no time at all preparing for work. 50% of those who preferred working in-office, spent 1-2 hours preparing for work and less than 3% spent little to no time getting ready. Remote working increased from an average of 36 to 47 hours a week, 8-9 hours per day. Remote workers spend less time working than those who prefer an in-office setting. Remote work in 2021 increased by an additional 10 hours per week. This could be due to overcoming barriers and becoming more efficient in their tasks. Although they spend fewer hours working, they use less personal time during working hours. This could lead to more productivity than in-office workers. The most time spent utilizing personal time for both working environments was around 4 hours in total.

There was an increase of more time spent on caring and domestic responsibilities during 2021 in both remote and in-person work hours, 12-17 hours more than in 2020. This is due to more people having children during the height of the pandemic while lockdowns and isolations were in full effect. Remote workers' households increased by 9% from 2020 to 2021 and in-office workers increased by 14%, in total a 23% increase in couples with dependent children. In a 2023 research article, the authors explain the post-pandemic baby bump. M. Bailey, J. Currie, and H. Schwandt pointed out that, "The 2021 baby bump marked the first reversal in declining fertility rates since the Great Recession." US-born mothers' birth rates fell to 31,000 in 2020, which was
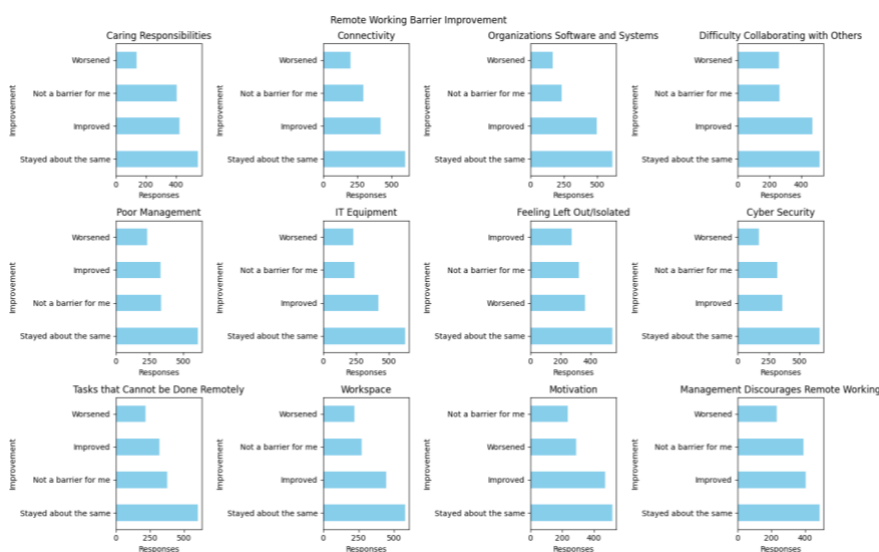

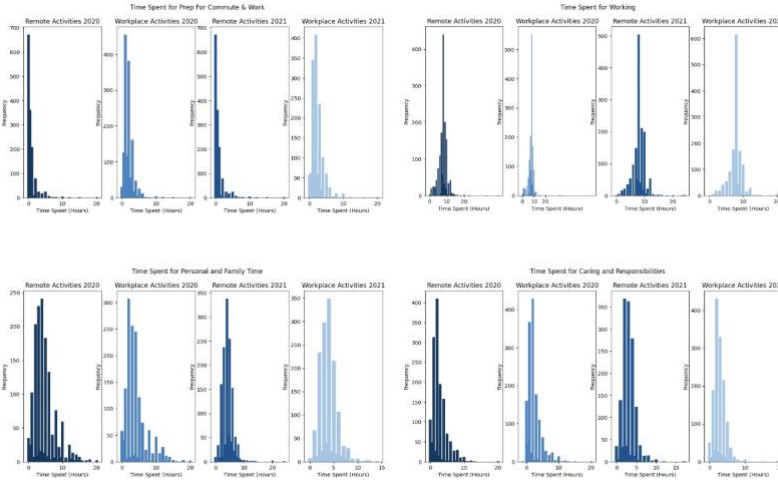Fig. 3. Remote Work Barrier Improvements

Fig. 5. Time Spent During Working Hours

work-life balance can encompass aspects such as managing familial responsibilities, job satisfaction, and well-being in general. Work-life balance refers to the concept that an employee can have time for their personal lives as well as work without one interfering with the other. Working remotely gives employees autonomy over their working hours and creates a better work-life balance. With this, some barriers should be observed such as the barriers mentioned earlier. Respondents were also asked to rate whether they agreed with certain statements. The statements were related to their well-being and physical activity levels. Out of all the respondents, 59% agreed that they felt better while working remotely. Furthermore, 57% agreed that they were physically active when they worked remotely.

on track with the trend that statistical models predicted pre-pandemic but rose to 40,000 in 2021 [4].

C. Mental Health & Overall Well-Being

It is important to take into account the well-being of employees, including their mental health and satisfaction, as it can have a positive impact on productivity. A study conducted by Knoll Workplace Research found that greater employee well-being resulted in lower costs and increased productivity. The study showed a 5% increase in job performance with fewer unscheduled absences. Additionally, there are cost benefits associated with employee well-being, such as 60% lower medical and prescription costs. Poor employee well-being, on the other hand, can lead to higher turnover rates, increased hours, and a decrease in employee engagement and morale.

The best aspects of remote working have been analyzed based on the NSW surveys. Some of the factors that have been considered include what employees consider to be the top benefits of working remotely. The factors that have been analyzed include:

- Managing their commitments
- Opportunities to socialize
- On-the-job learning opportunities
- Personal relationships
- Managing family responsibilities
- Job satisfaction
- Work-life balance
- Mental Well-being
- Working relationships

Employees voted the most for work-life balance, working relationships, and opportunities to socialize while job satisfaction, managing family responsibilities, and personal relationships were the least voted for. This is particularly interesting because the remote aspect would lead one to believe the opposite concerning relationships, socializing, job satisfaction, and mental well-being is lower than expected. Even though the results show that is the case, others argue that

Fig. 6. Best Aspects of Remote Work

D. Business Perceptions

Looking at how other businesses and upper management handle their employees while working remotely will give those who want to implement policies some insight into benefits and costs as well as popular practices for a successful work-from-home policy.

As mentioned in the beginning, the 2021 NSW survey focused more on managers' perceptions of how remote work impacted their management and their businesses. In response to perception questions about remote work, over half of management agreed that it benefited them. They found it easier to communicate with their employees when working remotely and felt that their team worked well together under these circumstances.

Money plays a significant role in business decisions to implement a new policy. According to Global Workplace Analytics' Telework Savings Calculator, U.S. companies could increase their bottom line by $525 to $665 billion a year due to savings in real estate, reduced absences from work, turnover, and increased productivity. This figure could be higher if implemented full-time. Six out of ten employers consider cost savings a significant benefit.

However, it is important to note that shifting to a remote work environment requires investment from organizations. Organizations reported that virtual employees are often reimbursed for or provided with technology such as computers and software. Some of the costs roll over to the employee at times as well if a company does not choose to cover the costs. The average annual cost per worker was $2,710. [5]
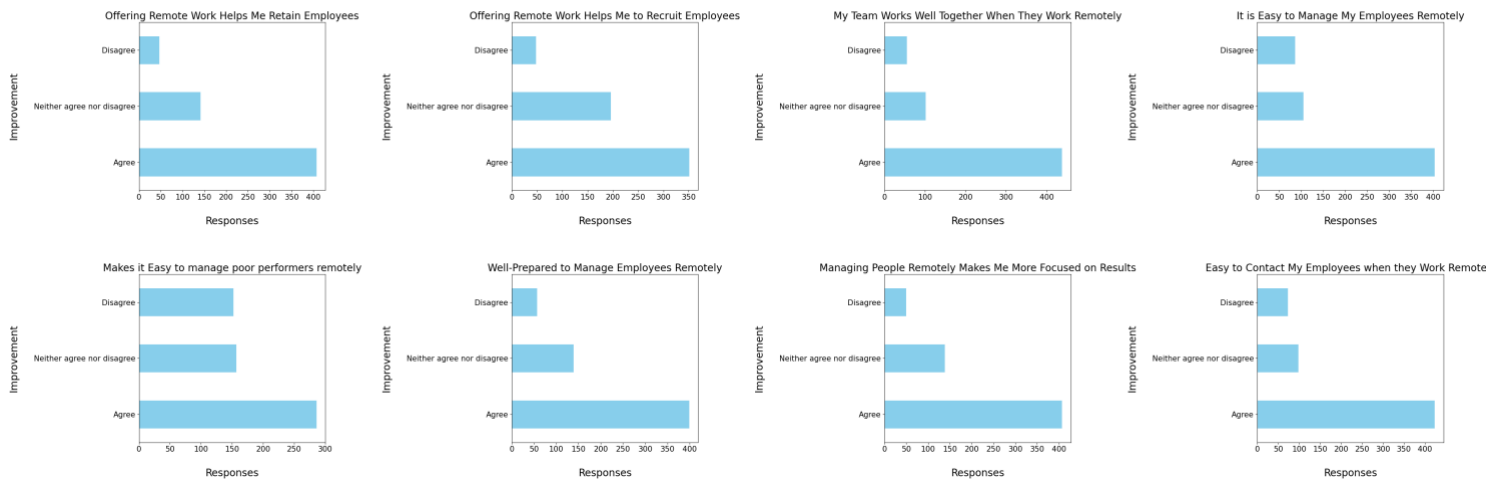
Fig. 7. Managers' Perceptions

IV. CONCLUSION: FINDINGS AND RECOMMENDATIONS

The impact of the Pandemic was a turning point for how we interact with one another in a working environment and our point of view on a work-life balance. Surveys like the NSW survey gave many an insight into their perceptions of their work-life balance, job satisfaction, and productivity. The surveys also gave those who are looking to implement a remote or hybrid model in their businesses a deeper understanding of building a successful policy. After thorough analysis in an attempt to answer the guiding questions initially outlined, the results suggest that the current workforce is largely made up of Generation X and Millennials. As Baby Boomers retire and Gen Z begins to enter the workforce, couples, both with and without children, as well as single individuals, make up the majority of these age groups. According to the National American Housing Survey in 2021, out of 70,461 households defined as a couple, 72% are 35 to 44-year-olds, which are considered millennials for this research [6]. Therefore, when crafting a work-from-home policy, it is important to focus on the needs of these demographics, as they make up the majority of the current and upcoming workforce. In regards to industries that dominate the remote working world, they each all have an element in utilizing computer technology to do their jobs successfully. The industries that employ remote work the most are professional, scientific, & technical, financial & insurance, and education & training.

Barriers to remote work and their improvements as well as time utilized during working hours help give upper management a leg-up in knowing what to expect from their employees. Barriers most commonly found that workers struggled with have mainly to do with potential mental health issues as a result of remote working. Mental health and overall well-being are other factors to consider when implementing a policy. Employees viewed remote working as a more positive outcome to their well-being. Surveyors asked for employees' opinions on their current remote work policy management established. Their responses identified that 68% of workers think that remote working is positive for their employer and also thought positively about the current policy in place. They also thought that the policy suited them well.

Based on these findings, the recommendation is to focus on the needs of the employees. "What is good for people is good for the organization" [7, p. 5]. It is suggested to research policies other similar companies have established and then tailor them to your company's specific needs. The most important thing to do is to understand your employees by studying their demographics and their needs. By understanding the needs of your employees, you can tailor your policy. Utilizing UCLA's and Vanderbloemen's, an executive search firm, guidelines for a remote working policy, the recommendations on elements to implement and discuss are as follows:

- Eligibility: New employees are eligible for remote work but will spend a specified amount of time working in the office for training. Looking at those who are more technologically savvy is something to consider when choosing eligible employees. When determining eligibility for remote work, upper management with a job description that aligns well with remote work is often considered.

- Required Software Tools: Consider what will be needed for optimal management and communication between coworkers and clients. Managers may want to consider software based on the company's needs such as project management, customer relationship management, marketing tools, e-commerce, website management, et cetera. They may also want to consider software that will support their employees such as collaboration and productivity software like Slack or Trello and communication like Zoom or Microsoft Teams.

- Availability and Time Management: Being able to keep track of when employees clock in and out is important, whether that is investing in automated time clock software or finding an alternative.

- Productivity Management: New productivity measures and consistent follow-up reports should be administered. It is important to implement attainable and reasonable goals.

- Work Space and Equipment: Deciding on what equipment the company should invest in or compensate their employees for should be based on the company budget and employee's needs to be successful. Also dictating where an appropriate working space should be when having video meetings is up to the discretion of management.

- Data Security: Since employees have access to company information in their personal environment, there needs to be a measure of data security that is involved when handling company or clientele information based on the industry [8, 9].

Whatever decision management decides to make when it comes to implementing a work-from-home policy, it is important to remember what is in the best interest of the employees will be in the best interest of the company.

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