

THE IMPACT OF WORKING FROM HOME ON EMPLOYEES' PRODUCTIVITY IN HIGHER EDUCATION ORGANISATION

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Abstract: The present study focuses on evaluating the relationships between job demands, resources in working from home arrangements and employees' productivity in a higher education organization during the COVID-19 crisis in Malaysia. The multiple regression technique was utilized to determine the effect of work-life conflict, social isolation, distracting environment, and job autonomy on the employees' productivity using the Statistical Package for the Social Science version 18 (SPSS 18). The data was collected through an online survey that yielded 120 usable questionnaires. The results showed that job autonomy positively and significantly influences employees' productivity during WFH in the COVID-19 pandemic. In contrast, the distracting environment negatively and significantly influences employees' productivity during WFH. The results suggest that the higher education organization should pay more attention to strengthen the job autonomy as the higher job autonomy given to employees will increase the employees' productivity while working from home. It means that the workplace environment has to be improved when applying WFH, as a distracting environment will reduce the employees' productivity while working from home. In addition, other job demand factors such as work-life conflict and social isolation were found to influence employees' productivity insignificantly.

Keywords: COVID-19, Work from Home (WFH), distracting environment, job autonomy, employees' productivity.

Abbreviations: Work From Home (WFH), Job Demands-Resources theory (JD-R), Work-Life Conflict (WLC).

Introduction

Around March 2020, Coronavirus (COVID-19) was declared by the World Health Organisation (WHO) as a pandemic. This virus was first spread and recorded in China, especially in Wuhan, in December 2019. The huge spread of the COVID-19 virus caused a shake in China's economy, where Wuhan was considered a dead city at that particular time. Several industries, around the world faced a massive economic decline, such as the aviation and the tourism industries, according to Rita, P., *et al.* (2022); Wu, X., & Blake, A. (2023). This economic decline also affected the education sector; for instance, in Malaysia, according to a study conducted by University Tun Abdul Razak former Deputy Vice-Chancellor Professor Geoffrey Williams

found that 55% of Malaysian private higher education institutions incurred losses. Moreover, during the pandemic, employees tried to reduce unimportant activities outside the home (Agus Purwanto *et al.*, 2020). In order to face and overcome this crisis, many countries applied workload management in industrial and service activities such as Work-From-Home (WFH) whenever possible. The education sector was not an exception; educational institutions were encouraged to perform online learning policies. Previous studies indicated that the technology usage rate in the education industry increased by 12.5% and will continue to rise (Sirait & Murdianingrum, 2020). Moreover, according to the International Association of Universities

(IAU), 67% of higher education organisations all over the world replaced the face-to-face classroom with online teaching to break the COVID-19 chain (Afrianty *et al.*, 2021).

It is seen that COVID-19 has changed how people work and their behaviour at work, especially when they have to Work from Home (WFH). Vast numbers of people were staying in their homes in order to avoid falling ill and because of shelter-in-place policies. A large number of people around the world have become jobless because businesses and organisations have shut down or gone bankrupt. In April 2020, the Centre for Monitoring the Indian Economy (CMIE) weekly report reported that 27 million people 20 and 30 years of age lost their jobs (Farooq & Sultana, 2021). The same was seen in Malaysia, according to Malaysia's Department of Statistics (DOS), the official unemployment figure increased from 3.3% in 2019 to 3.9% in March 2020, and that percentage became 5.0% in April 2020.

With the wide spread of the pandemic around the world and because of its adverse effect on the industries and services sector after the international lockdown, there was an urgent need for alternative ways to conduct job analysis at the workplace to ensure practicality to suit with the pandemic conditions and beyond. It can be widely seen that Work From Home (WFH) was one of those alternatives deemed suitable to be implemented in the education sector as there is an increasing trend of digitalized era in the online teaching and learning. Educational institutions have to innovate and offer more MOOC courses, micro-credential courses and hybrid learning in order to shape the future workforce in the Industrial Revolution 4.0 (IR 4.0) to the IR5.0.

Work From Home (WFH) can be defined as the working day that is conducted at the home environment. Also, various terms have similar meanings to WFH, such as Telecommuting, Remote Work, and Teleworking. Before COVID-19, WFH was widely used in Western countries and mostly in large companies (Afrianty, Artatanaya, & Burgess, 2021). About 7.6 million employees in the United States are

working from home which, equals about 4.8% of the total number of employees in the US. The same situation can be seen in the UK, where about 1.27 million employees are telecommuters and those stand for about 4.6% of the total United Kingdom workforce. On the other hand, the situation is not similar in Asian countries as in developing countries with major differences in terms of social and cultural conditions around the employees. In Japan, for example, WFH is not a desirable option to conduct the work for many reasons, such as homes' living cost is high in urban areas around Tokyo and other cities. Also, homes are small (house condition) and inconvenient for workspace use.

The situation in Malaysia before COVID-19 was similar to Japan's situation. Although the Work From Home concept was promoted in 1990, it was unpopular and not preferred by employers. According to Datuk Shamsuddin Bardan, the Malaysian Employers Federation executive director, WFH was not a part of Malaysian work culture. However, during the pandemic, the culture changed to suit the time (Meikeng, 2021). The resistance to this approach over the past years was because of the belief that the employees have to physically exist in the workplace to manage the job (Vyas & Butakhieo, 2021). But the COVID-19 crisis has forced a WFH trial run in Asian countries including Malaysia. According to a recent survey by Ipsos (Market research firm), 65% of Malaysians say that they are working from home in comparison with the global average which is equal to 52%. Although, previous studies revealed that WFH has many advantages, such as reducing carbon emissions, commute times to workplace, and increased work flexibility (Sirait & Murdianingrum, 2020; Afrianty, *et al.*, 2021; Vyas & Butakhieo, 2021). Also, WFH has been connected to programmes that encourage work-life balance (WLB) (Afrianty, *et al.*, 2021). But at the same time, much previous research showed some drawbacks of WFH in this COVID-19 crisis, such as social isolation, loneliness and the long period needed to complete the task because of the environment's distractions at home's environment (Galanti *et al.*, 2021).

Therefore, as COVID-19 pandemic forced a WFH trial run in the country, and recent studies showed that COVID-19 will be an endemic and WFH will be the new norm, this paper aims to evaluate the Malaysian employees' perception in the higher education sector about WFH after the large spread of it as this sector is one of the most critical sectors in the country and a productivity assessment of WFH policy has not been analysed yet for this particular sector (Sirait & Murdianingrum, 2020). Thus, the study will examine the factors that affect the productivity of WFH policies in response to COVID-19, it will focus on WFH in Terengganu, Malaysia, in order to improve the employers' understanding on how to assist employees that WFH after the pandemic as WFH is considered family-friendly work arrangement and it is usually associated with work-life balance programmes. This study follows the job demand-resources (JD-R) theory as previous studies' results show that some factors can ease the WFH while other factors represent a constraint to apply this arrangement (Galanti *et al.*, 2021). This study is significant for two reasons: First, there is still a dearth of research on the effects of Work-From-Home policies on employees' productivity in Malaysian and Asian contexts (Vyas & Butakhieo, 2021). Second, the majority of research on WFH following the pandemic - such as Farooq *et al.* (2021) - apply the adaptation theory to explain how organisations dealt with the transition. However, it is very noticeable that the challenges and facilitations to apply this arrangement are still under study, especially for the education sector (Galanti *et al.*, 2021).

Research Objectives

The main issue addressed in the present study is the sudden and widespread adoption of WFH arrangements in higher education organisations as a result of the COVID-19 pandemic and the associated challenges and impacts on employees' productivity. The study's context highlights the unique circumstances found by COVID-19, where WFH became a demand rather than a choice and how it impacted the employees' productivity and identify the key

factors that influenced their experience during this pandemic. Therefore, the present paper seeks to achieve the main objective, which is to identify the impact of working from home (WFH) on employees' productivity in higher education organisation. In the present study, four variables can be divided and represented by WFH. These variables were selected after reviewing the available literature and selecting the most critical features of WFH during the COVID-19 pandemic. The first objective is to determine whether work-life conflict affects the employees' productivity while working from home. Next, is to determine whether social isolation affects the employees' productivity while working from home, Then to determine whether a distracting environment affects the employees' productivity while working from home, and Finally, to determine whether job autonomy affects the employees' productivity while working from home.

Job-Demands-Resources Theory (JD-R)

The job demands-resources model is a well-known theoretical framework of occupational health psychology (Sarwar *et al.*, 2021). According to this model, each job has two aspects, demands and resources, which influence the outcomes and the well-being of the employees. This model suggests that job demands deplete the individual's resources which results in negative outcomes as the employees will experience fatigue, energy loss, and it may cause health impairment. On the other hand, job resources represent the physical, psychological and organizational factors that reduce job demands and function as motivations for work development and personal growth. In addition, the JD-R model includes the personal resources as it refers to employees' sense of their capabilities to influence and control their environment, which resulted in encouraging optimal performance and reduced stress (Galanti *et al.*, 2021). The present study considers some features of WFH as the job demands, the work-life conflict as it became very popular especially with the presence of children involved in distance learning, social isolation as one of the

main features of the COVID-19 pandemic due to the lack or decrease of social interaction, the difficulties of having a suitable workplace in the home to handle the job's tasks (distracting environment). In this study, job autonomy represents job resources.

Work from Home

During the COVID-19 pandemic WFH has become the preferred alternative way to work and to reduce the spread of this infection. WFH has been known since a long time as it has been firstly mentioned by Nilles (1988), however it has been known since 1973 with different names such as telework and telecommuting (Vyas & Butakhieo, 2021). Before COVID-19 crisis, WFH was used interchangeably with many other terms such as remote work, e-working, telecommuting, and teleworking. Remote working refers to the process that employees complete their work in another location than the traditional office, and that also refers to virtual working and telecommuting where the physical exist in the workplace is not necessary. WFH refers to the same previous concepts that the physical presence is not required to complete the work but also indicate that the work will be done in home environment using technology to perform the work. WFH resulted in a huge increase in technology usage. According to Sirait and Murdianingrum (2020), there is a 12.5% increase in technology use in the education sector alone and this percentage will continue in raising (Sirait & Murdianingrum, 2020). In addition, 67% of the higher education institutions around the world have shifted to online teaching instead of physical classrooms as mentioned by the International Association Universities (IAU). Recent study that has been conducted in the US revealed that at the height of the COVID-19 pandemic, 37% of jobs could be completed from home (Dingel & Neiman, 2020). WFH includes jobs that do not require physical exist in the office such as financial services, business management, legal services and insurance services. Other industries, such as

hospitality and healthcare cannot be done from home. Before COVID-19, WFH was considered a win-win strategy for the employee and the employer. Numerous advantages can be gained from WFH, such as increasing work flexibility, reduced absenteeism and turnover, increased job satisfaction, and improved productivity.

Productivity

Over the years, productivity has always been the major concern of organisations. Improving employees' productivity offers two levels of advantages, the first is at the employee level and the second is at the organisation level. Productivity or the performance outcomes, in other words it is the individual's effectiveness and efficiency in completing workplace responsibilities and tasks (Afrianty, Artatanaya, & Burgess, 2021). In literature, there are various terms that refer to productivity, such as employee performance, organisational performance, and corporate performance (Farooq & Sultana, 2021). Previous studies show that performance measures relate to limited effective measures. In addition, the measurements were developed in an eclectic manner (Wanyama & Mutsotso, 2010). According to Wanyama and Mutsotso, productivity, which is the outcome of performance counts on the amount of time the employee is physically at the job as well the degree that he is mentally efficiently functioning while he is at the job (Wanyama & Mutsotso, 2010). The COVID-19 outbreak changed how the organisations think about WFH employees. According to a survey conducted by IBM, 87% of the employees felt their productivity improved while working from home (Afrianty, et al., 2021). On the other hand, other studies show that WFH has a negative impact on the productivity (Farooq & Sultana, 2021). However, researchers referred that some factors have a critical role in influencing employees' productivity while engaging in WFH. Those factors include individual factors such as digital capability and organisational factors such as management support and training.

Work-Life Conflict (WLC)

The boundaries between work and non-work life represent a point of possible attention in normal times. But the COVID-19 phase was anything but normal. When the lockdown starts in order to break the infection's chain, the sudden shift in work-life boundaries' nature creates a potential shock to the role conflict (Schieman *et al.* 2021). Work-life conflict (WLC) is defined as the extension of work-family conflict that shows the real work role may interfere with other personal life roles and attention such as time for family, exercise, or even having time for self-care and recovery. Previous researches, most of the time consider (WLC) as a gender-dependent phenomenon that is because the responsibility of housework and caregiving usually located on women's shoulders (Galanti *et al.*, 2021). The COVID-19 pandemic forced people to stay at home which destroyed the segregation between private and work-life regardless of gender or the age. During the pandemic, where employee WFH, the presence of the children (especially at school or preschool aged) and the disruption of caregiving and educating services in addition to the need of contributing to housework highly affected remote workers and impose greater work-life conflict (Galanti *et al.*, 2021). Consequently, higher education organisations became highly stressful work environment, academic staff need to ensure the quality of the teaching process, have high-quality publications as well as the need to attract funds for their research. For non-academic staff, there was an increased pressure in handling the administrative works of both the students and the staff. This factors make WLC an important factor in employees' productivity. In line with previous studies, we believe that WLC has a negative effect on employees' productivity and that has been shown in this formulated hypothesis.

Social Isolation

Social isolation is known as the feeling that the individual is cut off from others (Stein & Riedel-Heller, 2023). Previous studies has shown that the quality of social contacts is one of the predictors

that influence the employee's productivity on WFH (Toscano & Zappalà, 2020). Without good social contact, it will cause stress which may have negative effect on the individual well-being which in turn will affect employee performance (Russo *et al.*, 2021). According to Galanti *et al.* (2021), social isolation is one of the cons of remote work. COVID-19 pandemic has forced people to stay at home thus, increased the social confinement and increased loneliness level and that may associate with a decline in work satisfaction and performance (Galanti *et al.*, 2021). The lock-down and SOP arrangements increased the level of loneliness because people feel like they are in prison (Wang *et al.*, 2021). Another study showed that communication by technology means during WFH arrangement is only task-focused and does not meet and fulfil social communication needs (Wang *et al.*, 2021). In line with the mentioned studies, we believe that social isolation during COVID-19 pandemic acts as a job demand that has a role in influencing employees' productivity while working from home.

Distraction of Environment

Previous research found that perceived control affects work-life quality, including lower stress, improved work-life balance and increased overall job satisfaction, while distractions during work lead to dissatisfaction (Irawanto, Novianti, & Roz, 2021). Perceived control is a crucial determinant of job happiness and perceived performance in the workplace (Lee & Brand, 2005). Several reports have sought to pinpoint the characteristics that contribute to a positive sense of personal control. During the pandemic, employees were sharing their workplace with their housemates and families, partners and school-aged children, who were engaged in online learning. Those who live in houses that are not well-designed to host many people involved in learning and working from home have several distractions at home (Galanti *et al.*, 2021). Studies pointed out that positive WFH experiences are correlated with the quality of the workspace. Employees with good control of the workspace environment, such as light and

being sufficiently separated from living space, have recorded higher job performance and productivity. When this control and separation is unavailable, employees may face additional job demands. Thus, we believe that environmental distractions have an effect on employees' productivity in a WFH setting.

Job Autonomy

Autonomy is considered a key motivator. Employees gain more enjoyment and satisfaction at their work when they are provided with a high level of freedom in choosing and determining their own goals and methods to achieve it (Rietveld *et al.*, 2021). Studies have repeatedly presented positive relations between autonomy and productivity because when the employees have high independence on the job, he perceives the results as depending on his efforts. Also, he feels personally responsible for its success or failure. Job autonomy is the extent of the independence and discretion of the employee has. Several researchers found that there is a positive correlation between remote working and job autonomy (Wang, *et al.*, 2020; Rietveld *et al.*, 2021). However, others suggest that telework forced restrictions on workers' autonomy such as what (Sewell & Taskin, 2015) mentioned that remote workers may experience intense pressure to participate virtually as they are scared to be overlooked when work is divided. In addition, the study mentioned that employees were pressured to reply to online messages immediately because they fear negative judgments if they are not quick to respond. During the pandemic, employees were forced to WFH in order to ensure the sustainability; thus, we hypothesise that job autonomy affects employees' productivity in a WFH setting.

Hypotheses Development

In order to examine the relationship between the job demands, job resources and employees' productivity during COVID-19 pandemic, several hypotheses were proposed.

According to previous studies, work-life conflict is considered a stress that has a negative impact on many of the work-related outcomes such as organisational commitment, job satisfaction, burnout and poor job performance. Thus, we hypothesise that:

H₁ – Work-family conflict has an effect on employee's WFH productivity .

A previous study conducted by Golden *et al.* (2008) found that social isolation (professional isolation) had a negative impact on employees' job performance, as assessed by supervisors. In addition, social isolation caused stress that led to decrease job productivity among workers. As the COVID-19 pandemic imposed more social restrictions, we hypothesise that:

H₂ – Social isolation has an effect on employees' WFH productivity .

According to research by Carillo *et al.* (2020), employees' opinions of their workplace and working conditions have an impact on how well they perform on the job. Higher levels of work performance and job satisfaction have been linked in particular to good physical working circumstances such as distraction-free work environments and adequate workspace. Therefore, we hypothesise that:

H₃ – A distracting work environment has an effect on employees' WFH productivity .

The JD-R theory argues that both job and personal resources have an effect on employees' well-being and productivity. Job autonomy refers to the level of independence and discretion allowed while handling professional duties. According to previous literature, job autonomy is considered as one of the most important resources for WFH employees. In addition, it has a positive impact on remote workers' satisfaction and engagement while it has a negative impact on stress. The present study suggests that the positive impact of job autonomy can be seen during the WFH arrangement due to COVID-19 pandemic. Thus, we hypothesise that:

H₄ – Job autonomy has an effect on employees' WFH productivity.

The Research Framework Model

In the Job Demands-Resources (JD-R) theory, we know that both the demands and resources have an effect on the employees' productivity in the WFH arrangement. To be more specific, we discussed both factors that could affect employee productivity even by facilitating the work or introducing more challenges. For example, WLC is considered one of the job

demands that challenge employees to achieve high productivity. The same goes to the social isolation and distracting environment that affect productivity in a negative manner. On the other hand, the present study considered job autonomy as a job resource that has an effect on employees' productivity in a positive way. Figure 1 illustrates the research framework of this study.

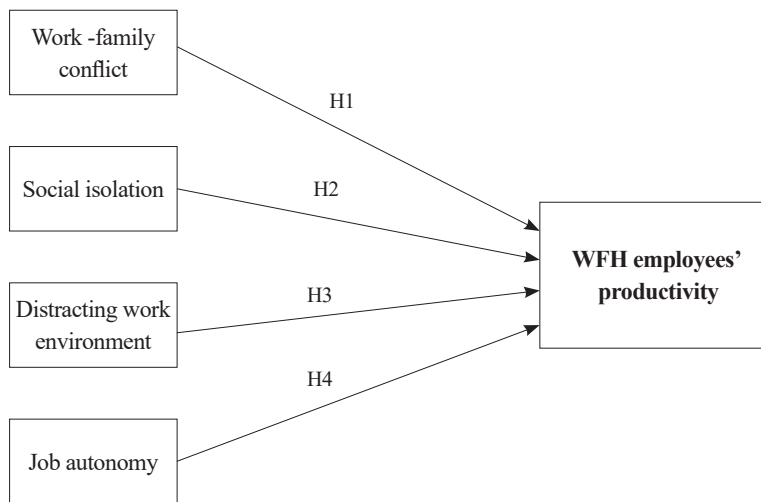


Figure 1: Research framework model

Research Methodology

The present study followed the quantitative approach in order to statistically evaluate and analyse the relationship between different variables using hypothesis testing. The data were collected using a self-reported questionnaire distributed and administered online From 21 April to 28 April 2022 via a Google Form. Collecting the data online had many advantages including, cost efficiency, quick, and easy survey completion. On the other hand, one of its limitations is that people usually discard emails from unknown persons. The sample size for this study is (N = 120) and it was calculated by referring to Green's 1991 formula. The questionnaire has a filter question to ensure that all the participants had WFH arrangements at the height of the COVID-19 crisis and those

who did not have this experience were excluded from the study. All the respondents were voluntarily participating without any reward, and they were assured about the confidentiality of their answers. Ethics approval was obtained before starting the data collection process from the University Malaysia Terengganu (UMT).

This study took place at Universiti Malaysia Terengganu (UMT) and this choice was based on several important reasons. First, UMT is one of the public universities in Malaysia and is situated on the East Coast region. The state of Terengganu is the home to a small number of higher education institutions which are quite a distance from the big cities in Malaysia such as Kuala Lumpur, Putrajaya, Johor Bahru and Penang. Previously, it was not that common and

acceptable to opt for WFH or flexible working arrangements since Terengganu has quite good traffic controls compared to other states in Malaysia. However, the COVID-19 pandemic changed this view for all higher institutions including UMT and their ability to continue to operate. Furthermore, Work-life conflict does not only come from travelling to and from work, but also from other aspects of life and family demands. Second, UMT is a public university with many different faculties and fields of studies such as Fishery, Agriculture, Economy and Social Sciences, Maritime, Information Systems, Engineering, Sciences, and others, which might be quite similar to represent the situation of other universities in Malaysia. Also, UMT has been selected because of its access to research.

A simple random sampling technique was used for this study in order to ensure the result's generalisation among the targeted population and reduce the bias. After receiving the employees' list from the registrar's office in the university and developing the survey form, the validation process of the questionnaire was conducted. The first stage involved obtaining the content validity of the questionnaire. Content's validity has been cross-checked with three lecturers with doctorate degrees in this study's area of research.

A pilot study was applied in the second stage of distributing a questionnaire to 30 respondents, as this is the suggested sample size for a pilot study by. The purpose of the pilot study is to ensure the reliability of each measurement, while the construct validity and reliability analysis can be seen in Table 1 of the results section.

Then, a total of 500 online questionnaires have been sent and distributed to different departments in the university after getting permission and assistance from officers in UMT Registrar Office. A total of 125 questionnaires were completed and returned in April 2022, which five questionnaires were discarded as they were inappropriate for analysis purposes.

Measurements

As it is noticed and based on the theory used to conduct this research which is job JD-R the research is divided into two components; job demands that relate to WFH and it is measured by three different scales; first scale measured the work-family conflict. This scale consists of four questions that adopted from Netemeyer *et al.* (1996) and the items of this scale describe the overlap between the family life and the work for WFH employees. Social isolation represents the second scale consists of four items and those items were adopted from Golden *et al.* (2008) and it measures the sense of lonely, isolation, and low support that faced the employees during WFH (Stein & Riedel-Heller, 2023). Distracting environment represents the third scale of the job demands; this scale consists of three items which is designed to measure the distraction level experienced by employees during WFH. This scale was adopted by Lee and Brand (2005).

The second component is the job resources. Job resources refer to the factors that facilitate the work. Job autonomy represents the job resources that relate to WFH. This scale was assessed using four items that were adopted from Jamal *et al.* (2021). Those items are designed to measure the autonomy of work-related decisions and in scheduling work tasks (Jamal *et al.*, 2021).

WFH employees' productivity was measured in the survey using a scale consist of three items. The items were adopted from Belanger *et al.* (1999). The measurements' items require the respondents to compare the current situation in the WFH arrangement with their previous experience working in the office. For instance, one of the items stated, "I feel like I am more productive while working from home". This scale is usually used in remote working studies. All the scales were adopted from high-quality studies. Five-point Likert scale was used with all the measures in this study where 1 = strongly disagree 2 = disagree, 3 = neutral 4 = agree and 5 = strongly agree. All items used to measure the constructs have been specified in

the measurement table in the Appendix 1. Socio-demographic data in the first sections include information such as gender, age, number of children and the number of school-aged children as we believe these variables have an effect on the relationship under the present study.

Results

The total sample size for this study is 120 respondents, which represent a 25% response rate of the 500 distributed questionnaires. It consists of 53.3% women and 46.7% men. Academic staff represented 64.2% of the total number of respondents and non-academic staff accounted for 35.8%. About 55.8% of the respondents were aged between 30 and 40 years (minimum 20, maximum 65). Approximately

80% of the total respondents reported that they have at least one child and 75% of them having at least one child in school.

Before starting the data analysis, the reliability and validity of the scales were evaluated. After ensuring that all the measures are valid and dependable, descriptive and multiple regression analysis among the study's variables were applied using the Statistical Package for Social Science (SPSS-18). Pilot study of 30 respondents were used in evaluating the validity and reliability of the scales. Cronbach Alpha was used to measure the reliability and a value of more than 0.7 was obtained for all the measurements which is the acceptable value. Reliability test results for the present study are shown in Table 1 and they are highly dependable:

Table 1: Cronbach Alpha

Variables	Cronbach Alpha
Work-life conflict	0.902
Social isolation	0.818
Distracting environment	0.884
Job autonomy	0.851
Productivity	0.905
All items reliability	0.816

Source: Processed data; (N = 30)

In order to evaluate the construct's validity of the instrument, Person's correlation analysis was conducted. According to a previous study, r values in Person's correlations vary from 0 to 1 where " r " from 0 - 0.25 means very low correlation, " r " from 0.26 to 0.49 means low correlation, " r " = 0.50 – 0.69 shows moderate correlation, " r " from 0.7 to 0.89 indicates a strong correlation and " r " from 0.9 to 1.0 shows a very strong correlation (de Barros Ahrens, da Silva Lirani, & de Francisco, 2020).

A Person's correlation analysis based on items was conducted as previous studies suggest that it is better to assess the validity of each item as it provides more accurate results. The items in the questionnaire were distributed based on the area which they belong to as shown in Table 2. The results showed that none of the items had a very low correlation, and the results are shown in Table 3. Appendix 1 shows the list of questions and items which have been adopted from several sources.

Table 2: Items distribution based on the variable they related to

Items	Variable
1, 2, 3, 4	Work-life conflict
5, 6, 7, 8	Social isolation
9, 10, 11	Distracting environment
12, 13, 14, 15	Job autonomy
16, 17, 18	Productivity

Table 3: Person's correlations

Items	R value
1	0.581
2	0.414
3	0.644
4	0.572
5	0.267
6	0.271
7	0.364
8	0.471
9	0.682
10	0.766
11	0.722
12	0.451
13	0.467
14	0.344
15	0.325
16	0.444
17	0.522
18	0.481

Source: Processed data; (N = 30)

Therefore, all of the questions are valid, and even those items with low correlation values are significantly correlated.

There are many types of analysis frequently used to examine and analyze the relationship between the variables such as PLS, PCR, Regression Analysis and correlations. Usually, Partial Least Square Analysis (PLS) is used when we deal with a high-dimensional dataset related to the mediator and moderator analysis or when there is a multicollinearity issues between the variables as PLS is more flexible to provide a more robust model and reduce the multicollinearity. However, this study was only involved direct relations between

multiple independent variables towards one dependent variable, no higher order construct, low order construct or even mediator and moderator analysis. Therefore, it is sufficiently seen to be assessed using Multiple Regression Analysis in SPSS as it is the most appropriate analysis for this study. Multiple regression analysis was conducted in order to examine the relation between WFH productivity and four predictors or constructs. First, the collinearity for the constructs were checked by validating VIF values that need to be less than five. In the proposed model, all the constructs' VIF were less than five as shown in Table 4. Thus, it is noticed that there is no collinearity issue between the constructs and then the independent variables are not correlated.

Table 4: Collinearity statistics

	VIF
Work-life conflict	1.484
Social isolation	1.435
Distracting environment	1.638
Job autonomy	1.338

Dependent variable: Productivity; (N = 120)

The normality of the data was evaluated using a residual histogram. The residual histogram has a symmetric bell shape as shown

in Figure 2 and the linearity was also ensured using the p-p plot of regression standardized residual and the data was distributed along the line.

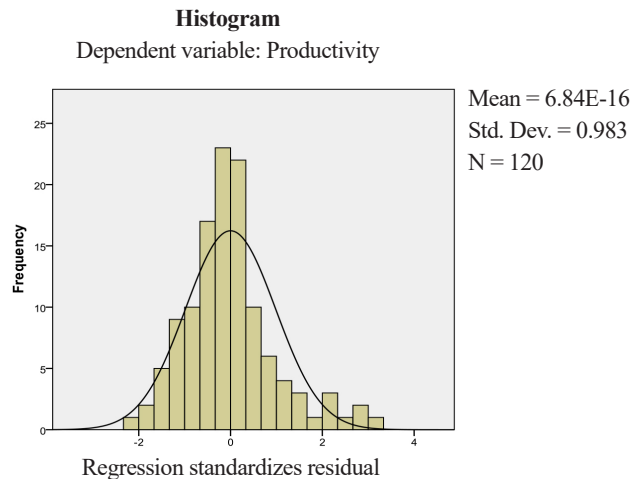


Figure 2: Residual histogram

Then, a multiple regression analysis was calculated to predict the employees' productivity during WFH in COVID-19 based on the predictors; work-life conflict, social isolation, distracting environment and job autonomy.

Persons' correlation (r) analysis indicated that there was a weak relationship between work-life conflict, social isolation and productivity. While there is a moderate relationship between a distracting environment, job autonomy and productivity as shown in Table 5.

Table 5: Person's correlations

	Work-Life Conflict	Social Isolation	Distracting Environment	Job Autonomy
Work-life conflict				
Social isolation	.388**			
Distracting environment	.531**	.483**		
Job autonomy	-.381**	-.418**	-.405**	
Productivity	-.328**	-.364**	-.496**	.629**

** $p < 0.01$ (2-tailed); (N = 120)

A significant regression equation was found as $p = 0.000$ for ANOVA test with an $F = 0.466$. The analysis results showed that the job demands and job resources affect respectively, negatively and positively WFH productivity. Both, work-life conflict ($B = -0.040$, $p > 0.05$) and social isolation ($B = -0.025$, $p > 0.05$)

were not significantly associated to employees' WFH productivity. A distracting environment was significantly and negatively associated with employees' productivity during WFH ($B = -0.356$, $p < 0.01$). Job resources represented in job autonomy ($B = 0.451$, $p < 0.01$) were significantly and positively associated with

employees' productivity during WFH. The regression analysis's results are shown in Table 6 and a summary for the hypothesis results are shown in Table 7.

Table 6: Multiple regression analysis

Model	Unstandardised Coefficients		Beta	Standardised Coefficients	
	B	Std. Error		t	Sig.
1 (Constant)	2.446	.614		3.984	.000
Work-life conflict	-.040	.102	-.032	-.390	.697
Social isolation	-.025	.108	-.019	-.234	.815
Distracting Environment	-.356	.105	-.296	-3.395	.001
Job autonomy	.451	.069	.513	6.516	.000

a. Dependent variable: Productivity; (N = 120)

Table 7: Summary of hypothesis results

Regression	Result	Remark
Work-life conflict	0.697	Not supported (Not significant)
Social isolation	0.815	Not supported (Not significant)
Distracting environment	0.001	Supported
Job autonomy	0.000	Supported

Discussions

This study contributes to a better understanding about the employees' productivity in higher education organisation when WFH due to COVID-19. The present study can be considered among the first to examine the productivity of higher education organisation employees in Malaysia that were on WFH during the COVID-19 pandemic (Sirait & Murdianingrum, 2020b). The study addressed this issue by implementing the job demands-resources (JD-R) theory as the framework and by examining the effect of some job demands and resources during WFH on the outcomes of WFH. Job demands in the present study were represents in WLC, social isolation and distracting environment. Job autonomy represents the job resources for this study. As reported by the Institute of Labour Market Information and Analysis (ILMIA) that 80% of the jobs in Malaysia were conducted online during COVID-19 and higher education organisations were not an exception. WFH arrangements was applied in a challenging time and employees had to adapt quickly; thus,

determining the obstacles and enablers of WFH will contribute to achieving better outcomes, especially that many studies and statistics showed that COVID-19 will not disappear, but it will shift from a pandemic to an endemic and WFH will become the new norm. In addition, using the JD-R model will also have a practical implication as it allows the organisation to focus on risks' prevention strategies by reducing the job demands and increasing the benefits by focusing on-the-job resources in order to ensure work's sustainability and employees' productivity while WFH even for COVID-19 crisis or any other unplanned situation (Bakker & Demerouti, 2017). The results of the present study had partially supported the assumptions developed by following the theoretical framework of JD-R model.

Work-Life Conflict was associated with negative WFH outcomes that go in the same direction with what we have suggested as it's a job demand. In addition, the respondents'

answers for the open-ended question in the questionnaire support the hypothesis for example, one of the answers said that “working from home is suitable if there are no small kids at home, with many kids at home at the same time, WFH is not suitable especially during COVID-19 where the kids also need attention especially with their homework”. However, the analysis result was not significant. Hence, H1 (Work-family conflict has an effect on employee productivity during WFH) was not supported. This result doesn't align with previous studies which stated that the WLC had a significant negative impact on employee's productivity (Galanti *et al.*, 2021; Sarwar *et al.*, 2021). A different result is expected in this research paper as the previous studies explored the relationship between WLC and WFH productivity from a gender perspective.

Social isolation was also negatively associated with WFH productivity and that goes in the same line with our assumption as it is a job demand. Increasing the communication opportunities can help decrease the social isolation. However, the use of technology to exchange the information and doing the work is not a replacement for the face-to-face interaction which is considered the gold standard for communication. During the pandemic the use of technology was task-focused and did not fulfil the psychological needs of the employees (Wang *et al.*, 2021), and that was seen through the respondents' answers for the open-ended questions in the questionnaire as participant A said, “Work From Home is more comfortable but it is extremely boring and causes some kind of depression”. But the result was not significant. Thus, H2 (Social isolation has an effect on employees' productivity during WFH) was not supported. This result does not align with previous study findings which found that social isolation is significantly negatively associated with productivity (Toscano & Zappalà, 2020). The different results from the present study can be due to the different times of pandemic as previous studies were conducted during the COVID-19 crisis.

The distracting environment was negatively and significantly associated with WFH productivity. This result is in line with the proposed model as it is part of the job demands. H3 (Distracting the work environment has an effect on employees' productivity during WFH) was supported and that can be back to the reality that during WFH in COVID-19 employees shared the working place with their families or housemates. This workplace sharing can impose many difficulties especially if the house is not well designed to carry many people engaging in distance learning or working from home. Several studies indicate that distracting environment such as visual or auditory distraction has an effect on the employee's productivity (Khoshbakht, Rasheed, & Baird, 2021).

Job autonomy had a positive and significant effect on employee productivity during WFH in COVID-19. This positive effect is in line with the study's model as it represents the job resources. Therefore, H4 (Job autonomy has an effect on employees' productivity during WFH) was supported. Providing employees with job autonomy may help sustain WFH productivity even after the COVID-19 pandemic and help attract the desired outcomes for organisations and employees. This result is in line with previous study results which indicated that job autonomy improves the employees' well-being and mode which resulted in an increase their productivity (Johannsen & Zak, 2020). Therefore, promoting the job autonomy in higher education organisation and provide the employees with extensive training regarding goal-based deadline and self-observation strategies seem to increase the efficiency during WFH.

Conclusion

The present study is one of the first studies in Malaysia that concerns about the productivity of employees in higher education organisations when WFH during the COVID-19 global crisis. The results of this study highlighted the importance of job autonomy (job resources) throughout WFH arrangements. In addition,

the findings suggest the importance of reducing the obstacles (job demands) in order to maintain productivity in unplanned situations such as this pandemic. The study showed that a distracting environment was a significant challenge for this arrangement and that may back to the scoop and the speed of the changes needed post COVID-19 where universities staff was not prepared to cope with the pandemic consequence at that time. Through the time, the staff and the universities have the opportunity to learn from experience gained while operating during the COVID-19 outbreak and can improve this arrangement. Due to this pandemic, WFH became the dominant way to conduct work in high-education organisations. Even after the easing of the lockdown, the possibility to mix the on-campus and off-campus learning is very likely. It is clear that WFH has already been regulated in the public sector in Malaysia and it is on the way to being regulated in the private sector; it is only a matter of time (Tambou *et al.*, 2021). Therefore, we believe that the findings of this study contribute to the literature related to WFH and employees' productivity and will help in successfully maintain the well-being and productivity of the employees during this arrangement.

Theoretical and Practical Implications

It could be said that this study has a real contribution to the literature on employees' productivity during the WFH arrangements during the COVID-19 crisis. Besides that, it provides an insight into the emotional and physical well-being of employees undertaking this arrangement. The implications of the present study are significant as they highlight the demands and resources of employees. Who needs to adjust to an entire WFH arrangement in a critical situation in a short time because of the pandemic and the majority of them lack experience with WFH arrangements. The study recommends that higher education organisations and people engaged in WFH have to enhance employee job autonomy as it is a significant enabler to WFH arrangements and pay more attention to distracting environments

when applying to WFH as it is a significant obstacle to this arrangement. The study shows that WFH arrangements are an effective way to sustain businesses during a pandemic and is a competitive advantage for organisations both during and after the crisis.

Limitation and Future Studies

This study has various limitations; those limitations can be addressed in future studies. First, this study has only a limited number of variables to represent the job demands and job resources. Future studies may extend the model and consider other variables such as the level of IT know-how or employee training provided by the organisation. This study used a quantitative approach; future studies may use the qualitative approach to get in-depth information about how WFH influenced employees' productivity during COVID-19. Third, the present study took data only from 120 respondents. While the size of the population may require more samples in order to get accurate representation. Thus, future studies can use a bigger sample size to produce more accurate results about the WFH of high-education employees in Malaysia. In addition, this study was conducted only in the Universiti Malaysia Terengganu (UMT) context, future studies may consider using other, more varied number of universities.

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Appendix

Appendix 1: Measurement table

Antecedent	Items	Source
Work-Life conflict	The needs of my work overlap with my family and home life. Things I want to do at home cannot be achieved because of the job demands puts on me. The amount of time taken my job makes it difficult for me to complete the family responsibilities My job produces strain that makes it difficult to fulfil family duties.	(Netemeyer, Boles, & McMurrian, 1996)
Social isolation	I am missing contacting with my coworker face-to-face. I am missing my coworker's emotional support. I am feeling such as left out of the loop. I missed informal interaction with others.	(Golden, Veiga, & Dino, 2008)
Distraction of environment	I find it difficult to focus on my work. I suffer from visual distractions at my work area. I suffer from auditory distractions at my work area.	(Lee & Brand, 2005)
Job autonomy	The job lets me to make my own decisions about how to schedule my work. I have authority in identifying tasks to be performed. The job lets me to plan about how I want to do my work. The job lets me decide the order in which tasks going to be done on the job.	(Jamal <i>et al.</i> , 2021)
Productivity	I feel like I am productive at my work environment. My work environment lets me to enhance my overall work performance. My work environment lets me to make high quality work.	(Bélanger, 1999)