

Factor Analysis of Employer-Employee Behavioural Changes in the Software Sector due to work from Home Culture

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Abstract

The Covid-19 pandemic made Work-From-Home (WFH) the new way of working. The pandemic Covid-19, sweeping the world, has rendered a large proportion of the workforce unable to commute to work, as to mitigate the spread of the virus. The pandemic has changed the way people work, and more and more people are choosing to WFH. Unlike traditional work patterns, this approach has limitations and has had a significant impact on both organizations and individuals. This has resulted in both employers and employees seeking alternative work arrangements. This study investigates the impact that family-work conflict, social isolation, distracting environment, job autonomy, and self-leadership have on employees' productivity, work engagement, and stress experienced in the employees working in software industries. The work also brings about the factors for employees to be hesitant to return to office for work. This paper involves a study on WFH behavioural changes in the employees and managers of software industries. For this study, two separate questionnaires for employers and employees of the software sector are prepared and survey responses are collected. 350 Responses from employees and 240 responses from employers/managers of various software industries in Bangalore are collected via email, phone calls, and in person meetings. Factor Analysis is carried out to identify the groups of interrelated variables and understand how these variables are related to each other. The significant factors which largely contribute to the opinions of employers and employees are analysed. Recommendations on how to address these factors are provided.

Keywords: Work from home, software industry, factor analysis, resistance to return to office.

1.0 Introduction

Global lockdowns and travel bans have changed assumptions about the nature of work. Remote work may seem cheap but there can be hidden costs in the work culture. Lockdown meant social isolation for many, a burden many had to bear in silence. For industries, participation commitment is expected from employees as well as management. People who work entirely alone tend to be less productive over the period of time, but can work longer hours than those who work in office. Leaders can respond by working with their teams and using collaboration technology to stay connected. Many software

industries have already chosen hybrid work culture and 56% of these companies allow employees to choose when and how often they come to the office or work remotely. In a hybrid WFH environment, fewer people are on-site. This gives employees more freedom to deal with things that happen in their personal lives. For some companies, this may mean a reduction in real estate. Hybrid work can at least help one figure out the office space needed for the employees (Xiao, 2021). New standards in Human Resource (HR) will move away direct contact with remote workers, who will virtually meet most of the time. Rethinking workplace strategy can reduce real estate costs by 30%. This allows one to reinvest the savings elsewhere. It also gives employees more work options of remote offices or small shared spaces².

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2.0 Literature Review

Organizations and people had multidimensional challenges during the changeover period. Literature presents analysis that was carried out to achieve insight into how organizations and individuals are adapting to those changes and challenges⁵. Though the effects of coronavirus on the material body are acknowledged and still the research is ongoing, its impact on human behaviour and psychosocial impacts continued to be unknown. To dig deeper into the impact, 23 in-depth interviews (12 men, thirteen women, average age 39 years) were conducted with middle managers in public and non-public service sectors in Riyadh, Saudi Arabia³. The researchers made use of useful resource conservation concepts to observe how personnel perceive unique kinds of stressors and the way they reply to exclusive coping strategies, which includes the kinds of organizational aid furnished in the course of this crisis. Due to the outbreak of the pandemic, most personnel within the Information Technology (IT) enterprise have switched to running from home. At the same time, worker participation has provided several advantages to the company. Analysis of the three elements is carried out: work-lifestyle balance, worker motivation, and worker pressure to look how those elements impact work engagement. Primary records for the final interpretation had been acquired from 75 respondents through an online survey. Respondents were personnel of diverse IT organizations in predominant IT centres in India, Bangalore and Trivandrum. Regression evaluation, ANOVA tests and t-tests had been additionally carried out on the collected information leading to conclusions about the domestic measures that could be taken up to aid worker's mental health. Many personnel had been compelled to take measures to work at home in the course of the pandemic because of social distancing and lockdown guidelines.

Literature also presents the experience of employees in previous studies who reported that work may differ while working from home. A focused study of 500 full-time Hong Kong employees who experienced WFH was conducted⁹. The survey was performed in early September 2020. Workplace productivity may be described as the extent of performance with which organizational responsibilities and desires are achieved. It is widely recognized throughout all industries that place of work productivity is a key achievement component in growing profitability and preserving personnel happiness. Many agencies are looking to undoubtedly effect productivity whilst preserving worker morale excessive with the aid of using making strategic adjustments to their workplace environment. This included providing snug wreck rooms, state-of-the-art technology, and worker well-being programs⁴. The question raised by the researcher was if the place of work itself became redefined and the worker's kitchen desk has become the workplace. Shortly after the outbreak, the agencies closed their places of work and ordered their personnel to WFH. During March 2020, almost 42% of the U.S. workforce had begun to WFH.

The goal changed to apprehend the effect of social, behavioural, and bodily elements at the wellbeing of the workplace with administrative centre staff operating from home due to Covid-19. Survey was conducted to study the behavioural changes in employees of American organizations during April to June 2020 with 988 legitimate responses. Linear regression, multinomial logistic regression, and Chi-square assessments had been used to recognize the elements related to normal bodily and intellectual fitness. The pandemic has modified the way people work, with more people deciding to WFH⁶. Unlike conventional work patterns, this method has boundaries and had a vast effect on organizations and individuals. It additionally brings many demanding situations to the process of HR professionals. Without the expert skills required for this process, a person cannot absolutely adapt to the surroundings and is consequently limited, and the expertise required for telecommuting do now no longer permit telecommuters to increase good enough qualities. These include clerical and verbal exchange skills. It requires the improvement of certain work abilities. These abilities are one of a kind among the abilities required for workplace jobs. The literature also highlights the elements that impact the bodily and intellectual well-being of telecommuters and gives a foundation for thinking about the high-quality telecommuting experience. Telecommuting saves time each day to go back and forth and gives flexibility for personnel to journey and take care of their families¹. WFH allows personnel to pick out whilst they're maximum productive. WFH helps hold co-employees from getting distracted, especially in open-plan offices. With WFH options, personnel can take breaks from the workplace and support a healthier lifestyle leading to custom-designed work-life balance⁷. One can give attention to organizing. In this contemporary world, and given the modern-day situation, the handiest flexibility approach a business enterprise can comply with is the WFH approach. The effects of this version may be negative sometimes. Positive outcomes consist of decreased travel time to the workplace, value savings, and toddler care (if the worker is a parent). Negative outcomes consist of poor conversation among colleagues, fitness problems, and loss of good non-public support. Most IT groups have incorporated telecommuting into worker holidays to enhance productivity.

3.0 Problem Statement

One of the biggest challenges that companies face, particularly in pandemic conditions like Covid-19, is maintaining overall production levels. Work-life balance is crucial for both individuals and corporations. The WFH paradigm is the most popular option to maintain production levels while assuring safety. Employees in the software industries were advised to return to work as soon as Covid cases began to fall, but many are reluctant to do so for a number of reasons. This paper addresses the challenges of the level of acceptance of remote

working by the employees and response of the employers to the idea of continuing working remotely.

4.0 Objectives

The objectives of this paper are:

- To analyse the behaviour of WFH employees in the lockdown period
- To analyse the Employee-Employer Relationship during the lockdown period
- To compare the traditional work patterns and the newly adopted WFH

5.0 Methodology

Survey is the process of collecting, analysing and interpreting data from many individuals. A questionnaire is the set of questions given to participants of a research project. The methods used to collect survey data have evolved with the change in technology. From face-to-face surveys to now online and email surveys, the world of survey data collection has changed with time.

5.1 Factor Analysis

Factor evaluation is a statistical technique used to explain the variability between found and correlated variables in phrases of a potentially small wide variety of unobserved variables referred to as factors. For example, variability within the 6 found variables might also additionally predominantly mirror variability within the 2 unobserved (baseline) variables. Factor analysis is typically utilized in psychometrics, biology, marketing, product management, operations research, finance, and machine learning.

The Kaiser-Meyer-Olkin (KMO) is a statistical measure used to determine the suitability of data for issue evaluation. This test measures the pattern validity of each variable in the version and across all models. In general, KMO values between 0.8 and 1, indicating a suitable sampling. A KMO cost near 0 indicates a huge partial correlation.

6.0 Data Collection Analysis

The survey questionnaire is prepared with the following variables – Quality of Work, Work Environment,

Table 1: Correlation Matrix

		x1	x2	x3	x4	x5	x6	x7	x8	x9	x10
Correlation	x1	1.000	.127	.171	.037	-.012	.005	-.006	-.072	.101	-.045
	x2	.127	1.000	.132	.037	.023	-.132	.034	.108	-.027	.040
	x3	.171	.132	1.000	.006	-.025	-.026	-.015	-.001	.010	-.037
	x4	.037	.037	.006	1.000	.013	.064	-.028	-.033	-.021	-.003
	x5	-.012	.023	-.025	.013	1.000	.020	.025	-.014	-.044	.040
	x6	.005	-.132	-.026	.064	.020	1.000	-.005	-.114	-.054	-.052
	x7	-.006	.034	-.015	-.028	.025	-.005	1.000	-.002	-.039	.130
	x8	-.072	.108	-.001	-.033	-.014	-.114	-.002	1.000	-.060	-.011
	x9	.101	-.027	.010	-.021	-.044	-.054	-.039	-.060	1.000	.038
	x10	-.045	.040	-.037	-.003	.040	-.052	.130	-.011	.038	1.000

a. Determinant = .843

Table 2: KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.523
Bartlett's Test of Sphericity	Approx. Chi-Square	42.221
	df	45
	Sig.	.590

Communication, Team Work, Reliability, Time Management, Well Being. 350 responses from employees and 240 responses from employers/managers of various software industries in Bangalore are collected via email, phone calls, and in person meetings. The data collected is analysed using factor analysis. Table 1 shows the correlation matrix.

Table 3: Communalities

	Initial	Extraction
x1	1.000	.557
x2	1.000	.558
x3	1.000	.429
x4	1.000	.300
x5	1.000	.273
x6	1.000	.513
x7	1.000	.460
x8	1.000	.548
x9	1.000	.603
x10	1.000	.565

Extraction Method: Principal Component Analysis.

The correlation matrix gives the correlation coefficient between one variable and each variable in the investigation. With respect to the correlation matrix, any two sets of variables that have a value less than 0.5 can be omitted from the matrix.

The Kaiser Meyer Olkin (KMO) determines whether or not the responses given with the pattern are enough or not. The cost 0.925 shows that the pattern is right sufficient for the factor evaluation to proceed. Bartlett's check shows the power of the relationship amongst the variables. KMO and Bartlett's test shown in Table 2 offers the general importance of the correlation inside a correlation matrix.

Communalities in Table 3 show how much of each variable is accounted for the underlying factor taken together. 55.7 % of variable 1 is accounted for similarly 55.8 % of variable 2 is accounted for.

The values of the variances of the extraction sum of squared loadings indicate that 13.321 % of variable 1 and 12.439 % of variable 2 are significant. All the remaining factors aren't significant. This is presented in Table 4.

From the Scree plot in Figure 1, it is analysed that from the second one factor, the road is nearly flat which means every successive factors accounting for smaller and smaller quantities of the entire variance. Component matrix tells the correlation between variable and the factor. The rotation reduces the variety of factors on which the variables under research have excessive loadings. It makes the translation of the analysis easier. The rotated component matrix is shown in Table 5.

Table 4: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.332	13.321	13.321	1.332	13.321	13.321	1.306	13.063	13.063
2	1.244	12.439	25.760	1.244	12.439	25.760	1.231	12.308	25.371
3	1.131	11.305	37.065	1.131	11.305	37.065	1.163	11.632	37.004
4	1.099	10.986	48.051	1.099	10.986	48.051	1.105	11.047	48.051
5	.981	9.807	57.858						
6	.968	9.684	67.542						
7	.853	8.534	76.076						
8	.837	8.367	84.443						
9	.805	8.048	92.491						
10	.751	7.509	100.000						

Extraction Method: Principal Component Analysis.

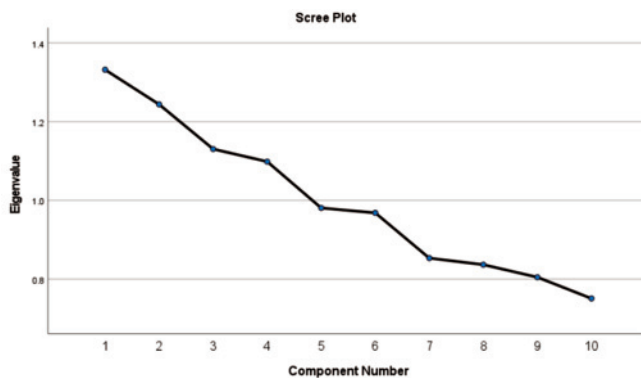
Table 5: Rotated Component Matrix

	Component			
	1	2	3	4
x1	.710	.198	-.017	-.117
x2	.536	-.465	.166	.165
x3	.642	-.071	-.105	.029
x4	.227	.226	-.039	.442
x5	.003	.061	.298	.425
x6	-.088	.592	-.133	.371
x7	-.012	-.005	.669	.111
x8	-.099	-.716	-.122	.101
x9	.173	.229	.083	-.717
x10	-.062	-.015	.740	-.115

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

**Fig 1: Scree Plot**

7.0 Results and Discussion

Kaiser Meyer Olin (KMO) determines if the answers given in the sample are sufficient. Values of 0.641 and 0.523 indicate that the sample is sufficient to proceed with factor analysis. From this result, it is concluded that the employee's attitude towards working from home mainly depends on her three factors: work environment, teamwork and communication. Employers agree that while their employees demonstrate to the organization the expected productivity, monitoring and managing their workers

remotely takes more time and effort. The survey information which is collected does not include information about age, gender, spouse or children. It cannot be fully understood that barriers exist in working from remote and office setups.

Survey data collected does not consider age, gender, and family information. Scope exists to analyse male and female responses separately, parent and non-parent and family type (nuclear family, joint family, etc.). Extending this work to other information technology-intensive cities in India, there are opportunities to expand work into sectors such as Human Resource (HR) that currently offer work from home.

8.0 References

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