

# Impact of COVID -19 Pandemic on Work from Home (WFH) IT Professional's: An Empirical Study

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## Abstract

This paper estimates the Coronavirus (COVID- 19) is rapidly spreading throughout the universe. Workplace health and safety issues cause IT professional's employee to work from home arrangements. Due to the threat of COVID- 19 pandemic continuing to spread, IT professional's initiative made their employees to work from home. IT sector continuity plans typically allow a subset of employees to work from home, with work also getting distributed to other cities as employees travel between them. However, the spread of COVID -19 to multiple metro cities could result in centres across the country shutting down, requiring broader. The magnitude of the corporate sector work from home duration of the lockdown and situation was unfolding due to the health crisis in the economy. In this paper, we describe the state of work from home of IT professional's concern during COVID- 19. Analysing the responses of 150 employees using demographic profile and Structural Equation Modelling (SEM) method, findings revealed that technology have played a vital role during work from home.

**Keywords:** COVID- 19, Information Technology, Work from Home, Network and software.

## Introduction :

The prevalence of this COVID-19 pandemic is a monumental challenge to the universe. Exclusively for the IT sector, they pursue the Work from their home and quietly design their work lives. In order to restrain the spread of the virus, the government of India announced a nationwide lockdown starting March 25, 2020 which continued for about more than months in India. The intensiveness of this source will be the key aspect of employees. Who have generous proficiency regarding network operation, but it's also gradually affecting the employees whose performance haven't frequently been mediated by computer. Obviously, there's a scarcer situation for employee's network transforming systems in the IT sector. In this epidemic situation, employees work from home like they work on an organization shift basis, they have to login as per the shift allotted for them. This will be a factual challenge to make the home as a work environment. The target-oriented task is predicted employees, their projects work from home and assessment their systematic performance is a key requirement. Since they can implement the widespread measure to consent their lakhs of employees to stay home and work.

Employees are working remotely except those who are under the security team and the occasional IT role. This will be a great challenge to manage a global office of employees in their home. Technology has played a vital role in work from home. Hence the opportunities will enhance the technology but it also highlights the costs and potential risks of exploiting technical aspects of employees being atomized from their place of work.

## Literature Review

Working from home (WFH) increases group productivity when comparing changes in group productivity, the projects are moved from office to working from home. Though, there is no comparison of productivity changes for the same employees (Du Brin 1991). The factors influencing working from home on work-family balance shows performance effects of working from home receive slight attention in the literature. Besides, offering comfortable working conditions, organizations can attract and retain highly skilled and hard-working employees. Though, they should be aware of challenges and potential problems that arise in concern this will be an option. As workers have different preferences, compulsory working from home might induce dissatisfaction (Hill et al. 2003). Information technology is predictable to ease additional work at home since a personal computer at home provides a powerful set of office tools and functions. Remote telecommunications provide entree to databases which exist at the office as well as access to other computers. The advanced accessibility of databases and computers would encourage supplemental work from home by providing telecommunication links. Telecommunication also decouple's employees from the office, increases the transportability of their work, and, if electronic mail facilities are provided, makes asynchronous communication with other employees possible (Venkatesh and Vitalari 1992).

#### **Objectives of the study :**

- To study the issues faced by the IT professional during COVID -19 pandemic.
- To explore the impact of WFH on employees belonging to various socio-economic profiles.
- To identify underlying dominant challenges in WFH due to COVID -19 pandemic in IT professionals.

#### **Issues faced in Software :**

##### **Bandwidth and connectivity :**

Predominantly, let's look at bandwidth and connectivity. Organizations need to figure out how much bandwidth employees need to work from home and stay connected with the network. Technologies such as video conferencing (VC) need to receive and to transmit the data which looking at the download speed isn't enough. The highest common denominator is needed here – 10 Mbps internet connection isn't necessarily symmetrical, it could be 10 Mbps down and only 2 Mbps up, could be the common bandwidth is 2 Mbps. WIFI is a crucial consideration for employees to have enough network facilities. We live in the wireless world and expect everything to work perfectly, but this is not successful in all cases. There are a few wireless routers or access points that have the necessary throughput, so extending a network cable from the router to the home office location is ideal for employees.

##### **Virtual private network :**

A virtual private network (VPN) extends a private network across a public network and enables operators to send and obtain data world-wide shared or through public networks as if their computing devices were directly connected to the private network. In this remote way work is handled varies from one to one still they have norms in organization to structure the IT network in the workplace, which need to be adhered to. Remote employees might be required to work via VPN in order to access shared resources on main servers, which can have an impact on network

speeds. At present, organizations provide modem to their employees and figuring out the best route to go, as many are unprepared, and are scrambling to work it out as swiftly as possible to evade downtime and lost productivity. VPN's are an actual way to sustain firewalls and safety on corporate networks, and remote users are monitored and software updates can be accomplished. When it comes to SMMEs, he says most smaller entities have no hard and fast system in place for remote workers who are now figuring out how to connect their remote workers. Many will ask their employees if they have a home Internet connection, then will work out data allocation, and either offer to pay the monthly fee or supply an LTE router with a contract.

#### **WFH-Issues and challenges during COVID-19 pandemic:**

Once the hardware and environmental challenges have been dealt with, employees need to focus on the software they will be connected through video conferencing for productivity needs. Again, in large enterprises, this will be covered, as most have tools such as Office 365 in place with a Teams license or Google G suite with hangouts. For smaller organizations who don't have a set way of doing things remotely, there are a plethora of tools available, such as ZOOM, WebEx, Teams, Google Hangouts, Blue jeans, Pexip, Skype, GoToMeeting, Zoho, to name but a few.

In fact, indicating the appropriate solution requires understanding the pros and cons. "In principle, they all work the same, so questions such as who employees will be VC calling with is key to whether they are mainly connecting with other remote workers within the organisation. The sense for all to use the same platform for the IT sector. However, be calling external clients, there might be a number of different systems being used the software applications work off a Web-based platform allowing users to send a URL link to whomever they wish to call, who then need only click on the link and the browser enables the call or a temporary software app gets installed."

Hence the majority of software codecs are free to download and to use for limited periods. Some keep all one-on-one calls free but will limit the time of each call, others allow multi-party calling but without a scheduling function, and some limit the time on multi-party calling or offer free session recording. All software-based operators have a paid-for, prime version with enhanced features, unlimited calling duration, up to 100 participants in multiparty calls, unlimited recording time.

#### **Camera, microphone, speaker and headphone :**

In the case of external and internal devices or both most laptops have a webcam, but they are angled up the user's nostrils. This should be always positioned so the eye can be seen by the far side so a good branded microphone is essential. Meanwhile other requirements like Bluetooth earpieces or wireless air pods, microphones are used to forward the voices project. Additionally, most external cameras feature built-in microphones, which they need right positioned in front of the user, to get voice with perfect clarity. Desktop Jabra speak 510 speakerphone, shure MV51 or external Logitech microphone are required to the IT professional

### **External monitor :**

The organization needs to consider whether to use a single or dual monitor setup. “Without a doubt, a good setup will require screen real estate. During work from home IT professionals need to have the requisite space for their various tasks, so it becomes a question of how to arrange the layout effectively. laptop with one external monitor or a desktop computer with two. Many employees who were previously office-bound employees won’t have laptops and might be given their desktop PC to use at home. All these external devices will need to be considered such as monitors, speakers, mics and cameras.

Advisable for the employees to avoid buying the cheapest monitor available, as these might not be suitable. Careful consideration needs to be taken to establish the real estate required, and what resolution is appropriate. Often, extra-wide monitors, which have the ability to show multiple documents side by side, will often eliminate the need for two monitors side by side and come only at a slightly higher cost.

Ultimately, he says when an employee will be working from home indefinitely, an ergonomically comfortable workspace needs to be created. Things to consider here are seating position, type of chair with back arch support, head position, and the position of the monitor becomes of vital importance.

### **Workplace Etiquette :**

Few have given much thought to how they should behave in this reality. “Employees are still technically ‘at work’, so would wearing sweatpants and a t-shirt be acceptable. Permitted to let ourselves go as we believe we likely won’t be seeing anyone today. These are all considerations, which although might seem trivial, are not necessarily. People who have been working from home for some time, understand that discipline is key to a successful workday. Working from home means sleeping in, binging on Netflix shows and similar. However, having a daily routine in place is key to making this work, and managers need to stop micromanaging their employees and manage based on outcomes. Another consideration, says spokesperson, is where the light source is coming from. “Cameras must adjust for different contrast etc, depending on the user’s skin tone and the amount of natural light, as otherwise faces can appear to be too dark or light with varying degrees of shadowing taking place. A desk lamp positioned from above to reduce shadows as well as light up your face is recommended. Users who wear glasses should conduct some tests to see how the light reflects on their lenses, as people on the other side are able to see the reflections on their screen.”

### **Video conference :**

In terms of what to wear, he advises to keep things professional, and quotes Karl Lagerfeld, who said: Sweatpants are a sign of defeat. You lost control of your life so you bought some sweatpants.” In order to be clearly visible, during a video conference it is good practice to use a neutral background with little to no movement – think curtains and blinds, which can move in the wind.

The colours users wear should also be in contrast with their environment, to ensure they stand out in the video. Many VC software applications have the ability to add a virtual background. This is a great idea.

Beyond technology and functional processes, there are other key factors to effective remote working

#### **Dominant challenges in IT professional work from home:**

The on-going crisis consists of three interlaced issues: a health shock, an economic shock subsequent from the lockdown and a global economic downturn. Literally each one of these shocks on its own is significant and put together, they have created considerable pressure upon policy makers to act decisively in the IT professionals. They have faced dominant challenges during these shocks in the IT professionals.

- Communication – It is considered having team calls once per day, brief people on the status, and give everyone the opportunity to share experiences and challenge the superior.
- Responsiveness – Remote working is not similar to working in an organization environment. Hence, they need clear guidelines of how quickly a remote worker is expected to respond to a request depending on the communication type, email, Slack, calendar invites, etc.
- Reporting – The Line managers need to implement procedures that allow them to ascertain whether the remote workers are getting the task done at the right time to lead group meetings, team collaboration, daily/weekly/monthly reports are mandatory during Work from home
- Working schedule – Agree a method of clocking on and off, even if it's as simple as a team group chat and members saying good morning when they start their day as followed at organization.
- Health and safety – Do the ergonomic keyboards in the office need to be taken home to provide the same comfort employees are used to? Working from home does not remove the responsibility to provide a good working environment.
- Liability – Ensure that coverage for the company assets while in the employee's possession.
- Technical support – Allocate the contact details: all remote workers need to know how to get help when needed.
- Socialization – Bring remote workers together, particularly virtually. Social interaction is an important part of motivation and increases productivity. Consider a buddy or mentor scheme so that every employee is paired and can problem solve, vent, share or socialize virtually.
- Accessibility – Establish a virtual open-door management policy, just as there is in the office. Sure, people are accessible and Can be easily engaged.

#### **Research Methodology:**

The present research study was descriptive and empirical in nature for this study empirical analysis used which is based on a quantitative approach to interpret the link between the variables such as Technology, Professionalism, Quality and Decision Making through the research instrument. Both primary data (through an online questionnaire to collect demographic information) and secondary data (journal articles, publications and other sources) have been used. Convenience sampling method were used to filter participants, which are IT employees who work from home. The data collected were subjected to pilot study to explore the reliability and validity of the instrument and

Cronbach's Alpha Reliability Coefficient value of 0.896 proves that the scale is more consistent and highly reliable in nature. Questionnaires were distributed to 160 respondents, and only 150 completely concise questionnaires were returned by the respondents. Structured Questionnaires with three different sections were finalized for the survey method among the IT employees in the Chennai city. Section one deals with the personal profile of the respondent such as, age, gender, marital status, educational qualification, designation of employees, gross annual income experience in IT line are measured in the appropriate nominal and interval scales. The responses of the participants were collected on the basis of 5 point Likert's scale applied for section 2 and 3 which consists of ten questions regarding perception of employees in IT professional's variables related to working from home during COVID -19 pandemic.

**Data Analysis and Results :**

A total of 150 respondents participated in the study. The majority of the participants were female (39.3%) and the rest were male (6%). Concerning age group, the majority of the respondents were below 30 years of age (62%), between the age group of 31 to 40 years (22.5%), between 41 to 50 years (7.5%) and remainder were above 50 years (8%). The demographic characteristics of the participants in this study are summarised in Table 1.

<b>Table.1 Personal profile of the respondent</b>			
<b>Particular</b>	<b>Items</b>	<b>Frequency (n=150)</b>	<b>Percentage</b>
Gender	Male	59	39.3
	Female	91	60.6
Age	30 and below	74	49.33
	31-40	53	35.33
	41-50	20	13.33
	50 and above	3	2
Education Qualification	Graduation in Arts	35	23.33
	Science	15	10
	Engineering	27	18
	Technology	31	20.66
	PG- Arts	15	10
	PG-Science	13	8.66
	PG- Engineering	8	5.33
Experience	PG- Technology	6	4
	Below – 5Years	65	43.3
	5 to 10 years	52	34.66
	11 to 20 years	20	13.33
Gross Income	Above 20 years	13	8.66
	5lakhs and below	74	49.33
	5 to 10 lakhs	53	35.33
	Above 10 lakhs	23	15.33

Designation	Program analyst	60	40
	Team leader	31	20.66
	Associate	45	30
	Others	14	9.33

**The Structural Model :**

The SEM technique was used to examine the structural model so the effects among the four latent constructs were tested. The model included 14 items describing 4 latent constructs: Technology, Professionalism, Quality, and Decision Making. The various goodness-of-fit statistics are shown in Table.2. and present a good fit between the data and the proposed measurement model. The goodness-of-fit value of 0.90 shows that the measurement model has a good fit with the data.

**Table.2 – Model evaluation overall fit measurement**

Fit indices	Recommended value	Value
$\chi^2$	N/A	15.40
d.f.	N/A	27
$\chi^2/d.f.$	$\leq 3.00$	1.57
Goodness of fit index (GFI)	$\geq 0.9$	0.90
Normed fit index (NFI)	$\geq 0.9$	0.91
Non-normed fit index (NNFI)	$\geq 0.9$	0.95
Comparative fit index (CFI)	$\geq 0.9$	0.96
Root Mean Square Error of Approximation (RMSEA)	$\leq 0.05$	0.035

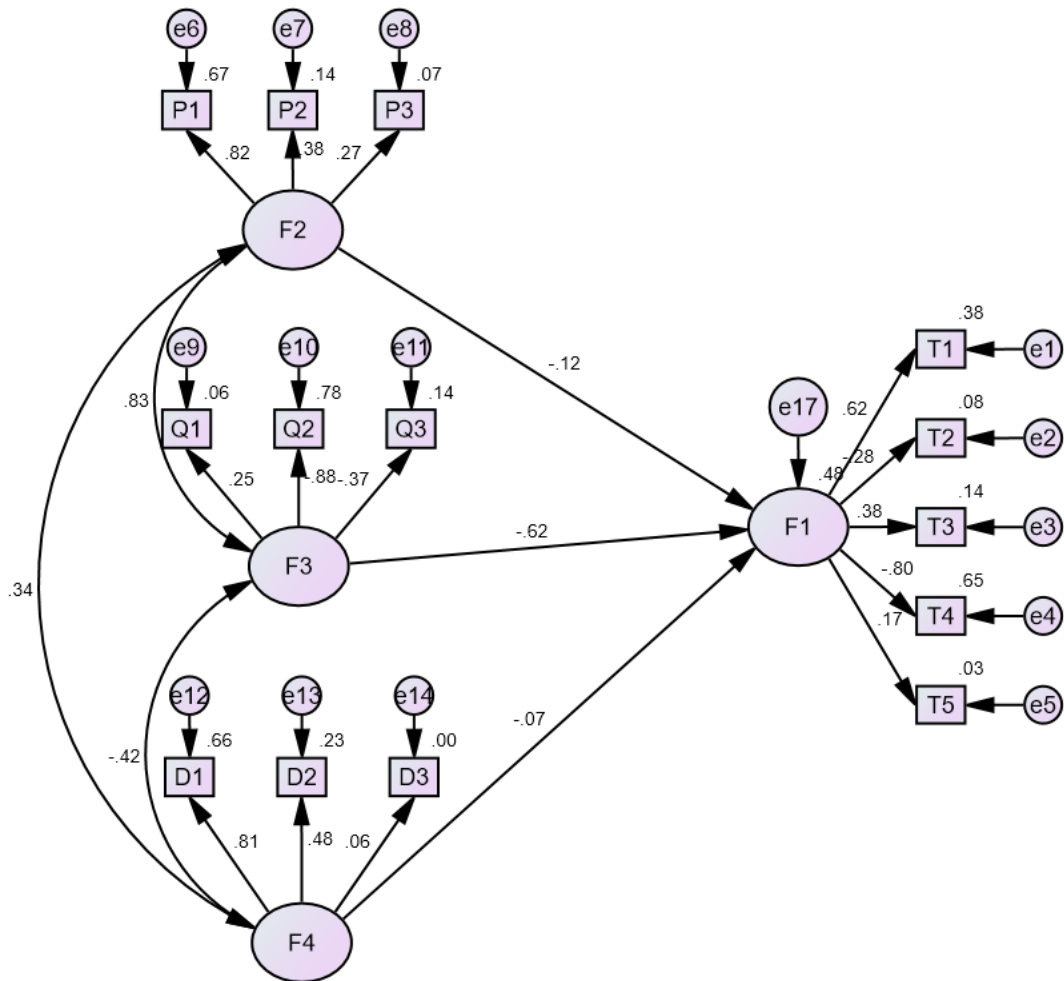


Figure 1. SEM Model

**Hypotheses:**

**H1. Professionalism has a direct effect on Technology.**

The data indicates that Professionalism has a direct effect on Technology (H1:  $\beta = -0.12$ ,  $p < 0.05$ ). Hence the hypothesis is accepted.

**H2. Quality has direct effect on Technology.**

The data indicates that Quality has a direct effect on Technology (H2:  $\beta = -0.62$ ,  $p < 0.05$ ). Hence the hypothesis is accepted.

**H2b. Decision Making has a direct effect on Technology.**

The data indicates that Decision Making has direct effect on Technology. (H3:  $\beta = -0.07$ ,  $p < 0.05$ ). Hence the hypothesis is accepted.

**Limitations :**

Due to COVID-19 pandemic the researchers have to follow the government policies while data collection has to maintain social distance data collection is done via google form this constraint. this research was restricted to its sample size to 150 IT employees in Chennai city of Tamil Nadu

**Conclusion :**

This article defends the current scenario “Working from home” is the new reality, and this will be for the foreseeable future. This Covid-19 has posed an unprecedented challenge for India. Literally



large size of the population, the precarious situation of the economy especially of IT professionals. This is bound to have a profound impact on the way we work in the future. We all need to grab this opportunity and embrace it, and transform our workplaces now, before we get left behind.

A lack of IT resources can bite many organizations as they move to enable remote strategies. When workers were outside the normal perimeter, managing device sprawl, and patching and securing hundreds of thousands of endpoints, became a much bigger challenge. Don't assume that all employees can switch to remote working effectively and with little assistance or guidance. Home is not the office and they may need significant assistance to adapt as well. Essentially, the network perimeter now includes all of the employees' homes. Some security programs are also organized. This is also important to consider the issue of on-premises software, including costs. IT professionals cannot replace legacy on-premises applications overnight, so increasing VPN capacity to accommodate more staff working remotely could be expensive. One of the unintended consequences of COVID-19 will likely be increased zero trust adoption that further embraces cloud services, eliminates VPNs, and enables employees to work from anywhere. However, empirical evidence on how working from home arrangements influence employees' work effort is scarce.

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