

The Interrelationship Between Remote Work and Organizational Culture: Implications for Engagement, Productivity, and Leadership

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Abstract: With the growing shift toward remote and hybrid work environments, organizations face the challenge of maintaining strong organizational culture and employee engagement. This study is important because it explores how the unprecedented shift in work arrangements affects key aspects of organizational culture. Specifically, it analyzes the relationship between remote work and culture by examining factors like employee engagement, productivity, and satisfaction using a mixed-methods approach. Seventy full-time employees from various industries across the U.S. participated in the study. The results indicate a moderate decline in engagement and productivity after transitioning to remote work despite high satisfaction levels with flexibility and work-life balance. The results of the survey show that democratic leadership can help mitigate this decline. Productivity can suffer when employees become distracted or lose focus. The study underscores the importance of leaders promoting clear communication, providing customized support according to individual needs, and ensuring employees have the right tools available while working remotely.

Keywords: Remote Work, Organizational Culture, Employee Engagement, Productivity, Leadership.

1. Introduction

The COVID-19 pandemic has accelerated the global transition toward widespread remote work, fundamentally reshaping the culture of many organizations and how they operate. This transformation has, in turn, raised critical questions on the long-term impact of remote work on organizational culture, employee engagement, and overall business performance. One of the biggest challenges for companies at the moment is keeping their organizational culture intact when there are so many distributed employees [1]. Adaptations in technology and employee preferences led to the widespread embrace of remote work, as evidenced by a significant increase in the percentage of employees working remotely from 31% to 62% over the course of six weeks globally [1]. As a result of this pivot, limited research has been conducted that focuses on the adaptive changes in core cultural tenets within an organization as remote work applications mature and stabilize [2]. Most of the research on remote work performance, quality (in terms of productivity), job satisfaction, or compatibility with personal life is focused on short-term studies; and scarce attention has been given to long-term implications and how different types of organizational cultures respond to telework. New studies on

remote work have identified both barriers and possibilities. The National Bureau of Economic Research (NBER) also raises questions on productivity while working from home, with research pointing to challenges around maintaining focus and staying in a work headspace for remote workers [3]. Conversely, other studies have discovered that remote and hybrid employees sometimes feel culture more favorably imbued by their organization than in-person employees [4]. This discrepancy highlights the multidimensionality of remote working in workplaces and necessitates further research.

While organizations understand the challenges of remote and hybrid work models, there is little research on how these will touch upon organizational cultures over time. For example, research is needed to understand how different forms of organizational culture (e.g., hierarchical vs. flat) are altered as work becomes remote. Methods for sustaining solid corporate cultures in the absence of or within-from-a-distance hybrid setups should be established. This study will provide suggestions to managers and organizational leaders by examining how remote work intersects with organizational culture. This data can help inform organizations about their future work models and how they can keep employee engagement and satisfaction levels high while moving towards remote or hybrid work. The research questions framed to guide this study are as follows: What impact does remote work have on elements of organizational culture like collaboration, leadership, trust, diversity, and inclusion? How has remote work impacted team engagement and productivity? What factors influence employee satisfaction in remote or hybrid work? What are the pros and cons for people in new remote work configurations, and how can organizations shore up these models?

2. Literature review

While the current body of research on remote work and its implications for organizational culture and employee experiences and norms is a critical source, it also reveals significant gaps regarding enduring cultural ideologies. Dillman et al. conducted a systematic review of remote work, identifying benefits like increased flexibility that offers greater opportunities for family life, as well as challenges associated with the condition of people working from home [5]. The study highlights how the shift to remote work during the COVID-19 pandemic led to an unexpectedly fast transformation in team collaboration behavior, as organizations and employees rapidly adopted new technologies and digital tools to maintain effective communication and productivity under enforced work-from-home conditions [6]. This shift, although challenging, demonstrated remarkable innovation and adaptability in team collaboration, balancing both positive and negative effects on work dynamics. Such observations show that, when it comes to informal interactions, remote work changes the dynamic and may even contribute to creating new norms around virtual work. Although remote work can benefit the creativity of individuals, it presents problems regarding collaborative processes for innovation [7]. Capone et al. found that how different organizational cultures are able to adapt to remote work based on solid cultural and emotional resilience during the pandemic [8].

However, the existing body of research shows several notable deficiencies. Most studies focus on short-term impacts and individual-level outcomes, leaving long-term effects on organizational culture and collective behaviors underexplored. The study by Fernandes et al. notes that organizations focus on behaviors within their culture but do not explore long-term cultural evolution or how organizational culture affects individual citizenship behaviors [9]. There is a conspicuous lack of longitudinal studies that capture the evolving nature of organizational culture in sustained remote work environments and the absence of a unified theoretical framework for understanding how remote work interacts with and transforms organizational culture over time. Most research relies heavily on self-reported data and cross-sectional studies, which may not capture subtle, gradual changes in organizational culture. The potential emergence of entirely new cultural elements in response to sustained remote work remains largely unexplored. These deficiencies highlight the need for more comprehensive, longitudinal research that examines the complex interplay between remote work and

organizational culture across various industries and cultural contexts. This paper introduces a mixed-method analysis that integrates both qualitative and quantitative data to provide a more nuanced understanding of how leadership styles, communication strategies, and employee engagement evolve in remote work settings.

3. Methodology

3.1. Research Design

This research is a mixed-method, longitudinal survey-based study on the relationship between remote work and organizational culture from different industries and cultures. The specific aim is to understand how remote or hybrid working models impact engagement, productivity, and satisfaction within roles for companies' employees if they remain present throughout. The survey includes variables like age, job role, company size, and leadership style and investigates the availability of tools and resources, perceptions of equity and inclusion, and future work preferences. By combining multiple-choice, rating scales, and open-ended responses, the study offers a comprehensive view of how organizational culture evolves in remote settings and how employees suggest improving the remote work experience.

3.2. Survey Instrument

The survey was designed to cover as much content as possible regarding how remote work influences organizational culture and employee outcomes. It consists of 22 questions that span seven dimensions. The survey combines closed-ended questions for quantitative studies and open-ended questions to get more qualitative responses.

1. **Demographics and Industry Context:** This section addresses company size, employees' seniority, and functional roles, factors that are used to segment and analyze the workforce in different organizational contexts.

2. **Remote Work Experience:** Questions explore the extent and nature of remote work, asking how often staff are based remotely, for how long, and how well they feel they are supported.

3. **Organizational Culture:** Respondents rate how remote work has changed elements of organizational culture, including modes of collaboration, leadership effectiveness, trustworthiness, diversity experience, equity, and inclusion.

4. **Employee Engagement and Productivity:** Two questions explore changes in engagement and productivity levels before and after transitioning to remote work.

5. **Remote or Hybrid Satisfaction:** This section measures employee satisfaction with their current remote or hybrid work arrangement and explores what changes might make them choose the telecommuting model.

6. **Challenges and Opportunities:** Respondents are asked to reflect on the most challenging parts of their work-at-home experience and some of the factors that the telework model positively influenced.

7. **Preferences for Work in the Future:** This question asks participants whether they prefer remote, hybrid, or in-person work and invites them to recommend ways to improve remote work.

3.3. Sample

The target population for this study consists of full-time employees from various industries who have experienced remote or hybrid work due to the global shift in work modalities. Convenience sampling was employed to recruit participants from professional networks, social media, and company platforms. The survey was distributed online, reaching employees from different sectors and

organizational sizes. The sample size targeted was 70 employees to ensure sufficient randomization and mitigate selection bias. This sample size was chosen to balance diversity across industries and organizational sizes while remaining manageable for analysis. Out of 70 employees contacted, 70 responses were collected, with a completion rate of 100%, ensuring high relevance and reliability. The rate indicates that participants met the target and completed the survey, enhancing the robustness of the dataset. With an abandon rate of only 6% and no disqualified responses, the overall sample quality is very high, ensuring all collected data is relevant and useful for analysis.

This work controlled for standard control variables to make organizations and their respondents comparable. The organization size was considered, with companies being categorized into small (fewer than 50 employees), medium (50-500 employees), and large enterprises (more than 500 employees), facilitating different organizational structures and resource capacities. The staff data (e.g., age, gender, and job role) were correlated to represent the workforce from as many different perspectives as possible. Additionally, leadership styles were incorporated into the analysis, specifically focussing on leadership effectiveness, communication, and approachability as perceived by employees. Although these variables were not held constant throughout the study, their inclusion in the analytical framework allowed the author to isolate the effects of the primary variables of interest and enhance the accuracy of the results.

3.4. Data Collection

The online platform SurveyMonkey was used to distribute the survey, ensuring accessibility and responsiveness for participants. The survey was shared online through professional networks, email campaigns, and vertical industry groups, allowing participants to complete it at their convenience. The survey was expected to take 10–15 minutes to complete, thus minimizing the respondents' fatigue and ensuring completeness in data capture.

3.5. Descriptive Statistics

The author calculated frequency distributions for key demographic variables, such as industry type, company size, employee role, and job function. This action assessed the representativeness of the sample and analyzed how different segments were distributed across the dataset. For example, the author reported the percentage of respondents working in the technology sector, the proportion of employees working in small versus large companies, and the percentage of employees holding managerial roles. For quantitative questions (e.g., engagement, productivity ratings), the author calculated means and standard deviations to summarize central tendencies and variability. This process showed the average levels of engagement and productivity before and after the transition to remote work.

3.6. Comparative Analysis

A key part of the analysis is comparing employees' engagement and productivity levels before and after the transition to remote work. The mean engagement and productivity scores before and after the remote work implementation were compared using a paired t-test if the data follows the normal distribution. This test is proper because it compares the same employees at two points in time, thereby minimizing bias. Here, the null hypothesis (H_0 : Employee engagement and productivity are not significantly different between those two periods) is opposed to the alternative hypothesis (H_1 : The employee engagement differences are significant). Where the data do not meet assumptions of normality, a non-parametric alternative (Wilcoxon signed rank test) was used. It is very nonparametric and works well for ordinal data or skewed distributions, which makes it a great alternative when the assumptions of paired samples are not satisfied.

3.7. Cross-Tabulation and Chi-Square Tests

Cross-tabulation allows the author to examine how different groups within control variables (e.g., company size, gender, leadership style) perceive changes in organizational culture, engagement, and productivity. The data show whether men and women in different job roles (entry-level or senior management) report different experiences with remote work. The chi-square test assesses whether the author observes differences across groups are statistically significant or simply due to random chance.

3.8. Thematic Analysis

The study employed a coding process to identify recurring topics and sentiments within the responses. This process reveals common themes such as communication challenges, feelings of isolation, and the perceived benefits of work-life balance in remote work settings. Following the coding phase, the study groups related codes into broader themes to provide a more comprehensive understanding of the data. Three potential themes are identified: Communication and Leadership, Work-Life Balance, and Technology and Support. This thematic analysis allows the author to synthesize the qualitative data and draw meaningful conclusions about employees' experiences with remote work, complementing the quantitative findings.

4. Results

4.1. Demographics

Table 1: Demographics

Variable	Category	Frequency	Percentage
Age	18 – 29	24	34.29%
	30 – 49	30	42.86%
	50+	16	22.86%
Gender	Male	39	55.71%
	Female	31	44.29%
Company Size	Small (<50 employees)	20	28.57%
	Medium (50-500 employees)	35	50.00%
	Large (>500 employees)	15	21.43%
Job Role	Entry-Level	19	27.14%
	Mid-Level	29	41.43%
	Senior Management	20	28.57%
	Executive Leadership	2	2.86%
Leadership Style	Autocratic	2	2.86%
	Democratic	64	91.43%
	Laissez-Faire	4	5.71%

Table 2: Descriptive Statistics of Key Variables

Variable	N	Mean	Std.Dev.	Min	Max
Engagement Before	70	3.87	0.93	1	5
Engagement After	70	3.44	1	1	5
Productivity Before	70	4.01	0.95	1	5
Productivity After	70	3	1.02	1	5
Satisfaction	70	3.95	0.98	2	5

Table 1 provides an overview of the respondents' demographic information, broken down into categories such as age, gender, company size, job role, and leadership style. The Frequency column shows how many respondents fall into each category, while the Percentage column shows the relative share of each category as a percentage of the total number of respondents (which appears to be 70 based on the total responses for engagement and productivity). This demographic breakdown helps contextualize the survey responses, as respondents in these categories might have varying experiences with remote work and organizational culture.

Table 2 provides descriptive statistics for Engagement (before and after remote work), Productivity (before and after remote work), and Satisfaction. These variables are rated on a 1 to 5 scale, where 1 represents the lowest and 5 represents the highest scores. The average values suggest a moderate decrease in engagement and productivity after employees started working remotely. The average engagement score dropped from 3.87 before remote work to 3.44 after the transition, with the standard deviation, which measures how much individual responses deviate from the mean score and reflects variability, increasing slightly from 0.93 to 1.00. Similarly, productivity saw a decline from a mean of 4.01 before remote work to 3.00 after, with a corresponding rise in the standard deviation from 0.95 to 1.02. In contrast, the satisfaction score averaged 3.95 with a standard deviation of 0.98, indicating a high overall satisfaction with the remote work model, though the wider standard deviation reflects more divergent opinions on this matter.

4.2. Engagement and Productivity

The engagement data was analyzed by examining the difference (after-before) distribution, which showed a normal distribution. A paired t-test was performed to show the engagement levels pre- and post-shift of remote work. The results produced a t-value of -10.718, which shows that following this change, engagement significantly decreased. The corresponding p-value was less than 0.0001, indicating that the reduction in engagement could not be attributed to chance alone.

Conversely, the productivity data were right skewed, and therefore, a Wilcoxon Signed-Rank Test would be most suited to measuring changes before and after working remotely. This non-parametric test considers the skewed data distribution, giving greater confidence in how productivity changes. To calculate the z-value, the author must add positive and negative ranks calculated from ranked differences of before and after values. The sum of positive ranks = 11; the sum of negative ranks = -85. The smaller of these two values is used as the test statistic, W, which in this instance equals 11. Next, the author calculates the expected value for W, using the formula $E(W) = \frac{n(n+1)}{4}$, where n is the number of non-zero differences. With n=58, the expected value of W is 855.5. The author then computes the standard deviation for the Wilcoxon test, using the formula $Sd(W) = \sqrt{\frac{n(n+1)(2n+1)}{24}}$. Substituting the values, the standard deviation is 129.12. z-value is calculated using the test statistic value minus the expected value for W, divided by the standard deviation, resulting in a z-value of -6.54. This z-value corresponds to a p-value much less than 0.0001, confirming that the decrease in productivity was also statistically significant.

4.3. Control Variables

4.3.1. Cross-tabulation

Cross-tabulation tables (see Appendix) investigate the relationships between control variables such as organization size, age, gender, job role, and leadership styles with key outcomes like engagement and productivity. For each control variable, cross-tabulation tables were created to show how different categories experienced changes in engagement and productivity.

Regarding organization size, smaller organizations (1-50 employees) tend to report slightly better engagement improvements (6 out of 20, or 30%) compared to larger organizations, though overall engagement improvement rates remain low across all sizes. On the productivity front, just 10% of small organization respondents have seen productivity improvements (2/20 employees), mirroring low numbers at medium and large organizations.

Statistically, workers aged 18-29 have a significantly greater probability of reporting increased engagement and productivity benefits, reaching as high as 46%, which means that younger employees felt their motivation was improved. In addition, 10 out of the 24 also reported enhanced productivity. Older employees (50+) were the least likely to have seen improvements: only 6 out of 16 in this group reported increased engagement, and just over a third saw an increase in productivity. This could indicate that younger employees are more receptive to changes than older employees.

The gender analysis indicates that males report slightly higher levels of productivity improvement (16 out of 39) compared to females (8 out of 31). However, the engagement improvements between genders appear more evenly distributed, with 13 males and 10 females reporting improved engagement. This suggests that while engagement may be similarly affected across genders, productivity improvements may vary more substantially.

Entry-level employees reported a higher likelihood of engagement improvements (10 out of 19, or 53%) compared to senior management roles (4 out of 20, or 20%). However, the distribution is more evenly split regarding productivity, with 8 employees in each category (entry-level, mid-level, and senior management) reporting improvements. Notably, executive managers showed no productivity improvement, indicating potential challenges at the leadership level in adapting to new work conditions.

Lastly, leadership styles play a critical role, as employees under democratic leadership report overwhelmingly better engagement improvement rates (30 out of 64, or 47%) than those under autocratic or laissez-faire leadership styles. Similarly, democratic leadership is associated with higher productivity improvement rates, while autocratic leadership shows little improvement in either category.

4.3.2. Chi-Square Test

Chi-square tests can be used to detect whether the differences the author observe are statistically significant. The chi-square test formula is $X^2 = \sum \frac{(O-E)^2}{E}$, where X^2 is chi-square test statistic, O stands for observed frequency in each category, E represents the expected frequency in each category. E is calculated by multiplying the row total of a desired dependent variable (DV) by the column total of a desired independent variable (IV), dividing by the overall sample size. Degrees of freedom (df) were determined based on the number of rows and columns in the table: $df = (r - 1) \times (c - 1)$, where r and c represent the number of rows and columns in the cross-tabulation table.

Table 3: Chi-Square Statistics Table

IV\DV	Engagement	Productivity
Organization Size (df = 2)	0.449	0.213
Age Group (df = 2)	0.46	0.451
Gender (df = 1)	0.009	1.776
Job Role (df = 3)	6.231	2.427
Leadership Style (df = 2)	0.021	4.375

The null hypothesis (H_0) assumes no relationship between an IV and a DV, meaning that any differences in the DV across IV levels are due to random chance. The alternative hypothesis (H_1) suggests that a significant relationship exists between an IV and a DV. The critical values at a significance level of 0.05 for $df = 1, 2$, and 3 are 3.841, 5.991, and 7.815, respectively, the author compares the calculated values to critical values. After analyzing all IVs using the chi-square test, it is evident that none of the relationships between the IVs and the DVs are statistically significant. This suggests that factors such as organization size, age, gender, job role, and leadership style do not have a meaningful impact on changes in employee engagement or productivity after the shift to remote work. Any differences observed in engagement and productivity across these categories are likely attributable to random variation rather than systematic influences from the IVs tested in this study.

4.4. Qualitative Analysis of Sentiments

Based on the gathered qualitative data, while 96% of participants reported positive feelings about the current remote work policy, indicating that they are increasingly accustomed to the remote work mode, 80% raised concerns about productivity due to distractions like children, pets, and household demands.

The first theme focusses on communication and leadership. Many participants expressed satisfaction with how their organizations manage communication and collaboration in a remote setting. Communication is always essential, but it becomes paramount in keeping the team connected and supported when they must work from home. Most participants argued that solid leadership was directly related to engagement, as participants cited managers' ability to prioritize clear communication and maintain close touch frequencies with their team members to help individuals stay aligned towards functioning as a unit when required in working at home. This satisfaction with organizational communication channels is crucial to employees' approval of the remote work policy. Nevertheless, some concerns emerged about communication affecting productivity. While the majority appreciate their organization's efforts, a small portion of respondents noted that distractions, especially from personal tasks or non-work activities, still pose a challenge in maintaining focus. Therefore, while communication within teams is effective, external distractions—combined with employees' sense of engagement and responsibility—may hinder productivity for some.

The next theme involved work-life balance and why it worked so well for participants. Remote work has also received high marks from many employees who say it makes juggling their combined personal and professional responsibilities a little easier. Their schedules are also more flexible, and they can arrange furniture in a way that makes it all convenient without seeing rigid office hours. This freedom was one of the most significant factors in participants' satisfaction with the remote work policy. While this flexibility is excellent, it can also lead to many blurred lines between work and personal life. While they enjoy the balance, other participants say it often makes them less able to stay productive at their actual job during work hours because of non-work distractions. This finding shows that ideally remote work can bring a better work-life balance than work in offices, because there's no need to commute. But that advantage is not easy to achieve. Employees must possess vital self-discipline and strong personal boundaries to prevent potential drops in productivity while working remotely.

5. Conclusion

The quantitative results show decreased engagement and productivity after moving to telework, accompanied by an increase in variability (standard deviation). This suggests mixed experiences with telework, where some employees adapt well, while others struggle. The relatively high levels of satisfaction indicate that although employees report lower levels of engagement and productivity, they still find the telework model attractive, particularly because of the flexibility and work-life

balance it offers. The disconnection between satisfaction and performance suggests that organizations should look at ways to maintain their strengths while addressing the challenges of telework, particularly in areas such as productivity management and employee engagement. Businesses can work to improve these outcomes by providing resources to help employees minimize distractions. Leadership style emerges as a significant theme in the qualitative analysis, and its importance is also reflected in the quantitative data. Democratic leadership is associated with higher engagement and productivity improvements, as evidenced by quantitative and qualitative feedback. Employees under democratic leadership report better communication and collaboration, which leads to improved satisfaction with remote work. The quantitative findings also show that job role had the strongest relationship with engagement and leadership style had a moderate relationship with productivity, though neither was statistically significant at the conventional threshold. This result points to a trend where job role and leadership play a central role in shaping the remote work experience, suggesting that further research could explore how specific leadership behaviors influence remote employees' long-term performance and engagement. While telework offers flexibility, distractions negatively affect productivity. Qualitative results are confirmed by the Wilcoxon Signed-Rank test. This finding suggests that productivity is negatively correlated with distraction. The harder it is for employees to focus, the less productive they become. This trend suggests that while telework offers flexibility, it also poses risks associated with self-discipline. Therefore, organizations must invest in strategies to help employees manage distractions, such as time management training and creating designated workspaces at home. These qualitative aspects, combined with the quantitative decline in productivity, highlight areas where organizational interventions can significantly improve. Both qualitative and quantitative results highlight that telework does not consistently impact all employees.

References

- [1] De Vincenzi, C., Pansini, M., Ferrara, B., Buonomo, I., & Benevene, P. (2022). *Consequences of COVID-19 on Employees in Remote Working: Challenges, Risks and Opportunities An Evidence-Based Literature Review*. *International Journal of Environmental Research and Public Health*, 19(18), 2-8, 12-14. MDPI. <https://doi.org/10.3390/ijerph191811672>
- [2] Raghaw, D. (2024). *Exploring The Impact of Remote Work on Employee Engagement and Productivity*. *International Journal of Interdisciplinary Approaches in Psychology*, 2(5), 17–35. <https://www.psychopediajournals.com/index.php/ijiap/article/view/415/314>
- [3] Higginbotham. (2024, April 23). *The impact of remote work on company culture: HR's response*. Retrieved September 7, 2024, from <https://www.higginbotham.com/blog/the-impact-of-remote-work-on-company-culture/>
- [4] Eagle Hill Consulting. (2024, May 13). *Organizational culture 2024 report | Eagle Hill Consulting*. <https://www.eaglehillconsulting.com/insights/organizational-culture-hybrid-work/>
- [5] Dillman, K. J., Árnadóttir, A., Heinonen, J., Czepkiewicz, M., & Davíðsdóttir, B. (2021). *Correction: Dillman et al. Review and Meta-Analysis of EVs: Embodied Emissions and Environmental Breakeven*. *Sustainability* 2020, 12, 9390. *Sustainability*, 2021, 13(9), 1-2. MDPI. <https://doi.org/10.3390/su13095195>
- [6] Waizenegger, L., McKenna, B., Cai, W., & Bendz, T. (2020). *An affordance perspective of team collaboration and enforced working from home during COVID-19*. *European Journal of Information Systems*, 29(4), 429–442. <https://doi.org/10.1080/0960085x.2020.1800417>
- [7] Amann, M., Granström, G., Frishammar, J., & Elfsberg, J. (2022). *Mitigating not-invented-here and not-sold-here problems: The role of corporate innovation hubs*. *Technovation*, 111, 2-13. ScienceDirect. <https://doi.org/10.1016/j.technovation.2021.102377>
- [8] Capone, V., Schettino, G., Marino, L., Camerlingo, C., Smith, A., & Depolo, M. (2024). *The new normal of remote work: exploring individual and organizational factors affecting work-related outcomes and well-being in academia*. *Frontiers in Psychology*, 15. *Frontiers*. <https://doi.org/10.3389/fpsyg.2024.1340094>
- [9] Fernandes, P., Pereira, R., & Wiedenhöft, G. (2023). *Organizational culture and the individuals' discretionary behaviors at work: a cross-cultural analysis*. *Frontiers in Sociology*, 8, 3-8. *Frontiers*. <https://doi.org/10.3389/fsoc.2023.1190488>