

A STUDY ON WORK FROM HOME DURING COVID-19 PANDEMIC: A SEM OF EMPLOYEE PERFORMANCE

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Abstract: *The covid-19 virus changed everything suddenly, the lockdown was imposed, and social distancing became the new normal. This pandemic has affected the routine operations of every business organisation overall industries globally in the year 2020. With the lockdown in place, billions of people, excluding the essential workers, have been forced to work from home. Corporate authorities around the world have no other alternative than providing flexible worksetting including work from home. This research was an attempt to explore the relationships / impact of work from home on employee performance under descriptive research design. The research was aimed to test the relationship between the variables affecting employee performance while working from home during the lockdown, based on the hypothesized model of the theory of planned behaviour. Hypothetical relations among the variables were tested using parametric statistical analysis with the help of AMOS model testing. It was found that employee's performance during their tenure of work from home is dependent on their attitude towards work from home and home atmosphere.*

Keywords: *Covid-19, Work from Home, Employee Perception, Employee attitude, Employee Behaviour, Employee Performance, Home Atmosphere.*

INTRODUCTION AND BACKGROUND

Thousands of years ago, when early humans moved out to hunt, it is very likely that some of them chose to stay back at home and work on more important issues. Similarly, almost the entire global population is working from home these days because of the covid-19 pandemic. Manhood's harmless bet is to stay safe indoors and continue work as well while the coronavirus pandemic continues to spread globally. Though the working class is trying to adapt to the work from home culture, most of them are not able to get used to the work-from-home routine due to various individual issues. Employees face various challenges while dealing with professional and family problems simultaneously during work from home. It is observed that various factors like home environment and disturbance created by family members have a significant impact on employee behaviour towards

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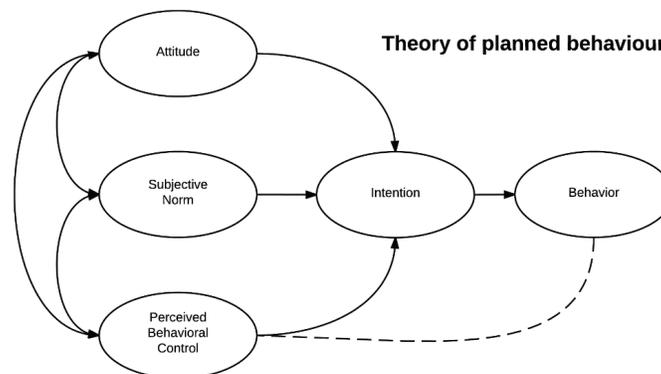
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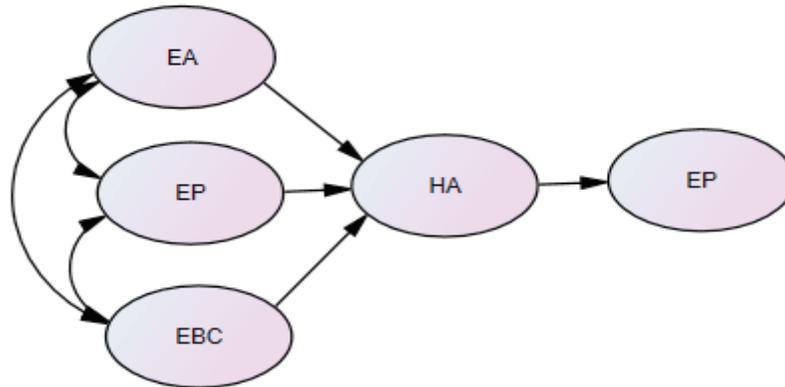
productivity along with his perception about work from home. The majority of the employees considered work from home as a non-working day and used to complete only formalities during such time before the covid-19 pandemic. But, this is not the case in lockdown; now the entire work needs to be done from their home every day and there was no choice left but to complete the daily assignments allotted by their company.

The major focus of this research was to study the impact of the covid-19 pandemic in terms of employee performance incorporate with special reference to work from home practices. Indian industry was driven towards new ways of working based on government guidelines with great significance to the modern world. The new normal in the working culture of companies consists of numerous measures enabling flexibility in time and place. Even though companies considered this as an opportunity and embraced the work from home culture to reduce operating costs, it resulted in creating more productive employees. However, it is yet not clear whether such initiatives and expectations are realistic as very little research has been done on how the introduction of new ways of working affects operational objectives. (Blok M., Groenesteijn L., van den Berg C., Vink P. 2011).

The conceptual background of the research was designed based on the *Theory of Planned Behaviour* proposed by Icek Ajzen in the year 1985. The theory of planned behaviour states that attitude, subject norms, and perceived behavioural control, together shape an individual's behavioural intentions and behaviours. The researchers have defined the attitude as individuals' personal belief about the benefits of the action if completed, subjective norms as the elements of social concern about the particular action, perceived behavioural controls are the external factors affecting the individual performance in completing the desired action, behavioural intention as to whether the individual is finally taking any action about completion of the desired action and the behaviour is the final choice of individual about his behaviour for that particular phenomenon in the form of action.



The research plan was aimed to test the relationship between the variables affecting employee performance while working from home during the lockdown, based on the hypothecated model of the theory of planned behaviour. The conceptual framework is developed similarly to the theory of planned behaviour.



The variables of the theory of planned behaviour were replaced with the measurement variables related to work from home and it was hypothesised that the employee attitude, employee perception and employee behavioural control has an impact on their performance where the home atmosphere acts as the subjective norm.

LITERATURE REVIEW

Nicholas Bloom (2013) in the research study titled “does working from homework? Evidence from a Chinese experiment” stated that almost 10% of employees regularly work from home (WFH) in a normal working environment globally and this number was shrinking before the covid-19 pandemic. The result of this large scale practical experiment was based on the experiment on employees of CTrip which is a major Chinese travelling giant. Employees working in the call centre of CTrip were assigned work from home for 9 months. The result of the study disclosed a 13% increase in employee performance out of which 9% improvement was related to working for more time at home than working from the office. It is also observed that the overall satisfaction of employees towards their job was also improved while they worked from home. CTrip then allowed their employees to work from home based on the outcome of this research which surprisingly resulted in a 22% improvement in employee working. This experimental research outcome highlights the benefits of learning and selection effects when companies are adopting modern management practices like WFH (work from home). The research also highlighted that frequency of working from home has been increasing rapidly in the U.S. and Europe. But there is no surety of performance and enterprises are

criticising the effectiveness of the phrases “shirking from home” highlighted by this research. The outcome of the research also reported that employees working from home substantially have higher work satisfaction, performance and psychological attitude scores, and their job attrition rates fell by over 50%. Further, when the experiment ended and workers were allowed to choose whether to work at home or in the office, selection effects almost doubled the gains in performance.

The recent global pandemic of COVID-19 has enforced corporates to deploy the concept ‘Work from Home’ (WFH) into an official mandate. Now, the WFH concept is emerging from all sectors, as the governments of various countries globally instructed industries overall sectors to maintain social distance. The work from home concept is new to the majority of the employees, as the COVID 19 has forced almost all the employees of all the sectors to work from home for the first time. Even though the employees are also experiencing a new environment, this research is an attempt to find out the working experience of the employees while working from home compared to working in an office. It was observed in the research outcome by Bloom et al. in 2015 that the willingness to work from home is entirely dependent on comfortable space at home, presence of children at home, quiet environment at home and good internet connectivity. The majority of the respondents who participated in the research had the opinion that even if they are ready to work from home they do not like to work from home. The Covid-19 pandemic resulted in the highest number of employees working from their home globally during the year 2019-2020. It was highlighted in the outcome of the research by Shareena & Shahid, Mahammad in 2020 that the knowledge of fishing scams, cybersecurity and other online frauds is one of the key requirement of secure working from home in terms of business risk. Organisations also had to re-organise the knowledge resources and protections from security threat (Shareena & Shahid, Mahammad 2020). The workplace is a functional, physical and psychological entity that helps employees to identify the comfort fit between employee performance and the atmosphere at the workplace. Vischer (2007) highlighted the concept of seeking comfort at the workplace and its impact on employee behaviour. Employees seek comfort at the workplace in terms of environmental comfort which incorporates three ordered categories: the physical, functional, and psychological. The above study also has signified the importance of physical comfort factors that relates to basic human needs which are safety, hygiene, and accessibility. Functional comfort is characterized as help for clients’ exhibition in business-related exercises. Mental comfort is identified with sentiments of having a place, proprietorship, and command over the workspace (Vischer 2008).

Virtual workers need to develop psychosocial comfort in their work environment as was depicted in the research done by Lee Stadtlander, in 2017. The purpose of the research conducted was to extend the existing body of knowledge in the area of academics and education to examine how faculty who teach only online, control

their workspace at home and how working at home has affected their feelings about their work and home environment. The authors related this concept to the mechanics of computer and virtual tool (e.g., smartphone) use; however, it seems logical that the model could include the homework environment and how online faculty members manipulate that environment to accommodate their needs (Hyrkkänen et al. 2012). The case study's goal guided by an extension of Vischer's user-centred model of the work environment was to address this research gap through interviews and using photo voice, a technique in which participants take photos and are interviewed about them. Eighteen employees from an online college were enlisted through promotions in the staff bulletin. The consideration basis was that the individual should just work on the web. Intrigued people finished an email meet and messaged a photograph of the region they thought about work. Each participant was interviewed about his or her responses and photos for 15–20 min on the telephone. Numerous members deliberately isolated their home and work environment through either using a different room/territory or keeping up a work routine that isolated work and home through time the board. However, the technology required for conducting their work like computer, printer, etc. also played a strong role in the choice of maintaining a separate workspace. The utilization of photo voice offered bits of knowledge into how members saw and contemplated their workspace. Of worry, for some employees was the environmental factors inside their characterized workspace; having their books accessible and a wonderful view from their window were referenced (Lee Stadtlander, 2017). Implementation of “social distancing” policies around the world due to the spread of COVID-19 have raised the question of how many jobs can be done by working from home. The study by Maho Hatayam, 2020 considers jobs' characteristics and internet access at home as important elements of working from home. The findings of the research indicate that the responsiveness of jobs to working from home increases with the level of economic development of the country. This particular observation is driven by the fact that the jobs in poor and developing countries are using less information and communications technology and are being more intensive in physical/manual tasks. Employees in the group of salaried and formal workers, women, and young college graduates have jobs that are more acquiescent to working from home than the average worker. The study also observed that the work from home concept cannot be adopted for workers in hotels and restaurants, construction, agriculture, and commerce. The study found that the occupations explain less than half of the variability in the working-from-home indexes within countries, which highlights the importance of using individual-level data to assess jobs' amenability to working from home (Maho Hatayam, 2020). Working from home has a positive impact on unpaid overtime hours and is even negatively associated with paid overtime and increased work effort and is intrinsically motivated “extra” work effort. Employees, who work from home, are also more productive. Thus, implementing working from home seems to be a beneficial strategy for firms. Notwithstanding initiating higher

work exertion, managers can profit by the usage of work from home as they can spare working expenses because of diminished office space (Bloom et al. 2015). Work from home should be an option as employee preferences are different than that of management preferences and hence mandatory work from home can initiate dissatisfaction feelings among employees (Bélanger 1999). Working from home is practised by workforces as an individual benefit and a symbol of gratitude and trust if it is voluntary. Employees respond to working from home with “extra” work effort only under this condition, (Fehr and Gächter 2000). Work from home can lead to personal and professional isolation of employee from corporate because of employee’s reduced social interaction within the organisational culture which may lead to the isolation of employee from organisational goals also (Hill et al. 2003). Therefore, business organisations need to blend their organizational culture where employees can have frequent face to face to team meetings with supervisors and colleagues to share important information, to feel integrated with the team and to identify with the company and working from home as well (Bailyn 1988). Employees have the highest intrinsic motivation if they get regular feedback on their performance from work from home and physical office work also. Thus, firms need to make sure that they provide appropriate feedback (Hackman and Oldham 1976). Working from home significantly influences employees’ work efforts due to a comfortable home atmosphere and psychological peace at work. According to Gajendran and Harrison (2007), only a few employees always work from home whereas the major number of employees has a composite working structure based on the type of company they are working in. However, a lot of employers fear that employees exploit the freedom when working from home and lesser their work effort (Gariety and Shaffer 2007) (Gajendran, Ravi S., and David A. Harrison. 2007). Employers can benefit from the implementation of working from home, as they can save operating costs due to reduced office space in addition to inducing higher work effort (Bloom et al. 2015).

METHODOLOGY AND DATA ANALYSIS

This research study was an attempt to explore the relationships between work from home and employee performance under a descriptive research design. An employee perception survey using online platforms was conducted to understand the employee attitude, perception, performance and opinion about behavioural control. The survey was conducted with the help of a structured closed-ended instrument in the form of the questionnaire. All the variables utilised for testing hypothetical relations were measured on a five-point Likert interval/ratio scale. As the population of the employees working from home was infinite and unrestricted, 1290 responses were considered for analysis concerning Morgan’s (Krejcie, R.V., & Morgan, D.W., 1970) sample size determination table under the non-probability sampling method.

Hypothetical relations among the variables were tested using parametric statistical analysis with the help of AMOS model testing. Instrument reliability was determined using Chronbach’s Alpha value and results obtained were in the acceptance range as shown below the table.

Reliability:

The reliability of the instrument was estimated using the Cronbach alpha test using SPSS as shown below:

Case Processing Summary			
		N	%
Cases	Valid	1290	100.0
	Excluded ^a	0	.0
	Total	1290	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics	
Cronbach’s Alpha	N of Items
.892	23

Internal consistency is typically measured using Cronbach’s Alpha (α). Cronbach’s alpha ranges from 0 to 1, with higher values indicating greater internal consistency and ultimate reliability. An alpha value of more than 0.7 is acceptable in this case as per the guidelines of social science research.

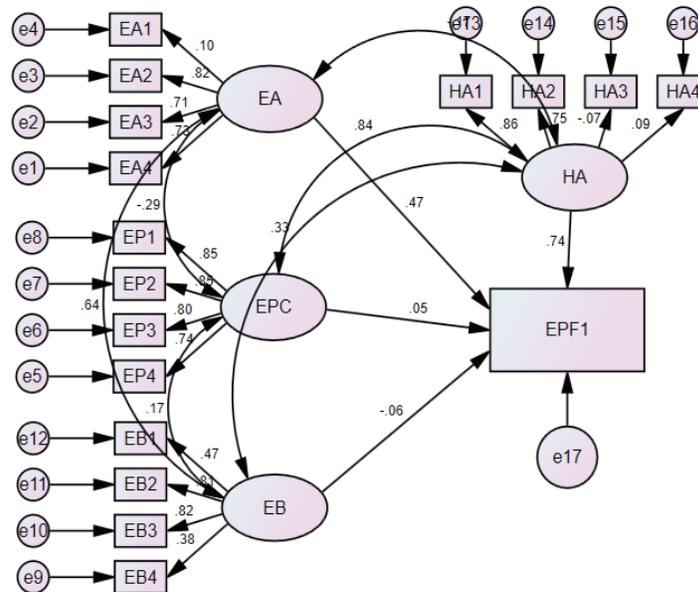
MODEL TESTING

The questionnaire used to collect data was coded to measure employee’s opinion towards work from home towards their attitude, perception, behaviour and impact of home atmosphere on their overall performance. All these variables were coded in the form of questions as shown below in the mentioned table.

Dependent Variable	Measurement Variable	Code Used in Model
Home Atmosphere	The home atmosphere was very much favourable for work	HA1
	It was comfortable for family members	HA2
	The home atmosphere is not congenial to work due to a lot of disturbances	HA3
	Lethargic approach hampered work	HA4

Employee's Perception	Work from home is an efficient option than office	EP1
	It is very comfortable to work from home	EP2
	It helps to enhance your performance	EP3
	Work from home is economic for both company and employee	EP4
Employee's Attitude	Work from home was nothing but a holiday	EA1
	It was very boring to work from home	EA2
	Work from home cannot compete with working from the office	EA3
	Wasted my home resources during Work from home	EA4
Employee's Behaviour	I was working as per my comfort	EB1
	Log in and log out timings were not fixed	EB2
	The workload was increased during work from home	EB3
	I will prefer to work from home overwork from the office	EB4
Employee's Performance	Completed all my assignments in the given time	EPF1

It is assumed for this research study that, employee performance is dependent on employee attitude, perception, behaviour and home atmosphere towards working from home. This relation of significant impact between variables was tested for the below-mentioned model using the AMOS model testing tool. The regression and facto average weight were estimated in this analysis. The results of the analysis were as shown below:



The model is recursive.

Sample size = 1290

Variable counts (Group number 1)

Number of variables in your model:	38
Number of observed variables:	17
Number of unobserved variables:	21
Number of exogenous variables:	21
Number of endogenous variables:	17

Variable counts (Group number 1)

Result (Default model)

Minimum was achieved

Chi-square = 5740.193

Degrees of freedom = 110

Probability level = .000

If the appropriate distributional assumptions are met and if the specified model is correct, then the value 0.000 is the approximate probability of getting a chi-square statistic as large as the chi-square statistic obtained from the current set of data. For example, if the probability is .05 or less, the departure of the data from the model is significant at the .05 level.

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P
EA4	<---	EA	.733			
EA3	<---	EA	.711	.041	23.293	***
EA2	<---	EA	.824	.037	26.090	***
EA1	<---	EA	.100	.041	3.301	***
EP4	<---	EPC	.741			
EP3	<---	EPC	.802	.035	28.583	***
EP2	<---	EPC	.847	.038	30.279	***
EP1	<---	EPC	.850	.035	30.371	***
EB4	<---	EB	.380			
EB3	<---	EB	.825	.155	12.819	***

			Estimate	S.E.	C.R.	P
EB2	<---	EB	.810	.144	12.789	***
EB1	<---	EB	.473	.102	10.705	***
HA1	<---	HA	.862			
HA2	<---	HA	.749	.030	29.628	***
HA3	<---	HA	-.066	.036	-2.211	.027
HA4	<---	HA	.090	.036	3.026	.002
EPF1	<---	EA	.467	.062	9.674	***
EPF1	<---	HA	.741	.087	9.607	***
EPF1	<---	EPC	.047	.073	.742	.040
EPF1	<---	EB	-.055	.105	-1.104	.020

FINDINGS

The regression estimate between EPF1 (Employee performance) and EA (Employee's attitude) is .467 which indicates that the employee's performance is 46.7% dependent on their attitude towards work from home. EPF1 (Employee performance) is 74.1% (R=.741) dependent on HA (Home atmosphere). EPF1 (Employee performance) is 4.7% (R=.047) dependent on and EPC (Employee's perception towards work from home). EPF1 (Employee performance) is 5% (R=.055) dependent on and EA (Employee's behaviour during work from home). All these regression estimations were found significant with an alpha value less than 0.05 and hence we reject the null hypothesis of the research.

Intercepts: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P
EA4			2.684	.032	83.713	***
EA3			2.990	.032	93.762	***
EA2			2.593	.027	94.827	***
EA1			2.033	.032	63.669	***
EP4			3.622	.036	101.781	***
EP3			3.129	.033	95.181	***
EP2			3.304	.035	93.439	***
EP1			3.091	.033	92.700	***
EB4			3.000	.038	78.769	***
EB3			3.562	.035	102.159	***
EB2			3.318	.033	100.627	***
EB1			3.001	.033	90.184	***

			Estimate	S.E.	C.R.	P
HA1			3.430	.031	110.505	***
HA2			3.513	.032	109.289	***
HA3			2.684	.033	82.220	***
HA4			3.002	.033	91.944	***
EPF1			3.730	.030	122.969	***

Covariance: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P
EA	<-->	EPC	-.230	.028	-8.175	***
EA	<-->	EB	.281	.028	10.201	***
HA	<-->	EA	-.142	.028	-4.979	***
EPC	<-->	EB	.084	.017	4.786	***
HA	<-->	EPC	.764	.042	18.156	***
HA	<-->	EB	.163	.021	7.629	***

Significant value for covariance and intercepts indicates the rejection of null hypothesis and it shows the impact of measurement variables over the observed variables.

Correlations: (Group number 1 - Default model)

			Estimate
EA	<-->	EPC	-.288
EA	<-->	EB	.641
HA	<-->	EA	-.175
EPC	<-->	EB	.170
HA	<-->	EPC	.839
HA	<-->	EB	.327

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
EA	.712	.050	14.204	***	
EPC	.896	.060	15.036	***	
EB	.270	.041	6.524	***	
HA	.924	.051	17.987	***	
e1	.612	.031	19.808	***	
e2	.648	.032	20.512	***	
e3	.310	.020	15.265	***	
e4	1.301	.051	25.341	***	

	Estimate	S.E.	C.R.	P	Label
e5	.736	.033	22.168	***	
e6	.498	.024	20.595	***	
e7	.454	.024	18.547	***	
e8	.398	.022	18.398	***	
e9	1.600	.065	24.599	***	
e10	.501	.034	14.526	***	
e11	.482	.031	15.521	***	
e12	1.107	.046	24.029	***	
e13	.318	.024	13.456	***	
e14	.585	.028	20.750	***	
e15	1.368	.054	25.372	***	
e16	1.363	.054	25.360	***	
e17	.431	.027	16.038	***	

Factor Score Weights (Group number 1 - Default model)

	EPF1	HA4	HA3	HA2	HA1	EB1	EB2	EB3	EB4	EP1	EP2	EP3	EP4	EA1	EA2	EA3	EA4
EB	.026	.001	.000	.012	.024	.041	.160	.165	.026	.002	.002	.002	.001	.002	.050	.024	.026
EPC	.048	.002	-.002	.042	.085	.001	.003	.003	.001	.224	.208	.167	.113	-.001	-.032	-.016	-.017
EA	.109	-.002	.001	-.029	-.059	.016	.062	.064	.010	-.028	-.026	-.021	-.014	.011	.334	.161	.177
HA	.187	.009	-.006	.167	.342	.007	.029	.030	.005	.073	.068	.054	.037	-.002	-.058	-.028	-.031

The above table shows the factor score weightages of observed variables over the dependent variable. The table displayed here gives regression weights for predicting the unobserved variables from the observed variables. The table is organized with a row for each unobserved variable and a column for each observed variable.

MODEL FIT SUMMARY

CIF

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.597	.502	.602	.507	.601
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

The comparative fit index (CFI; Bentler, 1990) is given by McDonald, R.P. & Marsh, H.W. (1990). Choosing a multivariate model: Non-centrality and goodness of fit. *Psychological Bulletin*, 107, 247-255., where, and NCP are the discrepancy, the degrees of freedom and the non-centrality parameter estimate for the model being evaluated, and are the discrepancy, the degrees of freedom and the non-centrality parameter estimate for the baseline model. If the CFI is truncated to fall in the range from 0 to 1. CFI values close to 1 indicate a very good fit.

PARSIMONY-ADJUSTED MEASURES

PRATIO

The parsimony ratio (James, Mulaik & Brett, 1982; Mulaik, et al., 1989) expresses the number of constraints in the model being evaluated as a fraction of the number of constraints in the independence model.

Model	PRATIO	PNFI	PCFI
Default model	.809	.483	.486
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

RMSEA

Incorporates no penalty for model complexity and will tend to favour models with many parameters. In comparing two nested models, it will never favour the simpler model. Steiger and Lind (1980) suggested compensating for the effect of model complexity by dividing by the number of degrees of freedom for testing the model. Taking the square root of the resulting ratio gives the population "root mean

square error of approximation”, called RMS by Steiger and Lind, and RMSEA by Browne and Cudeck (1993).

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.199	.195	.204	.000
Independence model	.284	.280	.288	.000

”Practical experience has made us feel that the value of the RMSEA of about .05 or less would indicate a close fit of the model concerning the degrees of freedom. This figure is based on subjective judgment. It cannot be regarded as infallible or correct, but it is more reasonable than the requirement of exact fit with the RMSEA = 0.199. We are also of the opinion that a value of about 0.08 or less for the RMSEA would indicate a reasonable error of approximation and would not want to employ a model with a RMSEA greater than 0.1.” (Browne and Cudeck, 1993).

HOELTER

Hoelter’s (1983) critical N’ for a significance level of .05. The largest sample size for which one would accept at the .05 level, a model with this chi-square statistic and this many degrees of freedom. See Hoelter’s critical N.

Model	HOELTER .05	HOELTER .01
Default model	31	34
Independence model	15	17

FINDINGS

Significant probability for all the model fit indices indicates the acceptance of the model tested in this research study as described above. The model fit indices also recommend that the probability of obtaining the results as shown in the model in a different set of respondents and geography is very high so the relationship shown in the model is acceptable for further research. The null hypothesis claiming that there is no significant relationship between employee attitude, awareness, perception, behaviour towards work from home practices and their performance during work from home due to covid-19 pandemic is rejected. The hypothetical model is accepted on the positive relationship of dependency of employee performance on their attitude, awareness, perception and behaviour towards work from home.

CONCLUSION AND DISCUSSION

COVID-19 pandemic has been the major concern for corporates to adopt the concept ‘Work from Home’ (WFH) for routine business functions. Almost every industry from IT to academics where the functioning was possible without any particular physical setup has adopted the concept of work from. It is well understood that employees face challenges to execute their routine job roles while working from

home even though they are at their ease. Home atmosphere, disturbance of family members and lack of resources are some major obstacles that employees need to face while working from home. It is found in this research that there is a significant positive relationship between the attitude of the employee towards work from home practices adopted by companies and their impact on the quality and accuracy of work. Many employees have said that the home atmosphere is comfortable to increase the quality and accuracy of work. Most of the respondents are also of opinion that even if they are ready to work from home they do not like to work from home. The study found that willingness to work from home is entirely dependent on the presence of their children at home, comfortable space at home, a quiet environment at home and good internet connectivity.

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