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Research Article

The Impact of Work from Home on Productivity among Manufacturing Industry Workers During MCO

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Abstract

Thousands of people had significant health problems as the COVID-19 virus swept over the country which is increasing the fatality rate. The only way to stop the epidemic from spreading was for affected countries to halt all civil and economic operations for an extended period. As a result, some governments have imposed a global lockdown, which is still in effect. In this scenario, all business activity in all industries is halted. For numerous industries, the shutdown has a variety of ramifications. The aviation, hospitality, restaurant, and manufacturing industries, for example, have all shut down and will take years to recover. To tackle the current scenario, businesses are attempting to manage offices and administrative jobs using the "Work from Home" (WFH) paradigm. Businesses are attempting to withstand the storm.Furthermore, the factors that affects the productivity of work from home had been identified. Productivity has been largely determined by occupant self-reports. These are more subjective in nature and more prone to bias than satisfaction ratings, as respondents are asked to make an estimate based on their own emotions.

Keywords: Work from Home (WFH), Productivity, Manufacturing, Industry workers

1. Introduction

As the COVID-19 epidemic spread throughout the country, thousands of people developed severe health problems, increasing the death rate. The only option to prevent the pandemic's advance was for impacted countries to suspend all civil and economic activities for a prolonged time. This caused some governments to impose an absolute global lockdown, which is currently in effect.

All commercial activity across all sectors is suspended in this scenario. The shutdown has a range of consequences for many industries. For instance, the airline, hospitality, restaurant, and manufacturing industries have ceased operations and will require years to recover. Working from home not only benefits employees by eliminating their daily commutes it also increases effectiveness and leads to healthier lifestyles (Airtasker, 2019). It means in the less structured environment at home, and some workers may face dull environments and distractions seem more interesting, like doing laundry, watching TV, and playing games, so they will be less productive. Thus, that people performed dull tasks better in a controlled cubicle setting than they did during a less structured remote environment (Dutcher, 2012).

2. Work from Home During Pandemic

Several nations enacted varying WFH rules to limit viral transmission among coworkers during the crucial period of maintaining social distance during COVID-19. Businesses such as hospitality and retail appear to be feasible to operate from home unless the profession is one of management, scientific services, or finance (Shareena and Shahid, 2020).

A relation between a country's income level and the quality of jobs that can be done at home. Many workers are unable to get out of work because of COVID-19. Identifying which work cannot be done from home is helpful when governments attempt to limit social security contributions to those who need them the most. Similarly, the proportion of work that should be done at home is a critical feedback in forecasting the economy's success during this or future times of social distancing.

WFH arrangements have been recognized for their advantages and criticized for some weaknesses as used in replacement of or in addition to conventional office settings. Nevertheless, WFH improves performance, retains workers, and improves productivity and efficiency (Harker Martin and MacDonnell, 2012). Other advantages are including decreased chance of burnout (Moens et al., 2022), save cost and also balancing in between work and family matters (Gunawan et al., 2021).

Thus, WFH staff were concerned about worsening colleague relationships, reduced advancement chances, or disruptive job growth (Moens et al., 2022). Some employees can work in a monotonous atmosphere where distractions such as doing laundry, watching TV, and playing video games become more desirable, causing them to be less efficient (Dutcher, 2012).

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3. The Factors of Productivity WFH

Productivity in the workplace includes, the product which consequence, effect, that develops into the term positive, which means to create, and productivity are the capacity to make or be innovative. Productivity includes philosophical concepts, job definitions and organizational strategies (Wong et al. 2020). Productivity also includes a philosophical outlook on life and an emotional mindset that is constantly striving to improve the standard of living.

As a consequence, WFH would likely result in a range of personal and family well-being gains. Nonetheless, as stated in recent reports, WFH has a number of drawbacks, including insufficient office supplies, restricted access to the company's internal records, and poor interaction efficiency (Bloom et al., 2015). They infer that WFH effectiveness is increased by personal and family well-being as a benefit of WFH data which is collected from 1976 Hong Kong working people. Thus, WFH success though will be affected by environmental and resource restrictions.

3.1. Environment factor

Office and home workers shared IT equipment, were subject to the same work order flow from a central server, performed the same jobs, and were rewarded under the same pay system, which included an element of personal performance pay. Thus, the sole distinction between the two categories was their place of employment. This enables us to disentangle the influence of working from home from the effects of other practises that are frequently bundled together in efforts to enhance work-life balance, such as flexible work hours.

The work environment is an essential component of how workers do their jobs. A positive work environment can encourage employees and positively affect staff morale and performance. One of the essential telework aspects affecting telework outcomes is the compatibility of the work environment. While the work environment offers stability and enables individuals to perform at their best, it also can impact an employee's emotions. Teleworkers who work from home demonstrate that workers desire a work environment comparable to a traditional office, including privacy, proper lighting, and equipment.

3.2. Resource factor

Due to the fact that working from home is so reliant on technology and technical equipment, technological variables might have an effect on productivity. When electrical power is cut off, the internet network is down, and employees have problems exchanging work data and information, their productivity effected. Employee's productivity increases when they have access to the necessary technology, equipment, productivity tools, and technical and logistical backup.

An organization needs to give employees hardware and software equipment to maximize their WFH efficacy. For example, providing a cash allowance for the purchase of IT equipment or office supplies, lending IT equipment to employers while workers WFH, boosting IT software and network support, utilizing software that facilitates communication among colleagues, and improving access to internal network drives via secured online platforms are all examples.

3.3. Communication factor

The effectiveness of interaction between colleagues during this lockdown period revealed that, while working from home increased employee satisfaction, it had an adverse and significant influence on effective communication. While the basics of communication remain the same whether we communicate face to face or online, there are additional aspects to consider while communicating remotely.

Employees who work from home are concerned about the possibility of developing an informal communication network with their co-workers. When employees lack such contacts, they may feel disconnected from their colleagues and the company's aims and ideals.

Telework is described as a flexible work arrangement in which employees work remotely, away from the company's headquarters or manufacturing facilities, without direct touch with co-workers but with the capacity to connect via information and communication technology. According to some, telework can boost employee productivity and performance. Telework benefits new performance by facilitating knowledge exchange, cross-functional collaboration, and inter-organizational engagement. Telework also accelerates and enhances the quality of product development.

3.4. Conceptual model

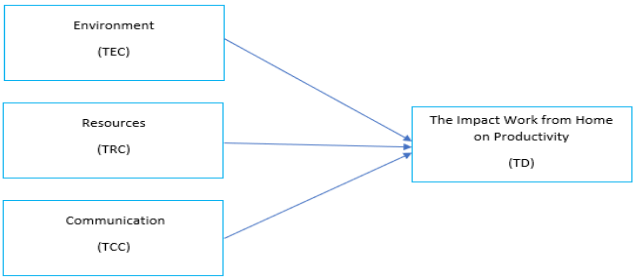

Fig. 1. Conceptual model of WFH on Productivity

From Figure 1 explain the impact of work from home on work productivity. The dependent variable in this study is impact of work from home on productivity (TD) and the independent variable consists of environment factor (TEC), resource factor (TRC) and communication factor (TCC).

4. The Methods and Results

4.1. Reliability testing for full survey

This reliability test was carried out on 104 respondents who completed the survey. For three constructs, there are only 15 questions. The purpose of this test is to see if the 15 questions are reliable or is there any inconsistencies between them.

Table 1
Reliability Statistics for Full Survey

Cronbach's Alpha	N of Items
.897	15

Based on the table 1 above shows the reliability statistics for full survey of the Cronbach's Alpha result which is accepted with the value 0.897. Thus, the targeted value is 0.7 and above.

4.2. Exploratory factor analysis (EFA)

The exploratory factor analysis was used to determine the degree of agreement or disagreement between the respondents' identified factors. It is advantageous for use in questionnaires because it can maximize the factor and reduce the set to a smaller size.

Table 2
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.853
Bartlett's Test of Sphericity	Approx. Chi-Square	903.667
	df	91
	Sig.	.000

The KMO values are greater than 0.5 which is 0.853 and the findings are relevant for this research. Additionally, it is a measure of sampling adequacy, indicating that the fundamental conditions that caused the variation in the variables were effectively analyzed. As a result, as demonstrated by Bartlett's examination of sphericity values of 0.00 or less than 0.05, factor analysis is allowed.

Table 3
Rotated Component Matrix

	Component			
	1	2	3	4
EC1			.817	
EC2			.791	
EC3			.735	
RC1		.839		
RC2		.835		
RC3		.708		
RC4		.525		
CC1	.647			
CC2	.799			
CC3	.795			
CC4	.858			
EP1				.777
EP2				.818
EP3				.727

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.[a]
a. Rotation converged in 5 iterations.

From the table 3, the researcher determines the conceptual model had been generate is accepted based on exploratory factor analysis (EFA). As the result show the value maintain in the right grouping.

Table 4
New Construct Group WFH on Productivity

No	Construct Factors	Items
1	Environment	Concentration on work Distracted with house chores. Private room for work
2	Resources	Office equipment Office software Task that must be done at office The limitation of internet connection
3	Communication	Loss of quick communication Work required direct interaction. Difficulties maintaining effective communication. Lead to miscommunication

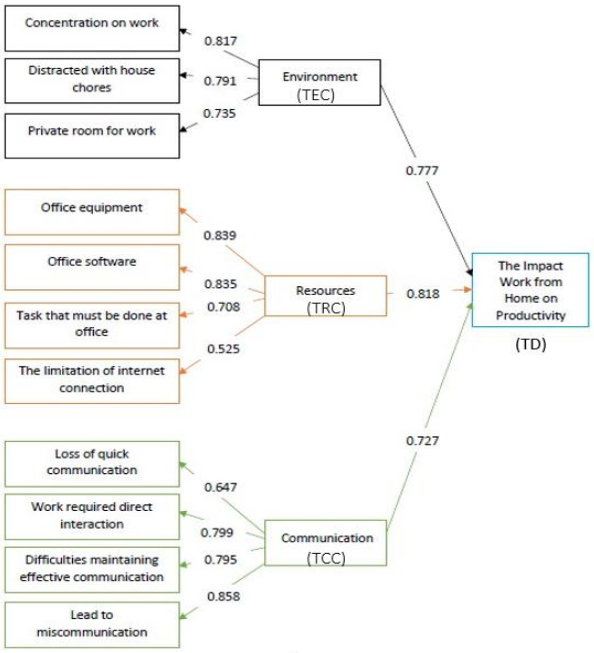

Fig. 2. New Conceptual Model for The Impact of Work from Home on Productivity among Industry Workers during MCO in Pasir Gudang

4.3. Correlation test

Table 5
Correlation

		TEC	TRC	TCC	TD
TEC	Pearson Correlation	1	.551**	.476**	.419**
	Sig. (2-tailed)		.000	.000	.000
	N	102	102	102	102
TRC	Pearson Correlation	.551**	1	.670**	.549**
	Sig. (2-tailed)	.000		.000	.000
	N	102	102	102	102
TCC	Pearson Correlation	.476**	.670**	1	.592**
	Sig. (2-tailed)	.000	.000		.000
	N	102	102	102	102
TD	Pearson Correlation	.419**	.549**	.592**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	102	102	102	102
**. Correlation is significant at the 0.01 level (2-tailed).					

From the table above show the correlation data for all the factors are positive. The p-value is significant which is less than 0.05.

4.4. Regression test

4.4.1. Simple linear regression

Table 6
Model Summary of Simple Linear Regression Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.624[a]	.390	.384	14.71589

a. Predictors: (Constant), TI
b. Dependent Variable: TD

Table 7
Coefficients for Simple Linear Regression Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	33.513	5.147		6.511	.000
	TI	.600	.075	.624	7.991	.000

a. Dependent Variable: TD

From the table 7, the R2 value is 0.624 which is acceptable. The Simple Linear Regression is y=33.513+0.6x

4.4.2. Multiple Linear Regression

Table 8
Model Summary of Multiple Linear Regression Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.633[a]	.401	.382	14.73163

a. Predictors: (Constant), TCC, TEC, TRC
b. Dependent Variable: TD

Table 9
Coefficients for Multiple Linear Regression Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	33.607	5.280		6.365	.000
	TEC	.094	.082	.109	1.147	.254
	TRC	.180	.088	.230	2.039	.044
	TCC	.318	.088	.386	3.613	.000

a. Dependent Variable: TD

From the table 8, the R^2 value is 0.633 which is acceptable. The Multiple Linear Regression is $y=33.607+0.094x_1+0.180x_2+0.318x_3$.

5. Conclusion

This chapter concluded the study and discussed the findings based on the objectives and the questionnaire from respondents. Thus, the findings found out manufacturing workers in Pasir Gudang area only have 3 factors and other 11 items of the subfactors. There are 3 and 13 significant elements from this study.
In addition, to conclude the main achievement of this study are three objective that carried out by the researcher in this research had been achieved. The researcher also made recommendations for the improvement of the impact work from home on productivity for further research.

5.1. Restatement of the objective

Objective 1: To identify the factors for work from home on productivity. Three factors had been identified that affect the work from home on productivity by using the statistical analysis.

Objective 2: To identify the relationship of work from home on productivity. The researcher observes the relationship between work from home on productivity and the factors is significant based on the correlation and regression results.

Objective 3: To generate the model diagram of work from home on productivity and the factors. The researcher determines the conceptual model had been generate is accepted based on exploratory factor analysis (EFA).

5.2. Recommendation for future research

The recommendation for future research, there are more variables should be investigated in future study about the impact of work from home on productivity which should be explored. Productivity has been largely determined by occupant self-reports. These are more subjective in nature and more prone to bias than satisfaction ratings, as respondents are asked to make an estimate based on their own emotions. Hence, certain studies have used more objective productivity indicators, such as increased task completion speed and accuracy, and even the rate of new idea generation, to analyses the effectiveness on productivity outcomes.

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