International Journal of Social Sciences and Humanities Invention 9(04): 6925-6933, 2022
DOI: 10.18535/ijsshi/v9i04.05
ISSN: 2349-2031
https://valleyinternational.net/index.php/theijsshi

Factors affecting remote working productivity: A Study of higher education institutions employees in Sibu, Sarawak

***Toh Ting Ling[1], Ngian Ek Tee[2], Kiew Jiet Ping[3] and Chang Kai Yuan[4]**

[1&2]Department of Business Administration, [3]Department of Accounting
School of Business and Management
University College Technology Sarawak
No.1, Jalan University, 96000 Sibu,
Sarawak, Malaysia.

Abstract

The Covid-19 pandemic made remote working or working from home (WFH) the new way of working. It has significantly increased its application, becoming the only way to carry on activities for most of the organizations in many countries including Malaysia during the movement control order (MCO). The flexible work arrangements have actually already become a trend driven by technological advancement and cultural changes as more and more employees demand greater flexibility nowadays. However, most of the corporate companies concern about long-term working from home is a decrease in productivity. Thus, the research on working from home and its effectiveness is needed for different industries. This study aims to identify factors affecting remote working productivity among employees of higher education institutions in Sibu, Sarawak. The study focuses the direct effect of work environment at home, peer support, work satisfaction, and organizational support on remote working productivity. Quantitative research is used by developing survey questionnaires through Google Form. 82 valid responses were collected and analysed using Partial Least Squares – Structural Equation Modelling (PLS-SEM) and SPSS. The statistical results have demonstrated that working environment at home has a significant positive relationship with remote working productivity, while peer support, work satisfaction and organisation support have no significant relationship on remote working productivity among employees of higher education institutions in Sibu, Sarawak. The findings suggest that the management of higher education institutions should give greater emphasis on strengthening the workplace environment at home for those employees who work from home for better remote working productivity.

Keywords: Remote working, productivity, higher education institutions, Sibu, Sarawak, Malaysia.

Introduction

Remote working or work from home (WFH), also known as flexible working arrangements, is a process where the employees work in a location other than office (Hatch, 2006) and is becoming more prevalent in research as a result of both societal trends and technological advancements. Since March 2020, Malaysian government enforced movement Control Order (MCO) to break the chain of infection of the Corona Virus. Almost every industries have been affected by the movement control policies including tertiary education. The employees of Higher education institutions were instructed to work from home for nearly two years since the enforcement of movement control order (MCO) as education institution is excluded from the essential industry. Working from home, according to Nicholas Bloom (Gorlick, 2020), meant continuing to work with the same output or efficiency at the time of the pandemic, which might result in a reduction in productivity and pose a long-term threat to economic growth. Most of the corporate companies concern about long-term working from home is a decrease in productivity, therefore various studies on working from home and its effectiveness have been conducted. However, the study of remote working productivity of

higher education institution is lacking. Moreover, it is special opportunity to examine the viability of WFH as one of the higher education institution's future working models; therefore it is vital to study factors influencing the remote working productivity to enhance the employee's productivity while working from home. This study focuses on employees of higher education institutions in Sibu.

Literature Review

Underpinning Theory

ERG theory is a model of human motivation which developed and proposed by Alderfer in year 1969, which is extended and simplified version of Maslow's Hierarchy (Wukir, 2013) as it prioritizes user's needs on a hierarchy place. The theory describe three levels of needs: E stand for existence which refers to the need for the existence of basic materials such as shelter, healthy physical and psychological safety needs (Sudiardhita et. al., 2018); R stand for relatedness or relevance interactions which refer to the desire to have interpersonal relationships and social interactions; and lastly G stand for growth and development, which the desire will be met with the involvement of individuals within the organisation. ERG theory can be used to explain and predict workplace issues, relationship paradigms, and personal development choices (Caulton, 2012).

Productivity

Employee productivity, to be precise, will have a direct impact on the company's profitability and success. Most of the business organisations today face the demand to increase employee productivity, which has become a pressing issue for organisations (Osman et. al., 2020). Because productivity is one of the most important aspects of the workplace, we studied whether it is linked to working environment, work satisfaction, peer support and organisational support with the remote working perspective in our study.

Working Environment

The workplace environment can be defined as the surroundings at a place of occupation which include inside, outside, at a desk and in a cubicle (Osman et. al., 2020). Gonzalez (1999) characterises the value of the working environment as "a crucial determiner of employee performance and helps employees focus on their task appropriately." Naharuddin and Sadegi (2013) also concluded that the working environment play an important role towards the employees' productivity and also their performance. The employees who WFH during pandemic may have to share their workspace with family members and may affect their working productivity. Previous studies suggested that quality of the employee's workplace environment has most impacts on their level of motivation and subsequent performance (Chandrasekar, 2011; Awan & Tahir, 2015; Hamid & Hassan, 2015). Therefore, the hypothesis below is developed:

H1: Working environment is positive and significantly related to remote working productivity.

Peer Support

Peer support is an important attribute to improve group productivity according to National Association of Colleges and Employers' research in year 2019. It is crucial for employees to collaborate and communicate with team members, especially managers to achieve the desired result in the workplace (Osman et. al., 2020). Therefore, the crucial aspect of work from home during the pandemic is workplace isolation. Despite the fact that prior research has identified social isolation as one of the major disadvantages of remote work (Bentley et. al., 2016), its prevalence has undoubtedly increased over time. People have been socially isolated as a result of the epidemic, which may be linked to decreased job satisfaction and performance (Toscano et. al., 2020). In compared to the social contacts that are normally experienced by persons in their workplaces as well as in social life, such as chatting in office or seeing friends, the use of digital technology to communicate may only partially offset the isolation experienced by workers. Previous studies suggested that there is positive and significant relationship between peer support and employee productivity (Osman et. al., 2020; Sudiardhita et. al., 2018; Naharuddin & Sadegi, 2013). In view of the literature, it is hypothesised that:

H2: Peer support is positive and significantly affect remote working productivity.

Work Satisfaction

Work satisfaction refers to a person's feeling of satisfaction on work, which acts as a motivation to work (Shiyani, 2021). Employees' work satisfaction is vital for the performance of any organisation in the

corporate world (Kaushik & Guleria, 2020). A satisfied employee will put their best effort to achieve organisation objectives and therefore is strong foundation of organisation's success. In the other hand, unsatisfied employee will lead to low morality and low productivity in the workplace (Darachart, 2019). It is widely accepted that work satisfaction has positive relationship with improvement of productivity of higher education institution employees. As the literature shows work satisfaction has a positive and significant influence on employee's productivity, the hypothesis below is developed:
H3: Work satisfaction is positive and significantly related to remote working productivity.

Organisational Support

The organisational support can be described as providing knowledge, guidance, and action taken by the organisation in helping employees perform activities related to their work (Chadwick & Collins, 2015). Organisational support for the employees who WFH can be technical support, human resource support, financial support, training and so on. Previous research indicated that organisational support positively affects improving employee performance and productivity (Osman et. al., 2020; Awan & Tahir, 2015; Manyasi et. al., 2011). Since the literature shows that organisational support have an impact on work productivity, it is thus hypothesised that:
H4: Organisational support is positive and significantly related to remote working productivity.

Conceptual Framework

Some characteristics of remote work were considered job demands in the framework we developed for this study, including a suitable workstation or work environment to carry out their work activities, the social context or employees' relations, employees work satisfaction and the support that organisation provided for employees to work from home; and how these variables affect the remote working productivity.

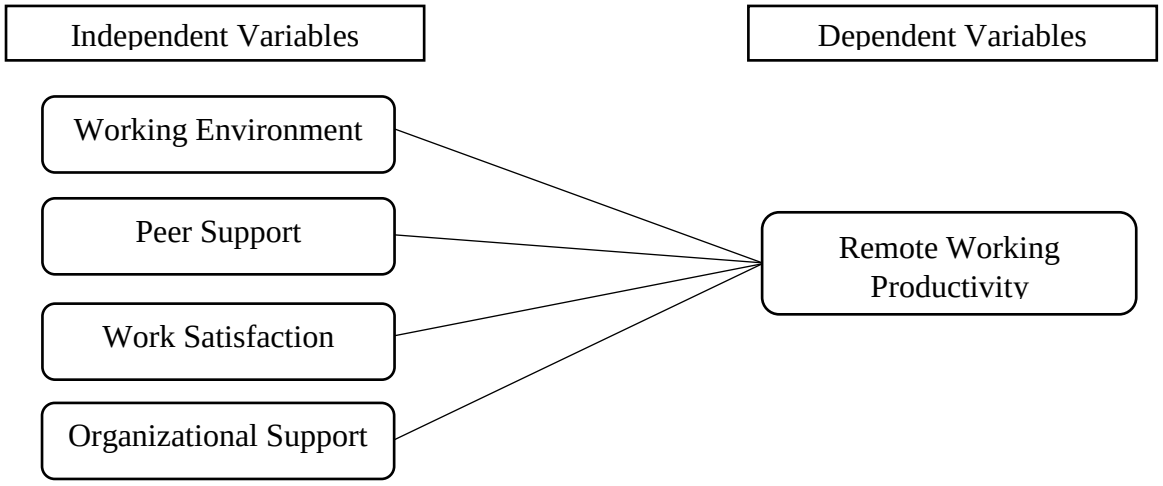

Figure 1: Conceptual Framework

Source: Self-developed

Research Methodology

This study focuses on the employee remote working productivity in higher education institutions in Sibu during the Covid-19 pandemic. Quantitative survey method has been used for this study and primary data has been collected. The target respondents of this study are employees who work in higher education institutions in Sibu, namely University of Technology Sarawak (UTS), Kolej Laila Taib (KLT) and Methodist Pilley Institute (MPI). There are a total of 304 employees in UTS, around 70 in MPI and roughly 45 in KLT, making the population of 419. A sample size larger than 30 and less than 500 are appropriate for most research (Sekaran & Bougie, 2013).
A close-ended questionnaire which consists of two section has been developed and were emailed to target respondents. Section A consists of a total of 27 observed variables constitute the measurement of the independent variable of nine items of productivity, four items for working environment, four items of peer support, five items of work satisfaction, and five items of organisational support. A five-point likert scale

was utilised, with responses ranging from strongly agree to strongly disagree. Section B is to collect demographic information of the respondents.

Convenience and non-probability sampling method was used, meaning the collection of information from members of the population who are conveniently available to provide it (Sekaran & Bougie, 2013). In total, 82 useable responses were collected. SPSS version 26 had been used for descriptive analysis while SmartPLS version 3 had been utilised to examine the measurement and structural models because of the data collected are small sample size and it is also commonly used statistical analysis method for latent variables.

Findings

This study utilised SmartPLS version 3 and SPSS version 26. SmartPLS version 3 was used to examine the measurement and structural models (Hair, Hult, Ringle, & Sarstedt, 2017). The measurement model was assessed constructs to ensure that internal consistency, factor loading, convergent validity, and discriminant validity meet the recommended threshold quality. Furthermore, the structural model was analysed to determine the relationship between constructs through variance inflator factor (VIF), path coefficient, coefficient of determination (R^2), and predictive relevance (Q^2) (Hair et al., 2017). The researchers conducted descriptive statistics by using SPSS version 26 to obtain the general information of the 82 respondents. A complete demographic profile of the respondents is presented in Table 1.

Table 1: Demographic Profile of Respondents

		Respondent (N=82)	
Demographic Variables	**Category**	**Frequency**	**Per cent (%)**
Gender	Female	45	54.90
	Male	37	45.10
Age	18-25	1	1.20
	26-40	54	65.90
	41-50	16	19.50
	51 and above	11	13.40
Marriage Status	Marriage with Children	42	51.20
	Marriage with No Children	8	9.80
	Single	32	39.00
Ethnicity	Bumiputra Sarawak	19	23.20
	Chinese	41	50.00
	Indian	1	1.20
	Malay	21	25.60
Education Level	DBA	1	1.20
	Degree	20	24.40
	Master degree	43	52.40
	PhD	12	14.60
	STPM/ foundation/ diploma	6	7.30
Nature of Job	Academic staff	59	72.00
	Administrative staff	19	23.20
	Technical staff	4	4.90
Years of Employment	10 years and above	16	19.50
	2 - 5 years	33	40.20
	6 - 10 years	22	26.80
	Less than 2 years	11	13.40

Source: Own developed for the research used

Assessment of the Measurement Model

The assessment of the measurement model is in Table 2. All factor loadings from the measures exceed the threshold value of 0.708 after deleting six items from an overall of 28 items. Additionally, this study continued to assess the composite reliability (CR) and average variance extracted (AVE) of the constructs (Hair et al., 2017). The AVE is higher than the cut-off value of 0.500, and CR values are above 0.700 to establish the measures' internal consistency reliability. As a result, the CR values of the working environment, peer support, working satisfaction, organisational support, and remote working productivity are more significant than 0.700. The AVE values of these constructs exceed the threshold value of 0.500 (Hair et al., 2017). Consecutively, this study also assessed the discriminant validity test for the constructs.

The discriminant validity refers to the extent to which the constructs under investigation are different; hence, this study examined the Heterotrait-Monotrait (HTMT) criterion (Henseler et al., 2015).

Table 2: Results of Measurement Model

	Measurement Items	Cronbach's Alpha	Factor Loadings	Composite Reliability	Average Variance Extracted (AVE)
Remote Working Productivity	Productivity2	0.945	0.894	0.956	0.783
	Productivity3		0.840		
	Productivity4		0.905		
	Productivity5		0.894		
	Productivity6		0.900		
	Productivity8		0.874		
Working Environment	WorkingEnvironment1	0.906	0.872	0.935	0.783
	WorkingEnvironment2		0.803		
	WorkingEnvironment3		0.939		
	WorkingEnvironment4		0.920		
Peer Support	PeerSupport1	0.859	0.915	0.913	0.778
	PeerSupport2		0.839		
	PeerSupport3		0.892		
Working Satisfaction	WorkSatisfaction1	0.948	0.957	0.966	0.905
	WorkSatisfaction2		0.953		
	WorkSatisfaction3		0.944		
Organisational Support	OrganisationalSupport1	0.923	0.891	0.942	0.764
	OrganisationalSupport2		0.835		
	OrganisationalSupport3		0.818		
	OrganisationalSupport4		0.898		
	OrganisationalSupport5		0.922		

Note: a. Loading for items that are above the recommended value 0.708.
b. Composite Reliability (CR) = (square of the summation of the factor loadings)/ {(square of the summation of the factor loadings) + (square of the summation of the error variances)}
c. Average Variance Extracted (AVE) = (summation of the square of the factor loadings)/ {(summation of the square of the factor loadings) + (summation of the error variances)}

Table 3 shows the assessment of HTMT values of the constructs were below 0.900, and these values confirm the discriminant validity of the constructs in the model. Therefore, the constructs and the identified indicators were appropriate for evaluating the model and testing the hypothesis.

Table 3: HTMT Criterion for Discriminant Validity of Constructs

	Organisational Support	Peer Support	Remote Working Productivity	Work Satisfaction	Working Environment
Organisational Support					
Peer Support	0.571				
Remote Working Productivity	0.350	0.571			
Work Satisfaction	0.471	0.554	0.570		
Working Environment	0.386	0.677	0.894	0.600	

Note: HTMT < 0.900 (Gold, Malhotra, & Segars, 2001)

Assessment of Structural Model

The assessment of the structural model demonstrates the relationship between the constructs. As shown in Table 4 and Figure 1, the structural model of this study was evaluated the effect of working environment,

peer support, working satisfaction, and organisational support on remote working productivity. The variance inflation factor (VIF) was assessed by the indicators specified in the structural model to determine the tolerance of collinearity to ensure that other constructs do not explain one relationship. Table 4 shows the VIF values of the constructs that are below the 5.0 assumption of collinearity (Hair et al., 2017). Hence, collinearity between the constructs was not an issue in this dataset.

The researcher determined path coefficient (β) and t-statistics (t-value) for each proposed hypothesis by testing the bootstrapping. The finding shows that the working environment revealed a positive and significant relationship with remote working productivity (β = 0.769; t-value = 6.999), supporting H1. Remarkably, peer support (β = 0.005; t-value = 0.045), work satisfaction (β = 0.107; t-value = 0.908), and organisational support (β = 0.008; t-value = 0.133) were negatively related to remote working productivity. Therefore, it is to conclude that H2, H3, and H4 were not supported.

Furthermore, the coefficient of determination of the effect of the construct was assessed using R^2 values. The predictive relevance of the variables was also examined using Q^2 values to establish the relationship between the constructs (Ramayah, Cheah, Chuah, Ting, & Memon, 2018). The Blindfolding procedures were being performed for the Q^2 value. The Q^2 value of the remote working productivity was 0.527, which is more than the zero value, which is relevant to the model. Besides, the R^2 value of the remote working productivity was 0.705, indicating that the proposed predicted 70.5% of the variance in remote working productivity.

Table 4: Results of the Measurement Model

Hypothesis	**Relationship**	**Coefficient**	**Variance Inflator Factor (VIF)**	**t-value**	**Decision**
H1	Working Environment -> Remote Working Productivity	0.769	1.836	6.999*	Supported
H2	Peer Support -> Remote Working Productivity	0.005	1.936	0.045*	Not Supported
H3	Work Satisfaction -> Remote Working Productivity	0.107	1.641	0.908*	Not Supported
H4	Organisational Support -> Remote Working Productivity	0.008	1.461	0.133*	Not Supported

Note: t >1.645*; p <0.05 or t >2.33**; p <0.01

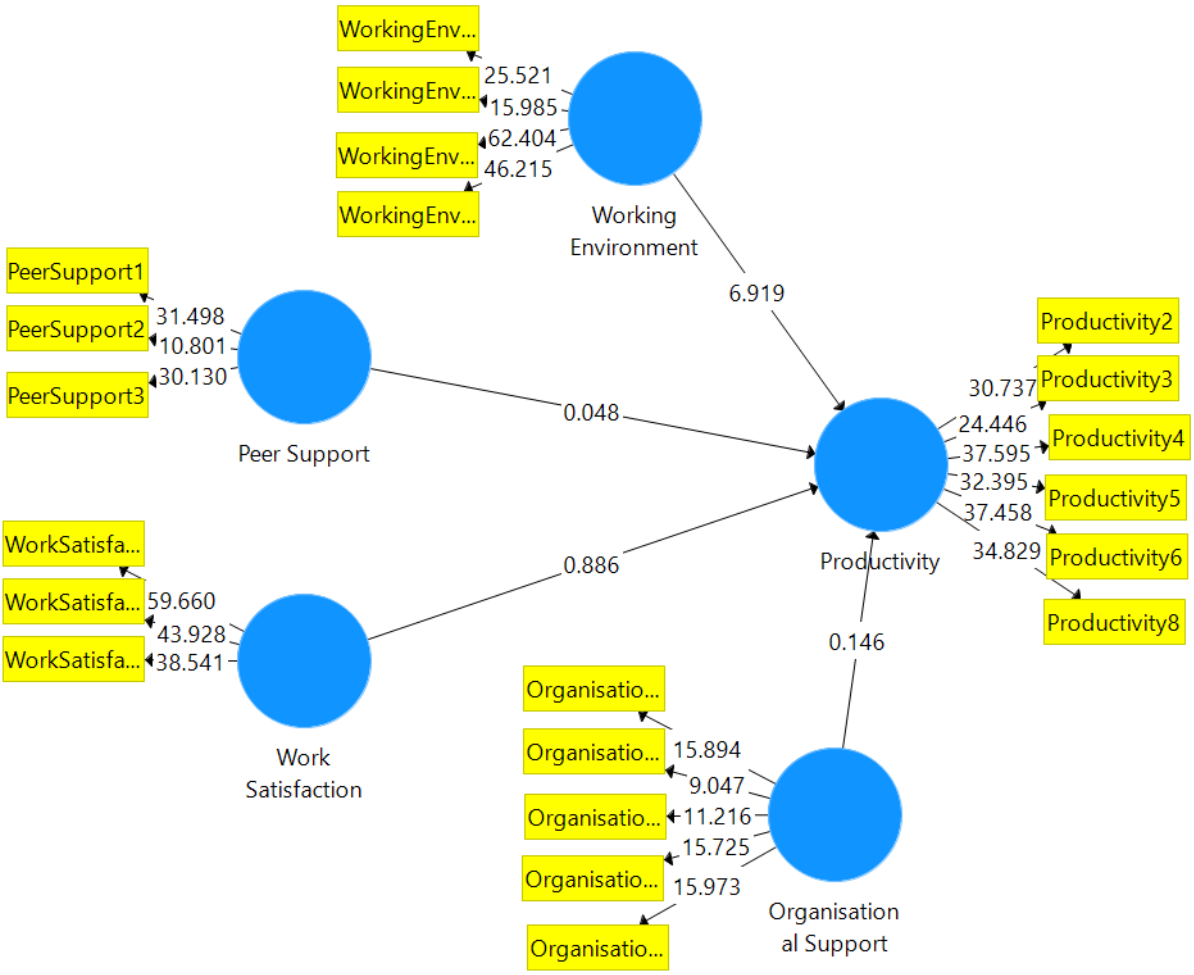

Figure 1: Results of the Path Analysis

Discussion

This study attempts to determine the direct effect of the working environment, peer support, work satisfcation, and organisational support on remote working (WFH) employee productivity of higher education institutions in Sibu, Sarawak.

The results clearly suggest that the workplace environment has the greatest impact on work-from-home employee productivity. This emphasises the relevance of the workplace environment in affecting the productivity of work-from-home employees. The conclusions of this study are similar to the studies from Darachart (2019), Awan & Tahir (2015), Boyee et. al. (2013), and Chandrasekar (2011) which suggested that workplace environment has the most impacts on employees motivation and subsequent performance. Workplace environment factors such as lighting, noice, communication and psychology support are said to have significant impacts on employee morale in which may affect their wok productivity (Hamid & Hassan, 2015). Therefore, before permitting employees to work from home, higher education institutions must be proactive and exhibit a strong determination to ensure that they have an adequate and suitable workplace environment. In comparison to employees working in improper and uncomfortable work conditions, the findings suggest that a decent workplace environment at the employees' homes leads to increased employee productivity, which in turn leads to better financial returns for higher education institutions.

The result from this research study found out that peer support, work satisfaction and organisational support has no significant relationship towards remote working productivity. The finding indicates that remote working perspective is different with workplace perspective in terms of factors affecting productivity. According to one of the major studies conducted in a remote work environment, there were no significant connections between job performance and job satisfaction found (Golden et. al., 2008). Furthermore, as the study is conducted in higher education institutions, the result is not consistent with the previous research may be also due to the nature of work of academic staff is quite different with others, which is more individually and self-discipline.

Conclusions

Remote working must be carefully managed to ensure that it improves rather than degrades the quality of work or the productivity of employee. It is proven that the home working environment is crucial to maintain the productivity while employees are working from home. Although there are several limitations in this study: 1. The sample size is small and the sample areas limited to only three higher education institutions in Sibu; 2. Only few factors considered in the study whereas there lots more other factors may be affecting remote working productivity such as trainning and working attitude. However, this could still be one of a useful reference for the management of higher education institutions if remote working model is implemented. Various improvements should be done in order to better comprehend remote working productivity. Other factors that will influence the remote working productivity is worth for future research.

References

1. Awan, A. G., & Tahir, M. T. (2015). Impact of working environment on employee's productivity: A case study of Banks and Insurance Companies in Pakistan. *European Journal of Business and Management*, 7(1), 329-347.
2. Boyce, P., Veitch, J., Newsham, G. M. & Hunter, C. (2013). Lighting quality and office work: A field simulation study, Ottawa, Canada: U.S. Department of Energy & National Research Council of Canada.
3. Caulton, J. (2012). The development and use of theory of ERG: A literature review. Emerging Leadership Jounals, 5(1), 2-8.
4. Chadwick, K. A. & Collins, P. A. (2015). Examining the relationship between social support availability, urban center size, and self-perceived mental health of recent immigrants to Canada: A mixed-methods analysis. *Social Science & Medicine*, 128, 220-230.
5. Chandrasekar, K. (2011). Workplace environment and its impact on organisational performance in public sector organisations. *International Journal of Enterprise Computing and Business Systems*, 1(1), 1-19.
6. Darachart, W. (2019). Satisfaction of working conditions and productivity improvement. International Academic Multidisciplinary Research. London, United Kingdom. http://icbtsproceeding.ssru.ac.th/index.php/ICBTSLONDON/article/view/17
7. Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge management: An organisational capabilities perspective. Journal of Management, 18(1), 185-214.
8. Golden, T. D., Veiga, J. F., Dino, R. N. (2008). The impact of professional isolation on teleworker job performance and turnover intentions: does time spent teleworking, interacting face-to-face, or having access to communication- enhancing technology matter? *Journal of Application Psychology*, 93, 1412-1421.
9. Gorlick, A. (2020). The productivity pitfalls of working from home in the age of covid-19. Stanford News. Retrieve from https://news.stanford.edu/2020/03/30/productivity-pitfalls-working-home-age-covid-19/
10. Hair, J., Hult, G., Ringle, C., & Sarstedt, M. (2017). A primer on partial least squares structural equation modeling (PLS-SEM) (2nd ed.). Thousand Oaks: Sage Publications Inc.
11. Hamid, N. Z. A. & Hassan, N. (2015). The relationship between workplace environment and job performance in selected government offices in Shah Alam, Selangor. International Review of Management and Business Research (RMBR), 4(3), 845-851.
12. Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the Academy Marketing Science, 43, 115-135.
13. Kaushik, M. & Guleria, N. (2020). Employee relations and engagement during Covid-19. Sparkling International Journal of Multidisciplinary Research Studies, 3(2), 0-11.
14. Naharuddin, N. M. & Sadegi, M. (2013). Factors of workplace environment that affect employees' performance: A case study of Miyazu Malaysia. *International Journal of Independent*, 2(2), 66-78.
15. Hamid, N. Z. A. & Hassan, N. (2015). The replationship between workplace environment and job performance in selected government offices in Shah Alam, Selangor. *International Review of Management and Business Research (RmBR).* 4(3), 845-851.

16. Osman, Z., Ismail, Z., Ahmand Khan, B. N., & Alwi, N. H. (2020). Determinants of work-from-home productivity among higher education institution employees during the Covid-19 pandemic in Malaysia. *ASEAN Journal of Open and Distance Learning*, special issue, 1-13.
17. Ramayah, T., Cheah, J., Chuah, F., Ting, H., & Memon, M. (2018). Partial least squares structural equation modeling (PLS-SEM) using SmartPLS 3.0: An updated and practical guide to statistical analysis (2nd ed.). Kuala Lumpur: Pearson.
18. Sekaran, U. and Bougie, R. (2009) *Research Methods for Business: A Skill-Building Approach, 5th Edition.* Wiley Publishers.
19. Shiyani (2021). Job satisfaction: Meaning, definition, importance, factors, effects and theories. Businessmanagementideas.com.
20. Sudiardhita, K. I. R., Mukhtar, S., Hartono, B., Herlitah, Sariwlulan, T., & Nikensari, S. I. (2018). The effect of compensation, motivation of employee and work satisfaction to employee performance. *Academy of Strategic Management Journal*, 17(4), 1-14.
21. Toscano, F., Zappala, S. (2020) Smart Working in Italia: Origin, diffusione e possibili estili. *Priscol Soc*, 15, 203-223.
22. Wanous, J. & Zway, A. (1977). A cross sectional test of need hierarchy theory. Organisational Behaviour and Human Decision Processes, 18(1), 78-88.
23. Wukir (2013). Human resource management in school organization. Yogyakarta, Multi Presindo.