

# IMPACT OF WORK FROM HOME ON EMPLOYEE PRODUCTIVITY: A STUDY ON IT SECTOR IN DELHI NCR REGION

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**Abstract:** When the internet was originally developed in the 1980s, remote employees did not just emerge out of thin air. Working from home was typical even before there were downtown workplaces and commuting. Businesses are used to the idea of remote work since, prior to the Industrial Revolution, everyone worked from home. Such a thorough analysis of how working from home specifically affects IT professionals is lacking in the research that are currently accessible on remote working. Through the use of a structured questionnaire, information regarding 115 Indian IT workers' experiences with being compelled to work from home was gathered for this study. According to the study's findings, amongst the four independent factors taken into account, teamwork and communication have the greatest influence on workers' productivity when they work from home. Additionally, the authors advise managers and employers to look for ways to promote cooperation with and across teams of workers in order to increase employee productivity. These methods should also improve communication with and among employees. Furthermore, it is critical to provide employees employment flexibility and guarantee a good work-life balance.

**Key Words:** employee productivity, employment flexibility, communication, IT workers, teamwork, works places.

## **Introduction:**

Actually, a number of people working from home (WFH) has grown as more occupations use computers and telecommunications; more people have stable home Internet connections, and more families have both parents working full-time. This evolution was accelerated by the Covid-19 epidemic, which forced a substantial section of the global workforce to temporarily switch to WFH. When compared to working in an office, working from home (WFH) may encourage work-life balance, provide more flexible hours, and save commute time (WFO). There is still a lack of knowledge on the more fundamental effects of WFH, such as those on productivity and the factors that determine whether WFH is more or less productive than WFO. (WSJ, 2020; Financial Times, 2021b).

In this essay, we analyse how WFH affected a significant Asian IT services firm. In March 2020, the corporation quickly changed every employee from WFO to WFH in reaction to the pandemic shock that was mostly unforeseen. Our work contains a number of unique and intriguing aspects. The sector and jobs examined here are some of those considered to be most conducive to WFH. In an information technology business where a significant portion of labour has always been computer driven, the personnel are highly trained professionals. They are also some of the hardest to examine at the same time. Significant cognitive effort, teamwork, customer interaction, and invention are all required for the roles. Productivity in these fields is difficult to quantify. It has not been previously done to study WFH for employment with such features using non-survey data. We received exceptionally comprehensive data from the company's personnel records and workforce analytics tools for a panel of more than 10,000 workers over a period of 17 months, including both WFO and WFH. These consist of each worker's primary output and labour hours, which provide a straightforward indicator of productivity. The company gave information on how workers divided their time between jobs for a sub-sample. This includes time spent in meetings, working together, and executing tasks without interruptions. It also contains details on connections (networking activities) with coworkers within and outside the company. The experience, tenure, age, commuting time (for WFO), gender, and number of children living at home of each employee are also available.

These data provide a rare chance to quantify productivity for this sophisticated form of job and look into what influences productivity during WFH. We examine the effects of employee characteristics, whether or not there were kids at home, and travel duration on WFH productivity. We also examine how the degree of networking, cooperation, supervision, and coaching varies depending on the kind of job. We have learned a lot by comparing the production levels between WFH and WFO, and these insights will be helpful in developing future WFH programmes. Two sections are used to present our results. We start by looking at how productivity, output, and average work time changed during WFH. Using this as a base, we examine what motivates these changes and which personnel are most impacted. We carefully examine the impact of WFH-induced changes in working patterns while also taking into account the roles of both employee and job characteristics. We discover that during WFH, workers dramatically extended their usual working hours. A large portion of this was sent after business hours. The employee's key performance indicator showed a modest reduction in production at the same period. Combining this, we calculate an 8–19% decrease in production. These findings are in line with the hypothesis that workers become less productive during WFH and put in more hours to make up for it.

Employees who had kids at home were less productive than those without, but even those without experienced reductions in production. In addition, women were more adversely impacted by WFH than males, although this gender disparity was not brought on by the presence of kids at home. We hypothesise that it may be because of additional expectations put on women when they work from home in the family environment. During WFH, employees with shorter business tenure saw a modest decline in production, but those with longer experience saw output stay about the same. This is independent of the impacts of

experience or age. This means that workers who are more used to the firm's culture and procedures would do better in WFH since there won't be a coworker next to them for immediate assistance or counsel.

WFH has a significant impact on working habits as well. More time was spent engaging in meetings of all kinds than getting coaching or having one-on-one conversations with managers. They had less interactions with coworkers both within and outside the company. They also had less "focus time," or undisturbed time to do activities. The productivity improvements brought on by WFH were substantially associated with each of these variables. These modifications to a move to WFH were long-lasting rather than transient. These results imply that the rise in coordination costs during WFH accounts for at least a portion of the productivity decline.

The pandemic's influence on expectations for increased production during WFH creates a number of potential issues. However, a number of data points suggest that this is not a severe problem. First, compared to the pandemic's gradual onset, the switch to WFH has an immediate effect on productivity and work time. Second, although to a lesser degree, the decline in productivity is also seen among employees who do not have children at home, showing that output is also being negatively impacted by reasons other than the closing of schools. Third, modifications in output and working hours do not coincide with modifications in the pandemic's trajectory, such as an uptick in infection rates or a loosening of lockdown rules. Fourth, rather than increasing, fewer people are taking sick days during WFH. As was the case with many other information technology firms, the company's financial performance was comparatively strong throughout the epidemic, thus employees were not in greater risk of losing their jobs.

The information discussed below offers crucial insights into how WFH may change across various job kinds and businesses using a hybrid WFH/WFO strategy. According to our assessments, cooperation, coordination, and communication are more expensive when working virtually. In professions where these factors are considerable, this is likely to provide a major obstacle to WFH, particularly for less seasoned workers. While WFH is likely to remain a component of contemporary workplaces, several characteristics of in-person interactions—such as the level of cooperation and coaching, and "productive accidents" that result from haphazardly meeting people—cannot simply be recreated digitally (including those with whom there is not yet a working relationship).

### **Review of Literature:**

An early understanding of the attitudes of system staff about telecommuting may be gained via a research to examine the impact of the kind of job, choice of schedule (Traditional or Flextime), challenges and advantages. (1984; Gerardine DeSanctis). The results of the following study, which considered factors like cost and benefits, work habits, isolation vs. social contact, productivity, and career implications, among others, revealed that people who already work for a company and use their homes as full- or part-time work locations have

marketable skills. (1984, JOANNE H. PRATT). The motive for telecommuting and variables including work-life balance, social ties, coworkers' productivity, and interactions with coworkers' relationships inside families have also been studied. (1984; Ilan Salomon and Meira Salomon). The following study investigated how flexibility related to a range of variables, including work conflict, work expectations, autonomy, job satisfaction, task variety, position clarification, family conflict, job involvement, family involvement, marital satisfaction, intervention, family expectations, overload, and stress. (1996; LE Duxbury). relations between conflict in the workplace and family The following study's framework included performance, turnover, absenteeism, organisational commitment, job participation, and burnout. The results show that conflict between work and family is not necessarily detrimental to attitude and productivity at work. (1999) Ellen Ernst Kossek and Cynthia Ozek. According to a research conducted to better understand respondents' attitudes about teleworking, married persons and those who claimed that teleworking had more benefits for both themselves and their businesses expressed a more favourable and positive attitude and relationship towards teleworking. (Thomson S.H. Teo and Vivian K.G. Lim, 2000). Keeping the employer or employee driven initiative, confidence in the employment relationship, and the intersection of work and home life as the independent variables, a research on remote working and employee relationships was conducted. (2003) Lynette Harris Another research was carried out to examine the relationship between the job and the family while retaining the workplace as the independent variable. E. Jeffrey Hill, Maria Ferris, and Vjollca Martinson published this in 2003. According to the findings of a study on telecommuting, the vast majority of the workers who took part in the research support and see the idea of telecommuting favourably. (2007, Ahmed Gad Abdel-Wahab) The second parameter used in the research to gauge changes in employee productivity was job flexibility. The study's findings indicated that this parameter was vital in determining employee productivity since it was a key component in determining employee productivity. (Judy Clarke, Jessica Polzer, Ellen MacEachen, 2007). To ascertain the impact of job features and working circumstances on job efficiency, a prior research was carried out. (2007) EminKahya A research was conducted to examine employee productivity while keeping in mind their stress levels and job happiness. According to the findings, increased stress causes a reduction in staff productivity, and as employee happiness rises, so does output. (2010) George Halkos and DimitriosBousinakis.

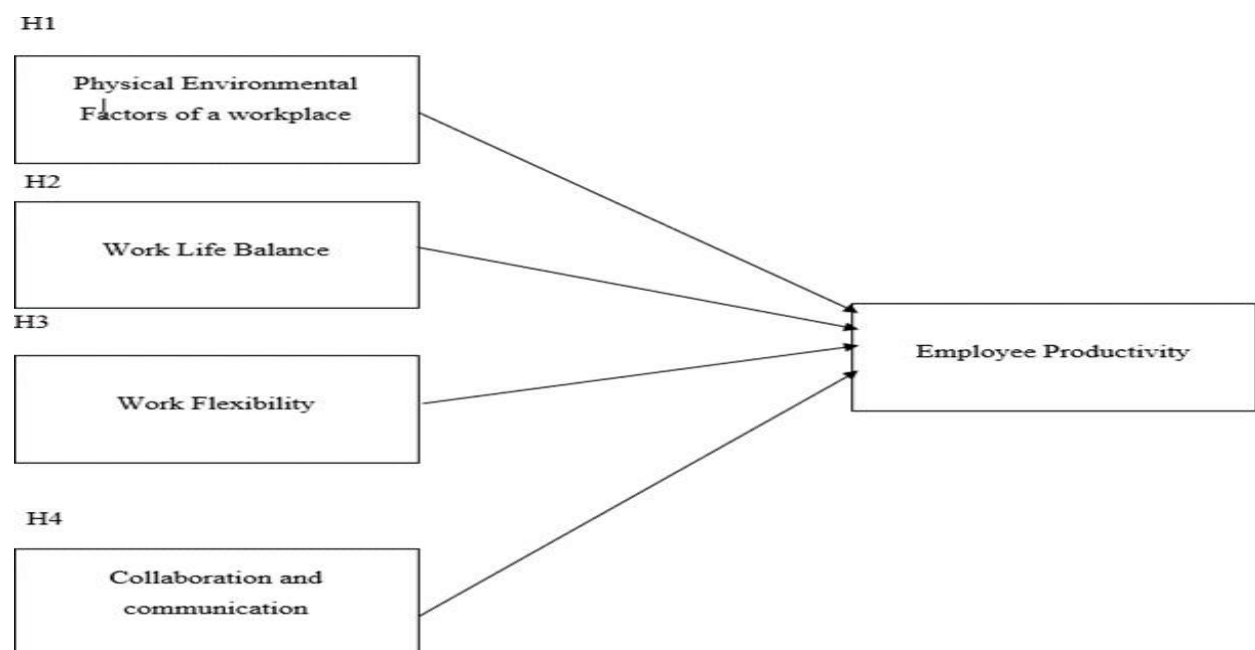
The following research was done to determine how much of an influence work flexibility had on employee productivity while retaining the flexible work programme as the altering variable. The study's findings demonstrated that flexible work schedules for workers are linked to higher levels of productivity. (2011) Song Yang and Lu Zheng A research that examined employee productivity and performance in relation to physical environmental elements was based on earlier studies that had previously been completed. (2011) N. Kamarulzaman, A.A. Saleh, S.Z. Hashim, H. Hashim, and A.A. Abdul-Ghani Another study that used the incentive management system as its foundation aimed to assess changes in employee performance and productivity. 2011 (PnarGüngör). The workplace has been investigated as a gauge of job happiness and productivity in the literature on remote working. The working environment for the UOA administrative employees was generally

unfavourable, including a reluctance to embrace and develop novel office work practises. Additionally, the inefficiency of this circumstance was discovered. Nikolaos Alexopoulos and Konstantinos Fassoulis (2015). Employee happiness, self-reported employee productivity, and health have all been the subject of more research. Richard de Dear, Leena Thomas, Jungsoo Kim, Christhina Candido, 2016. Effective teleworking techniques have been studied. Like in office settings, teleworkers set boundaries through geographical, temporal, behavioural, and communication techniques. Compared to teleworkers, employees with more job control and power are better equipped to develop integration or segmentation solutions that meet their demands. (Alexandra Beauregard, Kelly A. Basile T., 2016) An investigation of self-rated employee effectiveness and employee wellbeing in an activity-based workplace was undertaken. Satisfaction with the physical environment, privacy, connection, and greater workplace switching improve employee productivity and wellness. The longer time spent seeking for a workplace has a negative impact on employee morale. Helena Jahncke, AnnuHaapakangas, David M. Hallman, Svend Erik Mathiassen, 2018. The effects of privacy, teamwork, friendship, and staff generation on productivity have been studied. Success at work is positively impacted by privacy and cooperation, but failure is negatively impacted by friendship. Compared to older employees like Baby Boomers and Generation X, the relationship between privacy and productivity is stronger for Generation Y. (Erlinda N. Yunus, 2018; ErniErnawati) The impact of commuting on employee productivity has been studied. When it comes to middle-aged individuals and their job performance, active commuting is beneficial. Absenteeism is related to the travel time to work. Short-distance drivers and those who commute by active means are more likely to be content. 2019 (Liang Ma, Runing Ye). Another research looked at the effects of telework hours, the influence of telework on happiness, stress, and life satisfaction, and the effect of commuting time on employee productivity. The productivity of employees is increased by appropriate telework hours. Worker productivity increases when life happiness rises as a result of telecommuting. 2019 (Sachiko Kazekami). Telework's characteristics and results have also been researched. Reduced peer contact, supervisor support, and appropriateness of a home office were determined to be the most important telework elements influencing different telework outcomes. AudronNakroien, Ilona Buien, and BernadetaGotautait, 2019. There is a correlation between employers and employees' feelings of greater autonomy and respect for being able to exercise independence over their working arrangements, according to a report on forced working from home in response to the Covid-19 pandemic and how it differs from working from home voluntarily.

When workers are expected to work from home, these consequences may not be apparent. (Clare Kelliher and Deirdre Anderson, 2020). The cost-effectiveness of team collaboration and enforced working from home has been studied. The 2020 film stars Lena Waizenegger, Brad McKenna, Wenjie Cai, and TainoBendz. Working from home was discussed for business continuity during the COVID-19 pandemic, and it was determined that managers had a clear path to efficiency optimization via the use of business information and analytics technologies. (Teena Bagga, Anuj Tripathi, 2020) Dual-career parents who work from home have been affected by gender inequalities in how well they are seen to be doing at work and how satisfied they are with their jobs. The paper states that there were no gender variations in

self-rated work performance and job satisfaction prior to the Covid-19 epidemic. (2020, Zhiyu Feng, Krishna Savani) Additionally, it studies the connection between management ability and worker performance. It is concluded that there is a strong positive association between management ability and worker productivity. (Xuerong (Sharon) Huang, Li Sun, and Dipankar Ghosh, 2020). By classifying economic sectors in accordance with the confinement decrees of three European nations, it also evaluates the COVID crisis' effects on employment. (Italy, Spain, and Germany). (2020; Marta Fana, Sergio Torrejón Pérez, Enrique Fernández Macas) It also discusses if the epidemic may improve the employment opportunities for those with impairments. It is concluded that employees with problems are now more prone to work remotely. Douglas Kruse, Mason Ameri, Lisa A. Schur, 2020).

**Hypotheses:**



H1 – Employee productivity is impacted by workplace physical environmental elements.

H0 – Physical environmental factors of a workplace do not affect employee productivity.

H2 – Work-life balance affects employee productivity. H0 – Work-life balance does not affect employee productivity.

H3 - Work-flexibility affects employee productivity.

H0 – Work flexibility does not affect employee productivity.

H4 – Collaboration and communication affect employee productivity.

H0 – Collaboration and communication do not affect employee productivity.

### Research Methodology:

The following process is adopted for the research methodology:-

### Data collection:

The primary method of data collection was through a survey which was conducted among the employees working in various IT companies. The study was undertaken mainly to understand how the WFH model had impacted the productivity of employees. The secondary data was collected from the news reports and articles that are published on various websites. The sample consists of 115 IT Employees within the age limit 21-50, working in various IT companies in Delhi NCR. A questionnaire was prepared and distributed to the employees in the form of google forms, the responses of which were studied for drawing conclusions.

### Descriptive Analysis:

Experience	Frequency	Percent
Less than 1 year	23	20
Between 1 year and 2 years	57	49.6
Between 2 years and 3 years	4	3.5
Between 3 years and 4 years	6	5.2
Greater than 4 years	25	21.7
Total	115	100

(Source - Primary)

### Interpretation:

Age	Frequency	Percent	Income	Frequency	Percent
21-26	85	73.91%	Less than 2 Lakhs	15	13
27-32	18	15.65%	Between 2 Lakhs to 3 Lakhs	18	15.7
33-38	8	6.96%	Between 3 Lakhs to 4 Lakhs	41	35.7
39-44	1	0.87%	Between 4 Lakhs to 5 Lakhs	19	16.5
45-50	3	2.61%	More than 5 Lakhs	22	19.1
Total	115	100%	Total	115	100

**Age:** Among the 115 respondents, the majority lies in the age group of 21-26 which constitute 73.91 percent and the next was the age group of 27-32 which constituted 15.65 percent of the total. The percentage of respondents for other age groups is very negligible and age category 39-44 was the lowest with just one respondent.

**Gender:** Five distinct income levels were considered under this criteria. The majority of workers get an annual salary that falls between the "Between 3 lakhs and 4 lakhs" range. A total of 41 workers, or 35.7% of the respondents overall, fall beneath this salary bracket. The proportion or number of workers who make less than the other income categories seldom varies. The smallest percentage of workers fall into the "Less than 2 lakhs" salary bracket. Only 15% of the total number of employees are represented by these 15 workers.

**Marital Status:** The difference in the number of employees who are single and those who are married is significant. Among the 115 respondents, 88 employees are single/unmarried and this constitutes the majority of 76.5%. Employees who are married were only 27, that constitutes only 23.5% of the total number of employees.

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**Work Experience:** Out of the 115 respondents, 55 were male workers, making up 47.83 percent of the total, and 60 were female employees, making up a somewhat higher 52.17 percent of the respondents. The number of male and female workers is very insignificantly different. Nearly equally many male and female workers participated in the data gathering procedure as responders.

**Factorial Analysis:**

<b>Between-Subjects Factors</b>			
		<b>Value Label</b>	<b>N</b>
<b>Gender</b>	1	Male	55
	2	Female	59
<b>Income</b>	1	Less than 2 Lakhs	15
	2	Between 2 Lakhs to 3 Lakhs	18
	3	Between 3 Lakhs to 4 Lakhs	41
	4	Between 4 Lakhs to 5 Lakhs	19
	5	More than 5 Lakhs	21

(Source - Primary)

We chose Gender and Income as the independent variables based on the results of the factorial analysis to better understand which demographic characteristics have the greatest influence on Employee Productivity. We may deduce from the analysis's results that neither



gender nor wealth has a significant influence on employee productivity since their respective significance values—0.389 and 0.824—are both higher than 0.05. Additionally, Gender and Income together have a significance value of 0.924, which is higher than 0.05. Therefore, based on the findings of our research, neither gender nor wealth significantly affects employee productivity.

**Multiple Regression Analysis:**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	B
(Constant)	0.733	0.383		1.915	0.058	-0.026	1.492
WLB	0.118	0.099	0.11	2.048	0.045	-0.105	0.34
CAC	0.403	0.081	0.452	5.003	0	0.243	0.563
PE	0.078	0.113	0.059	0.691	0.491	-0.146	0.302
WF	0.186	0.092	0.173	2.295	0.03	-0.078	0.27

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.538 <sup>a</sup>	0.48	0.464	0.52381

a. Predictors: (Constant), WF, PE, WLB, CAC

(Source - Primary)

On the basis of multiple regression analysis, following are the interpretation: With a significance value of 0.000, or less than 0.05, communication and cooperation, one of the four independent variables, had the greatest influence on employee productivity. Employee Productivity, the highest of the four independent variables, changes by 0.403 units for every unit change in communication and cooperation. Work Flexibility and Work Life Balance are the next two independent factors that significantly affect Employee Productivity, with significance values of 0.030 and 0.045, respectively, both less than 0.05. The work flexibility, communication and collaboration, and work-life balance null hypotheses are therefore rejected. Physical Environment Factors is the independent variable that does not affect Employee Productivity, with a significance value of 0.490, larger than 0.05. The increase in employee productivity with an increase in one unit of physical environmental factors is just 0.078, which is very little. As a result, the physical environmental factors null hypothesis is accepted.

A study “Working from home: characteristics and outcomes of telework” (Audrone Nakrosiene, Ilona Buciuuniene and Bernadeta Gostautaite, 2019) supports the conclusion of this study, that communication and collaboration is an important factor that affects employee productivity while telecommuting. Likewise, a study “Mechanisms to improve labor productivity by performing telework” (Achiko Kazekami, 2019), concludes that stress does not decrease labor productivity directly. Although telework improves happiness and job satisfaction, these variables have no direct impact on labor productivity. But after the analysis

of results, we can understand that work-life balance impacts employee productivity. Therefore, the results from this study deviates from the previous one.

Some studies like “Self-rated productivity and employee well-being in activity-based offices: The role of environmental perceptions and workspace use” (Annu Haapakangas, David M. Hallman, Svend Erik Mathiassen, Helena Jahncke, 2018) and “An Overview of the Influence of Physical Office Environments towards Employees” (N. Kamarulzaman, A. A. Saleh, S. Z. Hashim, H. Hashim, A. A. Abdul-Ghani, 2011), concludes that satisfaction with the physical environment affects the employee productivity which deviates from this study. That concludes that physical environment factors have the least significant impact on employee productivity.

A study “The paradox of decoupling: A review of flexible work arrangements and employees' output According to (Song Yang, Lu Zheng, 2010), workers that have flexible work schedules tend to be the most productive. This is also consistent with the study's findings, as we can see from the research that employee productivity is significantly impacted by job flexibility. As a result, we may draw the conclusion that the results of this research add to those of the earlier one.

### **Findings of the Study:**

- The bulk of research participants are between the ages of 21 and 26 and have annual incomes of between Rs. 3 lakh and Rs. 4 lakh.
- Compared to the male group, women make up the majority of responses by a slim margin. The majority of responders are unmarried and have between one and two years of job experience.
- Gender and income, the two demographic parameters included for the investigation, were shown to have a very little effect on work-from-home employee productivity.
- Collaboration and communication, out of the four independent components considered, are determined to have the greatest effect on employee productivity, while physical environmental elements had no significant influence on employee productivity.

### **Conclusion:**

The proverb "everything has a grey side" or "the two sides of a coin" may have anything to do with working from home. Working from home has advantages and disadvantages for both employers and workers. Only an employee's personality and personal goals have an impact on motivation when they work remotely. The kind of business and the sector in which a company operates also have an impact on staff productivity rates. Information technology is one of the industries that may readily adapt or operate their businesses from home. The existing WFH platforms, infrastructure, and digital tools for virtual collaboration are largely to blame for this. The COVID-19 pandemic gave it a whole new perspective and meaning. IT companies like Tata Consultancy Services have said that by 2025, just one-fourth of their staff members will be needed to work from their premises at any one time, with the balance

being able to work remotely. This is due to the various benefits of WFH during COVID-19. Simply put, the businesses must ensure that everyone works together to build a society that is less disruptive and advantageous to everyone, allowing WFH to function effectively. Remember that despite the WFH model's flaws, there are still opportunities to learn a lot and explore new areas.

### **Limitations of the Study:**

The majority of respondents had little to no experience working from home prior to the government shutdown, which poses a study limitation. Future research may include participants from a bigger population and those with prior experience working from home in order to fully understand how affordances have developed. Furthermore, the level of lockout that our participants experienced fluctuated, making it challenging to maintain the necessary working from home environments for the study.

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