Orissa Journal of Commerce
Vol. 46, Issue 2, April-June 2025
ISSN: 0974-8482

URL: www.ojcoca.org
DOI: https://doi.org/10.54063/ojc.2025.v46i02.01

Work-from-home Factors Impacting Workers' Productivity and Well-being: A Mediation Analysis

Prasad C V

P.G. Department of Commerce, Sree Neelakanta Government Sanskrit College, Kerala, India

To cite this paper
C V, P (2025). Work-from-home Factors Impacting Workers' Productivity and Well-being: A Mediation Analysis. Orissa Journal of Commerce. 46(2), 01-15.

Keywords
Work-from-home; Workers' Productivity; Well-being; Experience

JEL Classification
M00; M1; M10; M12; M14; M15

Abstract: The paper emphasises the effect of factors related to work from home and how they impact the productivity and well-being of the employer. Further, a mediation analysis has been carried out to find out how the experience factor of the worker mediates the relationship between the factor associated with work from home and the productivity and well-being of the workers. A multi-stage stratified sampling method is used to generate a reliable and statistically valid sample comprising 360 employees from various fields in the Trivandrum, Kochi, and Calicut districts. The chi-square analysis found that there is no noteworthy relation between the demographic factors and the productivity of the workers. The MANOVA result indicates that home-related factors in different sectors lead to differences in work practices. SEM model reveals that the factor "work-life balance (WB)" has the highest optimistic impact on worker efficiency, followed by the factors social connection and communication and collaboration. Experience acts as a significant intermediary in the association between home factors and efficiency. Both direct and indirect effects are statistically important, with the indirect effect showing that experience enhances productivity in a work-from-home setting. This suggests that employees with more experience adapt better to work-from-home conditions, becoming more productive.

1. Introduction

The epidemic has led to an important and widespread movement towards work-from-home policies. This is an opportunity to gain insight into how work from home factors influence workers' performance at work as well as their personal lives and health. Numerous countries around the globe were forced to implement lockdown restrictions to diminish the blowout of the COVID-19 pandemic. One of the strategies used during the lockdown was remote working. It was implemented by all businesses, both developed and emerging, in a variety of industries to safeguard their workers and continue operations in order to minimise potential losses (Kurdy et al., 2023).

Work from home (WFH) is a job planning that permits workforces to do their work responsibilities from home or another distant location. In place of commuting to a traditional place of work like an office, warehouse, or retail store, they stay connected with colleagues and perform their duties through tools such as phone calls, emails, and virtual meetings - commonly referred to as remote work (RW) or telework (TW). People all throughout the world have been shocked by the announcement of a unique virus called COVID-19, also denoted as the coronavirus (Anakpo, 2023). Work from home has benefits, but there are plenty of disadvantages to working work from home. Employees who work from household slip out on openings to cooperate with colleagues and might move less bodily, like rambling to and from conferences (Tavares, 2019).

The rapid changes to work from home and other COVID-19 connected features offer an exceptional setting for examining the influence of work from home on both physical and mental health. Social and behavioural variables account for the majority of perceived health effects. Specifically, the lengthy stay-at-home orders issued during the pandemic could be a factor in the overall emotions of depression and anxiety, which frequently result in dietary and repetitive alterations (Di Renzo et al., 2020). These nutritional and movement modifications may combine with other work from home -

connected stressors, which together may have a harmful result on one's bodily and psychological health (Schnitzer et al., 2020). Furthermore, workers with children are probably even more affected by these behaviours because of the closure of day-care centres and schools, which forces working parents to home-school their kids besides balancing a more disordered workroom with more interruptions (Arntz et al. 2020).

Raisiene et al. (2020) argued that since the literature's knowledge of telework was developed prior to the pandemic and because people who were introduced to work from home practices as a consequence of the epidemic had unique experiences, a scholarly foundation on work from home practices brought on by the pandemic is crucial for addressing issues with human resource management. The lack of prior investigation on the perceptions of work from home arrangements among construction workers as an outcome of epidemic lockdowns led to the conduct of the current investigation. Thus far, the majority of studies on the pandemic's effects have emphasized building site operations, particularly with regard to the fitness and security of on-site labourers, as demonstrated by the logical evaluation of articles (Raišienė et al., 2020). Organizations did not have enough time to prepare or take action with measures intended to ease the transition for employees since the epidemic and the switch to work from home came as a sudden shock (George et al., 2022). The aspects that affect productivity and well-being that might not be apparent in relation to less drastic changes in the environment are exposed by this unfiltered unfolding of events. Managers can help and retain employees during a forced transition to work from home more successfully if they are aware of the effects on workers and the factors that has a role in this process. Hence, the present research is to examine how the components of work from home affect the output and well-being of the worker and how experience as a mediating factor affects the association among the above two.

A noteworthy research gap exists in understanding how elements such as gender, age, and educational qualifications moderate the association among work from home live out, employee efficiency, and happiness**.** While existing researches have acknowledged the role of prior work experience, there remains a lack of comprehensive mediation analyses exploring how varying levels of experience shape the outcomes of remote work in terms of job satisfaction and performance. Addressing these gaps is essential to provide deeper insights into the diverse ways employees are affected by work from home arrangements and to design tailored organizational policies that foster both productivity and well-being across different workforce segments.

Global events have expedited the use of remote work, which has raised interest in learning more about how it affects workers' well-being and productivity at work. A substantial study vacuum exists about how certain demographic characteristics-gender, age, and educational attainment—moderate these linkages, even though a growing corpus of literature examines these dynamics. Furthermore, even though some research recognizes that experience influences results, more thorough mediation analyses are required to comprehend how different experience levels affect how distant work affects output and job satisfaction. Moreover, the majority of current research on remote work concentrates on average results from a variety of employee demographics. Although this method offers insightful information on broad patterns, it ignores the complex ways that demographic variables may affect these results. Gender differences have been noted, for example, in work-from-home experiences and outcomes; research indicates that women may have distinct possibilities and obstacles than males. The age factor is particularly important since older workers may not be as comfortable or adaptive to remote work technology, which might have a distinct effect on their output and job satisfaction. The situation is further complicated by the fact that people with higher levels of education may behave and produce differently from others when working remotely, depending on their educational background. It is essential to comprehend how these demographic factors alter the link between productivity and job well-being when working remotely to build tailored tactics that meet the demands of a varied workforce. Although the influence of population elements on the results of remote work is becoming better acknowledged, the mediating effect of experience is still not fully understood. In this sense, experience includes both length of service with the company and more general professional experience as well as knowledge of remote work procedures. Studies that already exist frequently assume a linear link between remote work and outcomes, failing to take into account the potential effect of dissimilar experience levels on this relationship. Employees with varying levels of expertise

may utilise remote work possibilities in different ways. This might potentially mitigate the effects on job satisfaction and productivity by allowing for greater task autonomy, flexibility, and self-management. On the other hand, less seasoned workers could have more difficulties when working remotely, which could affect their capacity to remain productive and fulfil their jobs.

Based on the above gap, the following research questions are developed: What direct implications does remote work have on workers' well-being and productivity at work? What role does work experience play in mediating the link between productivity and job well-being in remote employment? What are the processes that experience uses to affect these results? In what ways do age, gender, and level of education mitigate the impact of WFH on job gratification and efficiency? What are the demographic differences in the impacts of working remotely?

2. Review of Literature

Before the epidemic, work from home, also recognized as flexible working, remote work, or telework-was widely discussed in academic literature. Numerous systematic review studies have explored work from home from different perspectives, reflecting the growing interest and research in this area. These studies cover the merits and demerits of work from home (Allen et al., 2015), the connections among supple work measures and managerial and individual performance results (De Menezes and Kelliher, 2011), and the psychological implications of telework on individuals (Gajendran and Harrison, 2007). However, as the research has shown, the incidence of remote working was quite low. The earlier studies, however, reveals that the occurrence of remote working was comparatively little. For instance, Felstead and Reuschke (2021) initiate that the change to work from home (WFH) had occurred gradually in the UK, with a 3% upsurge over nearly 40 years between 1981 and 2019, peaking at 4.7% in 2019, just earlier the epidemic. Comparably, 5.4% of employed people in the European Union between the ages of 15 and 64 said that they typically worked from home in 2019. This tendency has persisted over the past 10 years.

However, Mokhtarian et al. (2005) contended that the literature's estimates of the prevalence of telecommuting varies significantly because of the various telecommuting arrangements (part-time vs. full-time), as well as the variations in study samples and sampling methodologies. However, prior research conducted before the pandemic, mostly concentrating on voluntary and/or informal work from home mode, offers hopeful indication on its advantages on both a individual and organizational level (Allen, 2015). According to a survey done in Australia about six months into the epidemic, Oo and Lim (2021) discovered that mandatory work-from-home arrangements, shifts in work place and hours, and an increase in family responsibilities are just a few of the novel circumstances and difficulties challenged by womanly workers in the Australian building manufacturing. Overworked; (ii) workspace; (iii) social interactions; (iv) teamwork; and (v) childrearing were the top issues rated about the changes in work location and hours (Oo and Lim, 2021). The experiences of women employed in the construction sector with remote work have been determined to be unique due to two factors: (i) the sudden changeover to remote work brought on by the epidemic; and (ii) the relatively low rate of steady and scheduled remote work (or WFH) in the sector before the epidemic (Oo and Lim, 2021). In fact, one of the sectors with the highest levels of gender segregation and male dominance is construction (Ness, 2021).

In Farooq and Sultana's (2022) research on the COVID-19 epidemic in India, they looked at worker productivity and work from home among 250 people. They also looked into how gender affected the association among work from home and workplace efficiency. Their results support the adverse relationship between worker productivity and work-family health. The investigation indicates that gender has a part in moderating the association among worker production and work from home. Hafsah (2022) inspected the practices of millennial workers in Indonesia during the COVID-19 epidemic using 367 responses, finding that working from home had a good outcome on engagement, morale, and output. Using technologies to mitigate this effect, Narayanamurthy and Tortoella (2021) inspected the influence of COVID-19 on work efficiency using a sample of 106 personnel. Employee performance and output quality were improved by working from home. To determine if worker participation in work-from-home engagements was related to total occupation efficiency, productivity

from distant work, and its effects on the efficiency of employees who had kids below the age of 18, Toscano and Zappalà (2021) analyzed 171 participants in Italy. They came to the conclusion that working from home boosts a person's perception of efficiency, which raises his or her real efficiency.

Prasetyaningtyas et al. (2021) examined the impact of work-family harmony (WFH) on output within the banking sector, utilizing data from 234 participants in Indonesia. They examined how work-life balance and job efficiency, as well as WFH's direct impact on productivity, are mediated by work from home. The authors discovered that, through job satisfaction, work-family harmony had a favourable impact on total productivity. The outcomes, however, also established that work from home had a harmful influence on WLB. Marnisah et al.'s (2022) study examined the effect of work from home on 105 Kupang employees' job gratification, organizational commitment, and institutional culture. The outcomes of the research by Mannisah et al. (2022) showed that, either partially or concurrently, work from home, organizational commitment, and organizational culture all had a positive and substantial impact on employee performance. When it comes to employee performance, the work atmosphere, technological infrastructure, and intrinsic motivation all play a role when it comes to working from home. At the same time, there was no discernible connection found among employee efficiency and work independence. Unlike at the workplace, workers have more liberty to do their tasks on their own creative time. Nonetheless, there are definite complications with the setting of working from home. Absence of Internet and other technology resources hinders some workers in their home offices from performing their tasks effectively (Sridhar and Bhattacharya, 2020). The introduction of a work digitalization system is one of the steps the government must take to solve the problem of insufficient work equipment for employees. Leaders could also consider increasing the ability to use technology by providing IT training.

Jaiswal and Arun (2022), there was a decrease in production and an increase in workers' stress levels. Employees who are talented to work from home save cash on traveling costs, that may reduce anxiety and enhance efficiency at work, according to study by Putri and Aman (2021). Furthermore, work-from-home circumstances may also have a large effect on how dynamic workers are. Since some works cannot be finished from home, working from home is not something that is regularly accepted (Mustajab et al., 2020). For example, certain jobs call for huge equipment, which can be perplexing to erect in a house since it needs a substantial places to be set up and used. In a like manner, certain onsite works that is, those where workers must go to their clients' places or locations—cannot be completed from home. The workers' efficiency can suffer as a result of this. The outcomes of Mustajab et al. (2020), who concluded that work from home is the reason for the drop in employee productivity and that it benefits some workers but harms others. Although many workers reported having an improved work-life balance, the authors showed that work from home cannot be broadly accepted since some forms of labour cannot be done in the cosiness of one's own home (Alifuddin and Ibrahim, 2021).

Pirzadeh and Lingard (2021) looked at how distant work affected the mental health of construction workers who were employed both on-site and in work from home. Their findings indicate that, in terms of mental health, physical activity, sleep, nutrition, and work-life happiness, there is no noteworthy variance among the two clusters of respondents. Work-life satisfaction moderated the significant negative effects of augmented hours of working, feeling pressed for time, and work interfering with social life on respondents' mental well-being, even though some respondents expressed a preference for work from home, according to their regression analyses. According to Etheridge et al. (2020), workers who telecommute claim to be just as productive as those who work in an office, and those who feel their productivity is declining report lower levels of well-being from their work-from-home experience. Employees at Barrero et al. (2021) claim aids such as smaller travels, more dynamic work timetables, and extra efficiency; nevertheless, Bellmann and Hübler (2020) discover that working remotely only temporarily improves job happiness and has no lasting influence on work-life balance.

Workers also say that around 35% of the time that was saved was utilized to improve use at work. The rise in work from home work hours that we find in our data is not predicted by variations in projected travel times. Businesses are permitting worker to work from home more frequently for a diversity of causes, such as less office rent, improved work-life balance, condensed travel time, and abridged

threat of the poisonous virus dispersal. The author also notes that as more nations adopted physical segregation as a means of halting the virus's transmission, working from home became more and more common throughout the COVID-19 pandemic's quarantine period. Consequently, for some employees, working from home is their only option. Nonetheless, even though all employees lost output, Fenizia and Kirchmaier (2023) found that workers who had kids living at home lost more exceptional productivity than those who did not. Furthermore, work from home was more harmful to females than to males. Rather, it could have come about as a result of the various household responsibilities women have when working from home. Thus, the present investigation targets to examine the elements related to Work from home has affected the capacity and well- being of the workers. The major objectives are to:

- To analyse the influence of the demographics of workers on their efficiency and well-being
- To analyse the sector-wise comparison of work-from-home related factors of employees.
- To undertake a sector-wise comparison of work productivity and well-being of workers.
- To examine the outcome of work-from-home-related elements on workers' efficiency and well-being.
- To analyse the mediating role of experience in the association between workers' productivity and work-from-home-related factors.

Given the way that current work environments are changing, the investigation on the effects of WFH on employees' productivity and job well-being—which takes experience into account and modifies it by gender, age, and educational background—is quite relevant. Firstly, companies are becoming more and more interested in learning how work-from-home arrangements affect output and job satisfaction, as a result of the rapid adoption of remote work brought about by world events. Through a methodical analysis of these variables, the research can yield empirical data about the impacts of distant work on total job satisfaction, comprising work-life balance and stress levels, as well as whether or not it increases or decreases productivity. These kinds of insights are essential for companies trying to maximize their rules on remote work to generate a positive and fruitful work atmosphere.

Second, the mediation analysis that canters on the mediator's expertise will clarify how the tenure and professional backgrounds of workers affect the association between remote work and job well-being and productivity. This knowledge may be used to develop ways to support workers at various phases of their careers, increasing their productivity and job gratification in distant work situations.

Thirdly, the moderation analysis that takes age, gender, and educational background into account will show how a variety of demographic factors influence the effects of working remotely. Organizations may better fulfil the requirements of various employee groups by customizing their policies and support systems and by identifying and correcting possible discrepancies. Initiatives to advance gender equality and inclusion in remote work contexts, for example, might benefit from understanding how gender affects distant work results. Overall, it is anticipated that the study's conclusions will progress theory and practice. In practical terms, they may guide evidence-based decision-making when creating rules for remote work that optimize output while fostering employee well-being across a range of demographic groups. The study has the potential to enhance our comprehension of the complicated association between remote work arrangements, individual traits, and organizational results. It will also add to the conversation about modern work practices and how they interrupt employee engagement and organizational success in the digital era.

3. Research Methodology

3.1. Data and methodology

The present study was conducted in the state of Kerala, India, and adopted a descriptive research design. The study combined correlational, cross-sectional, qualitative, and non-experimental approaches to explore the research problem in depth. This design was considered appropriate, as the primary objective was to examine the existing patterns of relationships among variables without manipulating any of them.

3.2. Population and Sample Design

The population under investigation consisted of employees working across diverse fields and sectors within Kerala. Given the broad scope of the study, a multi-stage random sampling technique was employed to ensure adequate representation.

• First Stage (Zonal Division): Kerala was divided into three major zones based on its geographical distribution: North, Central, and South.

• Second Stage (District Selection): From each zone, one district was selected at random. To ensure a stronger representation of employees, especially from the IT sector, districts with a comparatively higher concentration of IT professionals were purposively retained. Accordingly, Calicut (North), Kochi (Central), and Trivandrum (South) were chosen.

• Third Stage (Respondent Selection): Within these districts, respondents were identified from different organizations and professional backgrounds using random sampling techniques.

3.3.Sample Size

A total of 360 respondents participated in the study, with contributions distributed across the three districts. This sample size was considered sufficient to provide reliable insights, while ensuring feasibility in terms of data collection and analysis.

3.4.Research Tool

A systematic questionnaire was developed to identify which components of online job are impacting the productivity and well-being of workers. Thirty respondents finished the questionnaire's pre-test before the survey's actual administration. By ensuring that both the participants and the investigators understood the question, pre-testing findings, comments, and recommendations helped to refine and finish the questionnaire, hence reducing the chance of measurement errors. The completed questionnaire is divided into 1. The primary focus of the questionnaire's first section was the respondents' socioeconomic information. 35 declarations pertaining to "Work-Life Balance (WB)", "Communication and Collaboration (CC)", "Autonomy and Control (AC)", "Support and Resources (SR)", "Social Connection (SC)" as well as "Productivity and well-being (PW)" have been included.

4. Results and Discussion

Microsoft Excel was used to enter quantitative data, and SPSS 23 was then used to clean, organize, code, and analyze (George and Mallery, 2016). A descriptive analysis was done to explain the respondent's demographic characteristics. A chi-square test was used to test the influence of demographic features on worker's productivity. MANOVA was employed to compare the aspects of the online work environment that affect employees' productivity on a sector-by-sector basis. Additionally, a one-way ANOVA was used to compare worker productivity by sector. Furthermore, SEM was created to examine the impacts and influences of five elements on the workers' productivity and well-being. Additionally, a mediation study was conducted to examine the role that experience had as a mediating factor in the association among the online work environment parameters and the productivity and well-being of the workers. To analyze mediation processes, at least three variables are required: X, M, and Y. Here, X represents the explanatory variable (EV), Y is the dependent variable (DV), and M is the proposed mediator that helps convey the impact of X on Y. Mediation involves understanding how an intermediate variable (M) transmits the causal association from the independent variable (X) to the dependent variable (Y). The total effect (TE) of X on Y comprises both the direct effect (DE) — the influence of X on Y without mediation — and the indirect effect (IE), which occurs through the mediator M. In essence, the relationship between X and Y can be divided into a direct pathway and an indirect one (Agler and De Boeck, 2017).

To decide whether the sample collected was adequate, the "Kaiser-Meyer-Olkin (KMO)" and "Barlett's Test of Sphericity (BTS)" were employed. This is presented in Table 01.

Table 1: KMO and Bartlett's Test

KMO Measure		0.846
BTS	Approx. Chi-Square	4369.128
	Df	354
	Sig.	0.000

Source: Primary data

Findings of the test of normality is displayed in the below table 02 and have a normality of 0.27 (p = 0.263, statistically insignificant). The Shapiro-Wilk test result is 0.941 as a result. It represents a set of data that is normally distributed.

Table 2: Test of Normality

Quartile	Kolmogorov-Smirnova [a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
	0.272	242	0.263*	0.941	242	0.341

Note: * denotes lower bound of the true significance, and [a] denotes Lilliefors significance correction.
Source:Author's compilation.

A reliability analysis was conducted on the responses about the elements connected with online working and their effect on workers' productivity and well-being using 35 statements that were recorded on a five-point scale. An attempt was made to assess dependability using the traditional Cronbach Alpha (CA) model. The final alpha value for each component is shown in Table 3 below, which is dependent on the number of statements that are currently being studied.

Table 3: Reliability Statistics

	CA	CA Based on Standardised Items	Statement
Work-Life Balance (WB)	0.889	0.891	5
Communication and Collaboration (CC)	0.823	0.834	5
Autonomy and Control (AC)	0.861	0.865	5
Support and Resources (SR)	0.843	0.858	5
Social Connection (SC)	0.857	0.861	5
Worker's Productivity and Well-being	0.872	0.878	5

Source: Primary data

4.1. Effect of Demographics of Workers on their productivity and well-being

The results of chi-square tests are shown in Table 04, which shows that there is no noteworthy association among the sample of demographics of workers on their work efficiency and well-being. These factors include age, educational attainment, and experience. The p-values were all more than 0.05.

Table 4: Demographic Effect on Workers' Productivity and Well-being

Variables	Chi-square	p-value
Age	59.214	0.236
Educational Qualification	74.562	0.487
Experience	89.147	0.639

Source: Survey data

4.2. Sector-wise Work from home related factors of Employees

The MANOVA test was employed to analyse the variances in work-from-home related factors (WH) measures of workers engaged in different sectors, such as public and private. Tables 05, 06, and 07 display the results of the analysis

Table 5: MANOVA (WH)

Effect		Value	F-value	P-value
Intercept	Pillai's Trace	.978	10374.546	***.000****
	Wilks' Lambda	.006	10374.546	***.000****
	Hotelling's Trace	112.696	10374.546	***.030****
	Roy's Largest Root	112.696	10374.546	***.000****
Agricultural categories	Pillai's Trace	.063	2.561	***.023****
	Wilks' Lambda	.946	2.448[b]	***.017****
	Hotelling's Trace	.063	2.448	***.017****
	Roy's Largest Root	.042	3.748[c]	***.005****

Note: * denotes significant.
Source: Survey data.

Table 6: Tests of Between-Subjects Effects- (WH)

Source	Endogenous Variable	F	P-value
Categories	Work-Life Balance (WB)	6.125	***.002****
	Communication and Collaboration (CC)	3.236	***.031****
	Autonomy and Control (AC)	4.569	***.003****
	Support and Resources (SR)	4.614	***.015****
	Social Connection (SC)	4.125	***.018****

Note:*Significant at 5 percent level.
Source: Survey data.

Table 7: Average values of WH variables

SE Variables	Sectors	Mean	Std. Error
Work-Life Balance (WB)	Private Sector	48.145	.296
	Public Sector	51.569	.741
Communication and Collaboration (CC)	Private Sector	54.569	.378
	Public Sector	58.289	.895
Autonomy and Control (AC)	Private Sector	30.369	.189
	Public Sector	34.556	.639
Support and Resources (SR)	Private Sector	33.251	.369
	Public Sector	31.254	.457
Social Connection (SI)	Private Sector	68.145	.144
	Public Sector	65.361	.896

Source: Survey data.

The overall average scores of employers on the five work-from-home-related factors showed a significant variation among the two categories, as indicated in Tables 05, 06, and 07. The MANOVA test using Pillai's Trace was found to be significant at the 5% level (p = 0.01), indicating meaningful variation. When each of the five sector-specific variables was analyzed separately, the test of Between-Subjects Effects revealed statistically significant differences across all variables (p = 0.002, 0.031, 0.003, 0.015, and 0.018). The Estimated Marginal Means further indicate that public sector employees report higher scores in "Work-Life Balance (WB)," "Communication and Collaboration (CC)," and "Autonomy and Control (AC)," while private sector employees show higher scores in "Support and Resources (SR)" and "Social Connection (SI)."

4.3. Sector-wise comparison of work productivity and well-being of workers

One Way ANOVA was employed to measure the variation in the "work productivity and well-being" of employees in the private and public segments in the state, and the results are shown in Tables 08 and 09.

Table 8: Estimated Marginal Means of Decision-Making Skill: Sector-wise

Sectors (Independent variable)	Mean	Std. deviation
Private	42.693	3.15891
Public	44.569	2.78965
Total	43.631	2.97428

Source: Survey data.

Table 9: One-Way ANOVA (Tests of Between-Subjects Effects with Decision-Making Skill as Dependent Variable)

Source	Sum of Squares	df	Mean Square	F	Sig.
Between sectors	273.147	3	137.845	14.568	.000
Within sectors	3411.2697	356	7.569		
Total	3568.857	359			

Source: Survey data.

The productivity and well-being of workers in private and public sector varies significantly depending on the category sector they have involved, as shown in Tables 07 and 08 above. The average productivity and well-being of workers in private and public sector are 42.693, and 44.569 respectively. At a 5 per cent level, the mean difference is statistically important (F value 14.568). Thus, it is concluded that between the two categories, workers employed in the private sector have the highest level of productivity and well-being when they are working from home.

4.4. Effect of work-from-home related factors on productivity and well-being

4.4.1. Calculating model, reliability, and validity

Prior to SEM, confirmatory factor analysis (CFA) was conducted. The number of elements and their association to the pointers are exactly defined by the CFA approach, which analyses measurement models that are built a priori. CFA (fig. 1) is used to assess the model's fit to the data. The CFA results are displayed in the table below. Table 10 shows that utilizing a higher number of samples (sample size = 360) resulted in a computed value of 0.1000, which is less than the value of 0.05. Conversely, the model's well-fitting is indicated by the CMIN/DF ratio of 2.484, which resolves the previously mentioned problem. In this case, the CFI value is 0.956. Additionally, the findings indicate that the root mean square residuals (RMR) and root mean square error of approximation (RMSEA) are 0.0374 and 0.0412, respectively, below the generally accepted 0.08 proposed by Hair et al. (2006).

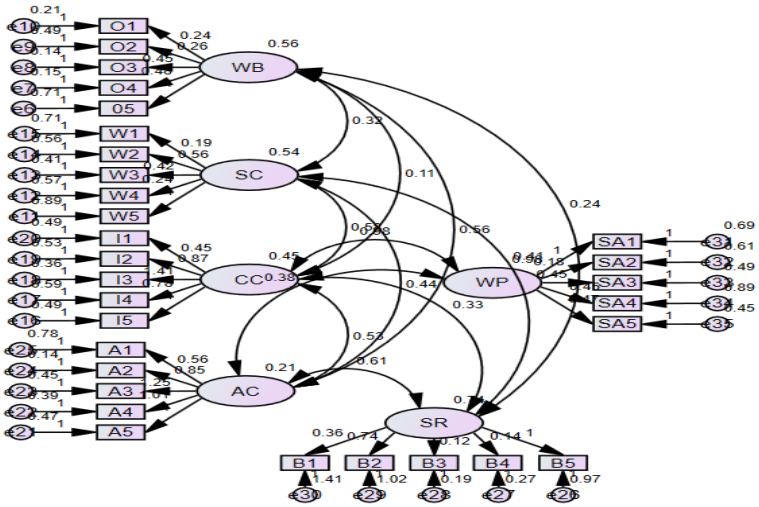

Figure 1: Confirmatory Factor Analysis

Table 10: CFA Results

Indices	Model fit Result	Suggested value
CMIN/DF	2.484	< 5.00
P value	0	> 0.05
GFI	0.915	> 0.90
AGFI	0.989	> 0.90
NFI	0.92	> 0.90
CFI	0.956	> 0.90
TLI	0.967	> 0.90
RMR	0.0374	< 0.08
RMSEA	0.0412	< 0.08
PNFI	0.712	> 0.50
PCFI	0.696	> 0.50

Note: The suggested values are based on Hair et al., 1998; Hu and Bentler, 1999.
Source: Author‘s compilation.

Hair et al. (2006) state that even when the model satisfies the model of measurement fit criteria, it is essential to consider the construct validity and dependability of the model before moving on to the structural model. According to Hair et al. (2010), the measuring framework for latent ideas must satisfy the three categories of validity: discriminant validity, convergent validity, and construct validity. The measurement model's fitness indexes are used to estimate construct validity, the average variance extracted (AVE) is employed to investigate convergent validity, and a summary of the discriminant validity index is generated to evaluate discriminant validity Using IBM SPSS AMOS, we evaluated and computed the correlation coefficients between components. The findings reveal that none of the components exhibit a correlation exceeding 0.85 with any other component. Therefore, it can be inferred that the measurement model in this study has established discriminant validity.

4.4.2. SEM analysis

A SEM analysis using AMOS was done to inspect the impact of factors such as Work-Life Balance (WB), Communication and Collaboration (CC), Autonomy and Control (AC), Support and Resources (SR), and Social Connection (SC) on employee well-being and productivity. With a sample size of 360, the computed p-value was 0.028, which is under the limit of 0.05, indicating statistical significance. The CMIN/DF ratio was 3.696, suggesting an model fit, while the chi-square value of 29.614 (df = 20) further confirmed that the model fits the data significantly. Model fit indices also demonstrated strong validity, with the Tucker-Lewis Index (TLI = 0.972), Adjusted Goodness of Fit Index (AGFI = 0.936), and Goodness of Fit Index (GFI = 0.978) all exceeding the recommended threshold of 0.90. Similarly, the Normal Fit Index (NFI = 0.915) and Comparative Fit Index (CFI = 0.954) indicated an excellent fit. Finally, the Root Mean Square Error of Approximation (RMSEA = 0.0745) and Root Mean Square Residual (RMR = 0.025) were both below the recommended cut off of 0.08, as suggested by Hair et al. (2006), further confirming the robustness of the model.

Table 11: Model Fit Summary of Structural Equation Model

Indices	Value	Suggested value
Chi-square value	29.614	
DF	20	
P value	0.028	> 0.05
Chi-square value/DF	3.696	< 5.00
GFI	0.978	> 0.90

Indices	Value	Suggested value
AGFI	0.936	> 0.90
NFI	0.915	> 0.90
CFI	0.954	> 0.90
RMR	0.025	< 0.08
RMSEA	0.0745	< 0.08
TLI	0.972	> 0.90
PNFI	0.648	> 0.50
PCFI	0.63	> 0.50

Note: the suggested values are based on Hair et al., 1998; Hu and Bentler, 1999.
Source: Author's compilation.

All variables like "Work-Life Balance (WB)", "Communication and Collaboration (CC)", "Autonomy and Control (AC)", "Support and Resources (SR)", "Social Connection (SC)" have a positive impact on the workers' productivity and well-being, as established by Table 12 and from fig. 2, where the unstandardized coefficient of "Work-Life Balance (WB)" is highest with a value of 0.54 when all other route aspects are held perpetual. That is, workers' productivity and well-being is increased by 054.for every unit rise in "Work-Life Balance (WB)".

Furthermore, the unstandardized "Social Connection (SC)" coefficient on employee productivity is 0.47. With productivity rising by 0.47 for every unit rise in "Social Connection (SC)," the positive sign shows that SC has a beneficial impact. At the 1% level, the coefficient value matters. Holding other route elements constant, the coefficients of "Communication and Collaboration (CC)," "Autonomy and Control (AC)," and "Support and Resources (SR)" on women's decision-making ability are 0.39, 0.34, and 0.28 respectively, and show a somewhat positive impact on workers' productivity. The coefficient value is significant at the 1% level of significance.

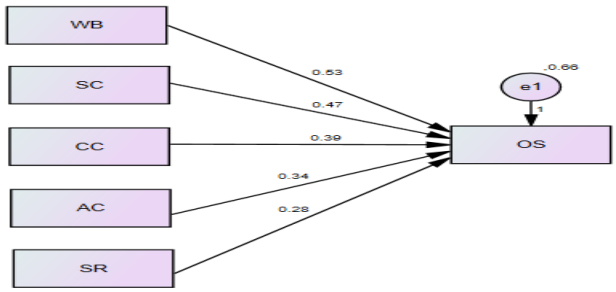

Figure 2: SEM Analysis

Table 12: SEM Result based on Standardised Coefficient

			Estimate	S.E.	t-value	P-value
DM	<---	WB	0.53	0.042	6.451	< 0.001**
DM	<---	SC	0.47	0.061	5.142	< 0.001**
DM	<---	CC	0.39	0.056	6.254	< 0.001**
DM	<---	AC	0.34	0.059	8.987	< 0.001**
DM	<---	SR	0.28	0.044	4.036	< 0.001**

Note: ** denotes significant at a 1% level
Source: Author's compilation.

4.5. Mediation Analysis- Experience

Table 13 presents the summary of the mediation model, indicating that the aspects associated with work from home (WFH) significantly influence employees' capacity to work, with an R^2 value of 0.66. This suggests that approximately 66% of the variance in workers' productivity can be described by the predictors included in the model.

Table 13: Summary of Model

R	R-square	MSE	F- value	Degree of freedom 1	Degree of freedom 2	p
0.6703	0.6612	0.5664	53.1789	1	168	0

Source: Author's compilation.

As shown in Table 14 and Figure 3, the work-from-home factors (X) exert a significant influence on workers' productivity (Y) and well-being, accounting for 63.62% of the effect. The direct effect of WFH factors on productivity is 53.95%. However, when experience is introduced as a mediator, the analysis reveals that experience significantly mediates the association between WFH factors and productivity. The indirect effect is estimated at 44.7%, with a completely standardized indirect effect of 45%.These results suggest that workers with greater degree of experience are more expected to adapt effectively to remote work settings, thereby enhancing their productivity when working from home. In other words, experience strengthens the positive association among WFH practices and employee productivity, highlighting its crucial mediating role.

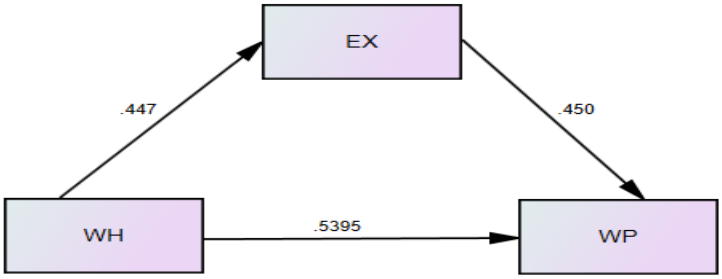

Figure 3: Mediation analysis

Table 14: Mediation Analysis

Total impact of X on Y						
Effect	SE	t	p	LLCI	ULCI	c'_cs
0.6362	0.0571	-7.2925	0	-0.5288	-0.3035	-0.4903
Direct impact of X on Y						
Effect	SE	t	p	LLCI	ULCI	c'_cs
0.5395	0.0545	6.7781	0	0.4771	0.2618	0.4353
Indirect effect(s) of X on Y:						
	Effect	BootSE	BootLLCI	BootULCI		
Exp	0.447	0.0229	0.0944	0.0037		
CSIE(s) of X on Y:**						
	Effect	BootSE	BootLLCI	BootULCI		
Exp	0.45	0.0262	0.1072	0.0045		

Note: **Completely standardised indirect effect.
Source: Author's compilation.

5. Conclusion

This study demonstrates that among the factors influencing worker productivity and well-being in WFH arrangements, work-life balance (WB) is the greatest critical determinant (β = 0.57), next by social connection (SC) (β = 0.47) and communication and collaboration (CC) (β = 0.39). These

findings reinforce existing theories of work-life integration and social exchange, highlighting their central role in sustaining performance in remote contexts. The mediation analysis further shows that experience amplifies the positive influence of WFH factors by 47%, contributing to human capital theory by demonstrating how accumulated experience enhances adaptability and productivity in remote work settings. While the research delivers appreciated visions, it is subject to certain demeritss, including reliance on cross-sectional, self-reported data, potential biases in the SEM approach, and limited generalizability due to its focus on specific districts in Kerala. Future research should employ longitudinal and mixed-method approaches, expand across industries and geographies, and test additional moderators such as organizational support, leadership style, and technological readiness to refine theoretical models. In conclusion, the outcomes emphasise the significance of work-life balance, social connection, and effective communication, with experience acting as a key mediator. For organizations, this implies adopting strategies that enhance work-life integration, strengthen collaboration, and build employee adaptability to ensure sustainable productivity and well-being in the evolving world of work.

To improve productivity and well-being in remote work, organisations should set clear expectations, provide necessary resources, and ensure reliable technological support. Regular communication, collaboration, and constructive feedback are vital to keeping employees engaged, while flexible work hours and breaks help prevent burnout. Supporting mental and physical health through wellness initiatives, along with opportunities for skill development and recognition, fosters motivation and growth. Additionally, encouraging social interaction through virtual team-building and continuously refining policies based on employee feedback can generate a helpful and adaptive remote work culture that sustains long-term success.

Future research on work-from-home (WFH) should include longitudinal studies to assess long-term impacts on productivity and well-being, as well as comparative studies across industries, organizational sizes, and regions to identify sector-specific challenges and best practices. Qualitative approaches like interviews and focus groups can reveal employees' subjective experiences, while investigations into hybrid models and technological integration (e.g., AI tools, virtual collaboration) can highlight ways to enhance efficiency and engagement. Cross-cultural research, along with studies on psychological factors such as motivation and resilience, will deepen understanding of employee experiences, whereas examining policy frameworks can guide effective regulation and support. Additionally, research on employee engagement, organizational culture, and health initiatives will help determine strategies to sustain belonging, teamwork, and overall well-being in remote work contexts.

References

Agler, R., & De Boeck, P. (2017). On the interpretation and use of mediation: Multiple perspectives on mediation analysis. Frontiers in Psychology, 8, 1984. https://doi.org/10.3389/fpsyg.2017.01984

Alifuddin, N. A., & Ibrahim, D. (2021). Studies on the impact of work from home during COVID-19 pandemic: A systematic literature review. Jurnal Komunikasi Borneo (JKoB), 60–80. https://doi.org/10.51200/jkob.vi.3253

Allen, T. D., Golden, T. D., & Shockley, K. M. (2015). How effective is telecommuting? Assessing the status of our scientific findings. Psychological Science in the Public Interest, 16(2), 40–68. https://doi.org/10.1177/1529100615593273

Anakpo, G., Nqwayibana, Z., & Mishi, S. (2023). The impact of work-from-home on employee performance and productivity: A systematic review. Sustainability, 15(5), 4529. https://doi.org/10.3390/su15054529

Arntz, M., Ben Yahmed, S., & Berlingieri, F. (2020). Working from home and COVID-19: The chances and risks for gender gaps. Intereconomics, 55(6), 381–386.

https://doi.org/10.1007/s10272-020-0938-5

Barrero, J. M., Bloom, N., & Davis, S. (2021). Why working from home will stick. NBER Working Paper No. 28731. https://doi.org/10.3386/w28731

De Menezes, L. M., & Kelliher, C. (2011). Flexible working and performance: A systematic review of the evidence for a business case. International Journal of Management Reviews, 13(4), 452–474. https://doi.org/10.1111/j.1468-2370.2011.00301.x

Di Renzo, L., Gualtieri, P., Cinelli, G., Bigioni, G., Soldati, L., Attinà, A., ... & De Lorenzo, A. (2020). Psychological aspects and eating habits during COVID-19 home confinement: Results of EHLC-COVID-19 Italian online survey. Nutrients, 12(7), 2152.

https://doi.org/10.3390/nu12072152

Farooq, R., & Sultana, A. (2021). The potential impact of the COVID-19 pandemic on work from home and employee productivity. Measuring Business Excellence, 26(3), 308–325. https://doi.org/10.1108/mbe-12-2020-0173

Felstead, A., & Reuschke, D. (2021). A flash in the pan or a permanent change? The growth of homeworking during the pandemic and its effect on employee productivity in the UK. Information Technology & People, 36(5), 1960–1981. https://doi.org/10.1108/itp-11-2020-0758

Fenizia, A., & Kirchmaier, T. (2023). Does working from home affect workers' productivity? AEA Randomized Controlled Trials. https://doi.org/10.1257/rct.12741-1.1

Gajendran, R. S., & Harrison, D. A. (2007). The good, the bad, and the unknown about telecommuting: Meta-analysis of psychological mediators and individual consequences. Journal of Applied Psychology, 92(6), 1524–1541. https://doi.org/10.1037/0021-9010.92.6.1524

George, D., & Mallery, P. (2016). IBM SPSS statistics 23 step by step: A simple guide and reference. Routledge.

George, T. J., Atwater, L. E., Maneethai, D., & Madera, J. M. (2022). Supporting the productivity and well-being of remote workers. Organizational Dynamics, 51(2), 100869.

https://doi.org/10.1016/j.orgdyn.2021.100869

Hair, J. F. (2010). Multivariate data analysis: A global perspective. Prentice Hall.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. Journal of Marketing Theory and Practice, 19(2), 139–152. https://doi.org/10.2753/mtp1069-6679190202

Hair, J. F. (2007). Multivariate data analysis. Pearson Education India.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling, 6(1), 1–55. https://doi.org/10.1080/10705519909540118

Jaiswal, A., & Arun, C. J. (2022). Working from home during COVID-19 and its impact on Indian employees' stress and creativity. Asian Business & Management, 23(2), 312–336. https://doi.org/10.1057/s41291-022-00202-5

Kurdy, D. M., Al-Malkawi, H. N., & Rizwan, S. (2023). The impact of remote working on employee productivity during COVID-19 in the UAE: The moderating role of job level. Journal of Business and Socio-economic Development, 3(4), 339–352. https://doi.org/10.1108/jbsed-09-2022-0104

Marnisah, L., Kore, J. R., & Ora, F. H. (2022). Employee performance based on competency, career development, and organizational culture. Jurnal Aplikasi Manajemen, 20(3).

https://doi.org/10.21776/ub.jam.2022.020.03.13

Mokhtarian, P. L., Salomon, I., & Choo, S. (2005). Measuring the measurable: Why can't we agree on the number of telecommuters in the U.S.? Quality & Quantity, 39(4), 423–452. https://doi.org/10.1007/s11135-004-6790-z

Mustajab, D., Bauw, A., Rasyid, A., Irawan, A., Akbar, M. A., & Hamid, M. A. (2020). Working from home phenomenon as an effort to prevent COVID-19 attacks and its impacts on work productivity. The International Journal of Applied Business, 4(1), 13–21.

https://doi.org/10.20473/tijab.v4.i1.2020.13-21

Narayanamurthy, G., & Tortorella, G. (2021). Impact of COVID-19 outbreak on employee performance – Moderating role of Industry 4.0 base technologies. International Journal of Production Economics, 234, 108075. https://doi.org/10.1016/j.ijpe.2021.108075

Ness, K. (2011). Constructing masculinity in the building trades: 'Most jobs in the construction industry can be done by women'. Gender, Work & Organization, 19(6), 654–676. https://doi.org/10.1111/j.1468-0432.2010.00551.x

B. L., & Lim, B. T. (2021). Changes in job situations for women workforce in construction during the COVID-19 pandemic. Construction Economics and Building, 21(2), 73–88. https://doi.org/10.5130/ajceb.v21i2.7526

Pirzadeh, P., & Lingard, H. (2021). Working from home during the COVID-19 pandemic: Health and well-being of project-based construction workers. Journal of Construction Engineering and Management, 147(6), 04021048. https://doi.org/10.1061/(ASCE)CO.1943-7862.0002102

Prasetyaningtyas, S. W., Heryanto, C., Nurfauzi, N. F., & Tanjung, S. B. (2021). The effect of work from home on employee productivity in banking industry. Jurnal Aplikasi Manajemen, 19(3), 507–521. https://doi.org/10.21776/ub.jam.2021.019.03.05

Putri, A., & Amran, A. (2021). Employees' work-life balance reviewed from work from home aspect during COVID-19 pandemic. International Journal of Management Science and Information Technology, 1(1), 30–36. https://doi.org/10.35870/ijmsit.v1i1.231

Raišienė, A. G., Rapuano, V., Varkulevičiūtė, K., & Stachová, K. (2020). Working from home—Who is happy? A survey of Lithuania's employees during the COVID-19 quarantine period. Sustainability, 12(13), 5332. https://doi.org/10.3390/su12135332

Schnitzer, M., Schöttl, S., Kopp, M., & Barth, M. (2020). COVID-19 stay-at-home order in Tyrol, Austria: Sports and exercise behaviour in change? Public Health, 185, 218–220. https://doi.org/10.1016/j.puhe.2020.06.042

Sridhar, V., & Bhattacharya, S. (2020). Significant household factors that influence an IT employees' job effectiveness while on work from home. International Journal of Innovation Science, 13(1), 105–117. https://doi.org/10.1108/ijis-09-2020-0171

Suratkon, A., & Azlan, A. S. (2021). Working from home (WFH): Challenges and practicality for construction professional personnel. International Journal of Sustainable Construction Engineering and Technology, 12(4), 1–12. https://doi.org/10.30880/ijscet.2021.12.04.002

Tavares, A. I. (2017). Telework and health effects review. International Journal of Healthcare, 3(2), 30–36. https://doi.org/10.5430/ijh.v3n2p30

Toscano, F., & Zappala, S. (2021). Overall job performance, remote work engagement, living with children, and remote work productivity during the COVID-19 pandemic. European Journal of Psychology Open, 80(3), 133–142. https://doi.org/10.1024/2673-8627/a000015