THE IMPACT OF HOME FINANCING COSTS AND THE BUILT ENVIRONMENT ON THE DEPRESSION LEVELS OF LOWER-INCOME EMPLOYEES WORKING FROM HOME DURING THE COVID-19 PANDEMIC (MARCH 2020 - MARCH 2021)

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Abstract

As a result of COVID-19 which was at its height between March 2020 and March 2021, the Malaysian government was forced to impose a Movement Control Order in phases to limit mobility. Consequently, many employees, including those from lower-income (B40) groups, were compelled to work from home (WFH). The movement limitations caused severe losses in income, and many had to alter the nature of their work to adapt to the WFH requirements. Concern with the mental health issues which have become a serious issue worldwide due to the increasing psychological damage caused by COVID19, this study, through questionnaire of lower income employees working from home in Penang Island, Malaysia, aims to contribute to the study of the quality of live and impact of their habit towards built environment when working from home. Data analysis is performed using SEM-PLS to examine the impact of housing cost and built environment on WFH productivity levels. This was subsequently extended to observe the influence of productivity levels on levels of depression. The results show that home financing costs and the built environment positively influenced WFH productivity levels but at the expense of higher levels of depression. The results of this study may be of interest to policy makers who need to plan mental health awareness programs due to financial worries and confined space environment for lower income group, as health culture could foster healthy equitable communities and well-being physically and mentally.

Keyword: Home financing costs, built environment, WFH, depression levels, COVID-19

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INTRODUCTION

This study refers to the time when COVID-19 cases were at their highest levels, between March 2020 and March 2021. During this period, the pandemic showed no signs of abating, with many countries facing its first, second, or third wave. Malaysia was one of the countries affected by the pandemic's third wave, with daily cases exceeding 7,000 (as of 28 May 2021). Numerous financial and social initiatives have been undertaken to combat the pandemic since its outbreak in March 2020; however, the continuous and prolonged measures have had detrimental effects on the finances and health of Malaysians.

In 2021, the number of COVID-19 cases was increasing, rising from 2,068 cases on 1 January 2021 to 8,290 on 28 May 2021. According to the Health Ministry, this happened because an excessive number of clusters were occurring in every state in Malaysia. Some of those clusters were linked to the workplace and individuals affected by the 13 new COVID-19 Variants of Concern (VOC): 12 South African variants and one Indian. Minister of Health Dr. Noor Hisham said that at least 22 cases of COVID-19 had been identified as "variants of concern."

Meanwhile, the pandemic has also had a major financial impact on B40 groups. The implementation of the Movement Control Order (MCO) by the Malaysian Government forced B40 households to cut their daily consumption levels, as well as use money and other resources carefully rather than wastefully. Families with low incomes coupled with poor financial planning have suffered considerably during the pandemic.

Financial impact of COVID-19

COVID-19 has been shown to have implications for the global economy to a catastrophic degree, and that influence has been demonstrated in financial markets worldwide. The unprecedented COVID-19 pandemic is believed to have impacted the economy and finances of many countries more widely and significantly than other temporary epidemics such as the Zika and Ebola viruses (Estrada et al., 2020). The rapid spread of COVID-19 necessitated immediate lockdowns in a number of nations, actions that halted approximately 90% of economic activity. Using the term 'stagpression', Estrada and Lee (2020 suggested a five-month lockdown period could be catastrophic for any economies that exceeded their sustainability threshold. COVID-19, it has also been suggested, has damaged the stock market and the recovery could take around a year. Wang et al., (2021) suggested that the propagation of COVID-19 has exerted a significant short-term effect on the global financial markets' stock movements. Employing two types of panel causality approaches, the empirical evidence suggested a causal relationship between COVID-19 and stock market returns in Canada, France, Germany, Italy, and the United States.

Health-related impact of COVID-19
The impact of quarantine-related stress on levels of depression and mental health is expected to be exacerbated among people with pre-existing mental illness and those with a predisposition for developing mental illness due to the possibility of recurring stressors. Unfortunately, the COVID-19 pandemic is also expected to affect people who display symptoms of, but do not meet the diagnostic criteria for, psychiatric disorders (Esterwood and Saeed, 2020). As research on previous pandemics revealed, the most frequently encountered negative psychological impacts of quarantine are post-traumatic stress symptoms, disorientation, and rage (Brooks et al., 2020). Stressors occurring during confinement were found to include fear of infection, frustration, boredom, insufficient supplies, incomplete knowledge, a loss of income, prejudice, and an escalation in confinement time. Significant impacts on depression and mental health were identified, as was the tendency to develop an unhealthy lifestyle during, as opposed to before, the confinement imposed by the COVID-19 epidemic. In particular, social and physical inactivity, an unhealthy diet, and poor sleep quality were all related to the decreased mental and emotional well-being that resulted from enforced confinement at home (i.e., depressive and dissatisfied feelings) (Ammar et al., 2021).

Financial initiatives by the Malaysian government
Malaysia issued various movement control orders (MCOs) to curb the spread of COVID-19. The country introduced MCOs of different strictness levels intended to either immediately break the COVID-19 infection chain (MCO), re-open and 'recover' the national economy in a controlled and conditional manner (Conditional MCO), gradually reopen and 'recover' the country's economic and social sectors (Recovery Conditional MCO), cease all activities in certain localities (Enhanced MCO), lock down individual residential complexes or office buildings with tighter restrictions (Targeted Enhanced MCO), or apply the MCO to specific high-risk areas but with fewer restrictions (Administrative Enhanced MCO) (Malay Mail, 2020). While the MCOs were being implemented, the Malaysian government provided many initiatives to help unfortunate citizens who had been financially affected by the pandemic. Focusing on MCO 1.0, which was implemented in March 2020, 14 initiatives were taken to assist families. Apart from giving a loan moratorium to all Malaysians for three months, there were cash stimulus packages such as 'Prihatin Nasional' aid, living cost aid, civil servant aid, pensioner's aid, e-hailing aid, low-cost rental waivers, loan deferments for six months, electricity bill savings for six months, free internet starting 1 April until the first MCO ended, a private retirement fund withdrawal scheme, and a six-month deferment of education loans.
Work From Home policy in Malaysia

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Like other countries, Malaysia also implemented a work from home policy (WFH). Based on the COVID-19 Malaysian Employees' Sentiment on Working from Home Survey, undertaken between 31 March and 6 April 2021, 84% felt that their companies were prepared for the shift to WFH. Four out of five staff were satisfied with the levels of remote engagement when working from home. Employees had an average of 2.3 virtual meetings daily. They had been keeping their WFH fun and engaging via coffee breaks, hobbies, and skills showcases, all conducted virtually. However, prolonged MCOs might have changed the euphoria of working at home into a state of depression.

Problem statement
The major issue of concern in this paper is the depression levels of low-income individuals who were working from home during the mobility control orders. This has a considerable connection with the stress levels of existing employees and the necessity for adequate employer action. The authors recognized a duality in this problem as the foundation of the research. To begin with, one area of concern is the magnitude of home financing costs and the impact of the built environment (including working space) on the productivity levels of individuals working from home. While several studies have been conducted on the association between financing costs and depression levels (Chun, 2020; Bentley et al., 2011), none examined whether the built environment of low-income workers had any substantial effects on working productivity. The second area of concern is the connection between the productivity levels of those working at home and levels of depression. Although several studies have been conducted on the relationship between productivity levels and mental health (Johnston et al., 2019 and Hünefeld, et al., 2020), they have not considered the low-income demography or the worldwide pandemic as the study setting, hence the knowledge gap in this topic.

This research aims to examine the impact of home financing costs and the built environment on WFH productivity levels, consequently exploring how the latter affected the depression levels of employees working from home during the COVID-19 pandemic. Therefore, the main objectives of this study are twofold: i) to determine the impact of home financing costs and the built environment on WFH productivity levels and ii) to determine the impact of WFH productivity levels on depression levels. The context of both objectives is the peak period of COVID-19, specifically between March 2020 and March 2021. This study aimed to determine how these relationships were exhibited among B40 citizens in Pulau Pinang, Malaysia.

LITERATURE REVIEW

The concept of mental health and well-being gained global attention while people were following the lockdown procedures enforced by many governments. The Movement Control Order (MCO) impacted people directly (physically) and indirectly (mentally). Therefore, it is important to diagnose instances of people suffering from mental stress. Studies by the World Health Organization (WHO), Wu et al. (2021), and O'Keefe, O'Keefe, and Lavie (2019) stressed the importance of mental health, as the number of people currently living with mental disorders or illness is increasing. These previous studies also reviewed the consequences of mental illness, such as depression, cardiovascular diseases, and anxiety; in the worst case, an individual may commit suicide. Complementing this, it is important to fully understand the definition of mental health.

The World Health Organization (WHO, 2019) defined mental health as a state of well-being in which every individual can realize their own potential, cope with the normal stresses of life, work productively and fruitfully, and contribute to their community. Another definition of mental health was given by Vázquez, Perez-Sales, and Hervás (2008), who stated that mental health and mental symptoms are not merely opposite ends of a continuum but two separate dimensions that should be considered and evaluated separately. According to this study, the dominant view of mental health is that it should be measured using positive (psychological well-being) and negative (symptoms, difficulties, and impairment) impacts. Therefore, it seems that the positive aspects of functioning and well-being should be seriously considered when analyzing the effects of mental health, especially on psychological adjustment. The dominant view of mental health has traditionally been pathogenic, with a narrow focus on symptoms (Seligman & Csikszentmihalyi, 2014).

Housing costs and mental stress

Housing costs or housing affordability is becoming a serious issue, including in Malaysia. Many previous studies have investigated housing affordability, such as those by Kepili (2020a), Kepili (2020)b and Mia and Zull (2020). Discussions of housing affordability are always related to the difficulty of obtaining adequate, appropriate, and secure accommodation at a practicable cost. Most lower-income households (B40) spend about 30% of their budget on meeting their housing costs, which could contribute to housing stress (Kepili, 2019).

In the narrowest terms, housing stress refers only to financial strains measured by housing affordability indicators (Morris, 2018; Chung et al., 2020). Studies have reported that poor housing affordability affects depression levels due to the stress of housing payment difficulties (Bentley, Baker, Mason, et al., 2011). However, social epidemiological studies have also found that overcrowding, residential instability, a lack of safety, and poor relationships with

neighbors and landlords could cause stress and depression (Quinn et al, 2010; Li and Liu, 2018). Thus, there has been a call for an expanded conceptualization of housing stress, reflecting the fact that many households spend a high proportion of their budget on housing costs, so they must calculate carefully when preparing for their housing needs. The worst-case scenario is that they do not have adequate resources to meet their non-housing needs. In other words, lower-income households have more limited financial resources that prevent them from fully participating in society (financial stress).

Financial stress could be defined as the inability of a person to achieve healthy financial planning; such people may suffer from financial disorders such as compulsive buying disorder, financial infidelity, financial pathology, and financial enmeshment (Klontz, Britt, Archuleta, & Klontz, 2012). An unhealthy financial status could affect an individual's life. They might be in a state of depression or instability (both mental and physical). According to Harding and Szukalska (2000), to maintain the standards of living among lower-income earners, it is necessary to reduce housing costs instead of controlling a household's capacity.

Built environment and depression
Since the 1980s, sociological theories have identified different features of the built environment as stress generators that impact on mental health and individual performance, while stress may be powerfully mitigated by environmental enhancements. Hence the concept of 'home sweet home', conveying the idea that the home is a place where most people feel comfortable, as well as free from control and surveillance. The most important aspect is the capacity of the home to deliver the deepest psychological sense to an individual. In fact, humans spend more than 90% of their lives indoors, which is connected to the requirement for ambient environmental conditions that assist in building positive and healthy surroundings. A study by Matheson et al. (2006) indicated that investing in a comfortable home designed to fulfil the buyer's satisfaction had a direct impact on their social and economic development, as well as being linked with depression status.

This finding is supported by the work of researchers such as Mari-Dell'Olmo et al. (2017), Sederer (2016), and Shaw (2004), who recognized housing as one of the key determinant social factors affecting mental health. According to Dunn and Hayes (2000), the built environment affects depression and mental health in two major ways: first, due to the characteristics of the built environment (higher residential density) and, second, due to the characteristics of the environment (such as crowding, noise, indoor air quality, and light). In short, this means that housing design, housing quality, and social and economic aspects such as affordability, tenure, and crowding all impact individual mental health.

Evans (2003) summarized that higher-quality housing, including better building structures and indoor amenities (e.g., private baths and central heating) was positively associated with better mental health.

In contrast, if one lacks privacy, a sense of control, and autonomy in one's home, this may generate pathological manifestations such as anxiety, depression, insomnia, paranoid feelings, and social dysfunction (Bonnefoy, 2007). Limited space in which to build an environment directly contributes to social isolation among mothers and restricted play opportunities for children, potentially causing mental stress. Housing space limitations are usually related to more high-rise accommodation, especially in urban areas, which are generally populated by low-income families. The growth in this form of housing usually results in insufficient spaces and maintenance, sometimes diminishing individual feelings of ease and indirectly becoming a breeding ground for psychosis (Abbot, 2012; Kennedy & Adolphs, 2011). Besides, cities and urban areas are often perceived as stressful as residents are overwhelmed by pollution, unhealthy features, and alienation. Therefore, depressive symptoms always appear among people who live in stressful environments.

Employee productivity and health
Company or organization performance is very closely related to employee performance (Uysal and Sirgy, 2019). Most people consider their work an important resource that affects their physical and psychological well-being (Warr and Nielsen, 208). During the lockdown period and when confronted by the phenomena of COVID-19, employee productivity was one of the crucial determinants being monitored by employers. During the lockdown period, employees were urged to work remotely, which delivered a new set of challenges to working productively. For example, some were distracted by family members, children, or neighbors, which led to unhealthy lifestyles among workers and work stress.

According to Tongchaiprasit and Ariyabuddhiphongs (2016), work stress refers to a situation in which work requirements exceed an employee's capability, resources, and needs. Moreover, a study by Karatepe et al. (2018) mentioned that more than half of all employees underwent intense stress, and two-thirds encountered difficulties in focusing on their jobs due to stress. Stress cannot be neglected as it will also affect others. Besides, stress can bring about other individual health issues, which could exacerbate existing mental health issues (Tongchaiprasit et al., 2016). Poor housing quality creates depressive symptoms among workers and significantly affects the working performance of a company or organization. Working in isolation while also socially isolated in a small, limited place and workspace, along with difficulties in distinguishing between leisure and working time, tends to result in poor worker productivity

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(GGöcer et al., 2019). This reduced productivity impacts physical health and health inequalities (Mezzoiuso et al., 2017). Employees performing poorly tend to exhibit, for instance, burnout, mental exhaustion, and a lack of enthusiasm, factors leading to poor health. Therefore, these factors are ultimately translated into employee productivity and performance. To address the problem, Akgunduz (2015) suggested reducing the workload and increasing the attention turnover.

RESEARCH METHODOLOGY

This research design features a quantitative method and a survey technique, while the analysis was conducted using SEM-PLS. As stated by Amaratunga et al. (2002), quantitative research helps the researcher to establish statistical evidence for the strengths of relationships between exogenous and endogenous constructs. Furthermore, Cresswell (1994) proposed that quantitative research delivers a level of valid and reliable outcomes that could be applied by other researchers. Bowen (2006) described quantitative research methods as reducing data to quantifiable pieces of facts and figures, which are examined statistically to create generalizations from the survey group to other individuals.

The survey technique used in the current study employed questionnaires as the research instrument. These were first shared with a panel for validation, after which the questionnaires were distributed to the respective respondents. The questionnaires were distributed physically and following strict SOPs. Regarding the sample, the authors distributed about 250 questionnaires and collected 128. G-power was used to determine the appropriate sample size for analysis. The sampling method used was purposive sampling. This sampling method involves selections being made based on the researcher's knowledge of the population and which type of sample would best suit his or her goals (Wolfer, 2007). This is an especially useful technique if the population of interest can be easily identified but is not easily listed (Wolfer, 2007).

Since this study involved pre-determined criteria, such as lower-income (B40) households, purposive sampling was a suitable approach. The analysis started with the data being screened and coded accordingly. IBM SPSS and Structural Equation Modeling (SEM)-PLS were used to analyze the data. To identify whether the model fitted the data, several goodness-of-fit indices were used during SEM. Following the test for model fitness, reliability and validity tests were also conducted to assess the consistency of the measuring instrument used to measure the concept it was measuring and how well that instrument was developed to measure the concept it was intended to measure.

SEM, which has been employed for a relatively long time, has recently become one of the most widely used statistical tools in certain areas of social science research (Hair et al., 2007). Basically, SEM can be described as a statistical methodology that takes a confirmatory (hypothesis testing) approach to

analyze proposed study frameworks. SEM tests the entire model, not just part of it. The complete model is therefore either accepted or rejected; in other words, the model either fits the data or does not. SEM was selected for this study for several reasons. First, it permits the operation of multiple indicators to measure constructs and condense measurement errors by utilizing multiple indicators for each latent variable (Bryne, 2013). Second, it can assess causal relationships between multiple constructs concurrently (Jöreskog & Sörbom, 1981). Third, SEM can generate awareness of the direction of the study constructs, and it can test how, and to what extent, variables affect each other (Judge & Ferris, 1993).

RESULT AND ANALYSIS

The profile of the respondents to this study represented 128 individuals from the B40 community living in Pulau Pinang. The largest proportion of respondents were Malay (96%), while the remainder were Indian (4%). The majority of the respondents were between 41 and 50 years old (55.5%). Most had at least secondary education. About 56.3% of the respondents had Certificate or Diploma qualifications and, surprisingly, some respondents had Master's degrees (10.2%). Most owned their own house (57%) and one-third were renting. Sadly, more than half of the respondents had lost all their income during the MCO, while over 30% of the respondents had lost from 10% to more than 30% of their monthly income. Nearly 60% of the respondents had missed more than three months of loan/rental repayments but 37% had been able to make their loan payments as usual. Due to the difficulties of maintaining their loans and rental expenditure, 54% had been forced to move to their parents' house and nearly 10% had sold their houses.

The majority of the respondents lived in households of four to six people and about half were living in units measuring 601 to 700 sqf.

Table 1: Respondents' Profile

Variables	Category	Sample size [%]
Race	Malay	124 [96.9]
	Indian	4[3.1]
Gender	Male	43 [33.6]
	Female	85 [66.4]
Age	19-30 years	5 [3.9]
	31-40 years	32 [25.0]
	41-50 years	71 [55.5]
	51-60 years	16 [12.5]
	Others	4 [3.1]

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| Variables	Category	Sample size [%]
Education	Secondary School	26 [20.3]
	Certificate/Diploma	72 [56.3]
	Bachelor's degree	17 [13.3]
	Master's	13 [10.2]
Ownership of the House	Renter	43 [33.6]
	Own house	73 [57.0]
	Other	12 [9.4]
Income Loss	10-30 percent	27 [21.1]
	more than 30 percent	20 [15.6]
	total loss	69 [53.9]
	others	12 [9.4]
Ability to Pay Loan/Rental	paid as usual	47 [36.7]
	missed 1-3 months	2 [1.6]
	missed more than 3 months	73 [57.0]
	others	6 [4.7]
Due to the difficulties of making my loan/rent payments, I	sold my house	12 [9.4]
	moved to a smaller house	6 [4.7]
	move to my parents' house	69 [53.9]
Number of Occupants	1-3	57 [44.5]
	4-6	66 [51.6]
	7-9	5[3.9]
Floor Space	less than 500 sqf	19 [14.8]
	about 500-600 sqf	18 [14.1]
	601-700 sqf	61 [47.7]
	701-1000 sqf	12 [9.4]
	more than 1000 sqf	18 [14.1]

N=128
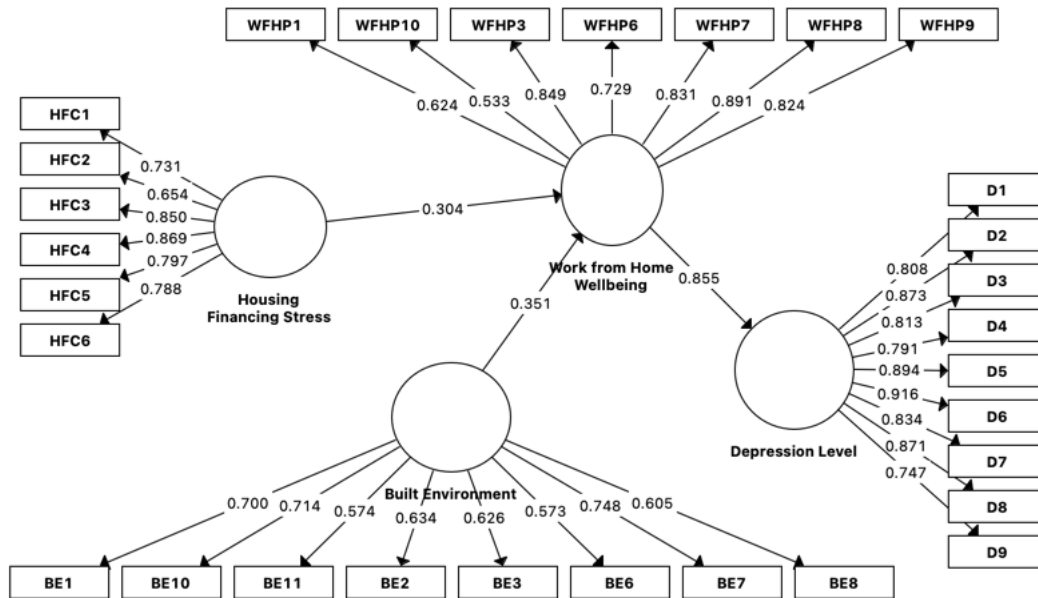
Figure 1: Measurement Model

In the next section, the measurement model is reviewed. According to Hair, Matthews, Matthews, and Sarstedt (2017), convergent validity is the degree to which indicators of a specific construct converge or share a high proportion of variance in common, as shown in Table 2. The convergent validity of the study was assessed using the indicators proposed by Sarstedt et al. (2022). They proposed having an average extracted variance (AVE) greater than 0.5, a cut-off value for factor loading of 0.5, and all composite reliability (CR) values greater than 0.7. All the items had loadings of 0.5 or higher. Table 2 shows that the AVE was greater than 0.5 and the CR was greater than 0.7. At this point, it was determined that the structure met the criteria for both reliability and convergence validity.

Table 2: Measurement Results.

Construct	Item	Loading	CR	AVE
Housing Financing Costs (HFC)	Other than government financial initiatives, most of the time I depended on my parents to pay my home loan/rental costs (HFC1)	0.539	0.906	0.621
	Other than government financial initiatives, most of the time I depended on my friends to pay my home loan/rental costs (HFC2)	0.648		
	Other than government financial initiatives, most of the time I depended on a third party (e.g., NGO or Zakat) to pay my home loan/rental costs (HFC3)	0.731		
	I pawned all my jewelry to pay my home loan/rental costs (HFC4)	0.839		
	I skipped paying insurance to pay my home loan/rental costs (HFC5)	0.771		
	I used my savings to pay my home loan/rental costs (HFC6)	0.736		
Built Environment (BE)	I felt comfortable living with the other residents when WFH (BE1)	0.517	0.846	0.541
	I felt cosy with the air ventilation in my home when WFH (BE2)	0.759		
	I felt relaxed with the artificial lighting in my house when WFH (BE3)	0.838		
	I felt relieved WFH because my neighborhood crime was low (BE6)	0.647		
	During WFH, most of the time when looking at the screen, my eye-line was level with the address bar (BE7)	0.605		
	During WFH, most of the time my elbow was fully flush with my table height (BE8)	0.753		
	(For office chair users only) During WFH, most of the time I put a cushion under my buttocks to raise my hips (BE10)	0.600		
	During WFH, most of the time I took a 20-second break every 20 minutes and moved 20 feet away (BE11)	0.500		
Work from Home Well-being (WFHP)	I lacked the energy to be consistently productive when WFH (WFHP1)	0.576	0.905	0.584
	I became easily irritable/impatient when WFH (WFHP3)	0.824		
	I often felt like leaving my work when WFH (WFHP6)	0.637		
	I often felt hopeless when doing my job during WFH (WFHP7)	0.740		
	I felt bored WFH (WFHP8)	0.867		
	I had sleeping problems when WFH (WFHP9)	0.763		
	I felt satisfied with my job accomplishment when WFH (WFHP10)	0.575		
Depression Level (D)	I had little interest in doing things when WFH (D1)	0.834	0.956	0.706
	I felt down, depressed, or hopeless when WFH (D2)	0.839		
	I had trouble falling or staying asleep, or I slept too much, when WFH (D3)	0.817		
	I felt tired/had little energy when WFH (D4)	0.751		
	I had a poor appetite or I overate when WFH (D5)	0.825		
	I felt bad about myself or felt like a failure when WFH (D6)	0.845		
	I had trouble concentrating on things when WFH (D7)	0.798		
	I moved or spoke so slowly when WFH (D8)	0.801		
	I felt useless when WFH (D9)	0.664		

Deleted Items: WFH (2,4,5); BE (4,5,9)

As a result, the model's discriminant validity was investigated further. Fornell and Larcker (1981) proposed that items should load more strongly on their constructs than on the other constructs in the model. Furthermore, the average variance (AVE) shared by each construct and its measures should be greater than the variance shared by the constructs themselves. Its measures must be greater than the variance shared by the construct and the other constructs. The discriminant validity of the study is shown in Table 3.

Table 3: Discriminant Validity

	1	**2**	**3**	**4**
1. Built Environment	0.641			
2. Depression Level	0.53	0.84		
3. Housing Financing Stress	0.548	0.519	0.788	
4. Work from Home Well-being	0.515	0.855	0.469	0.764

Following that, interaction terms were added to represent the quadratic effects. The bootstrapping results from 5,000 samples and the absence of significant changes revealed that none of the non-linear effects were significant. The proposed hypotheses were then examined. Between the constructs, three direct hypotheses were developed. T-statistics for all the paths were generated using the Smart PLS 3.0 bootstrapping function to test the significance level. After examining the model's validity and reliability, it was critical to assess the direct hypotheses.

Table 4: Hypothesis Testing

	Std Beta	Std Error	t-value	p-value	BCI LL	BCI UL	R^2
Built Environment -> Work from Home Well-being	0.351	0.068	5.162	0.000	0.241	0.486	0.729
Housing Financing Stress -> Work from Home Well-being	0.304	0.082	3.706	0.000	0.163	0.457	
Work from Home Well-being -> Depression Level	0.855	0.025	33.767	0.000	0.805	0.908	

Three relationships have *t*-values >2.33 and are thus significant at 0.01 (Table 4). The predictor of Built Environment (β=0.351, *p*<0.01) shows a stronger relationship with Work from home well-being compared to Housing financing stress (β=0.304, *p*<0.01), yet both demonstrate positive and significant relationships with Work from home well-being. In addition, the relationship between Work from home well-being and Depression level was assessed

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(β=0.855, p<0.01), the result of which was significant. Therefore, to conclude, all the hypotheses (H$_1$-H$_3$) were supported.
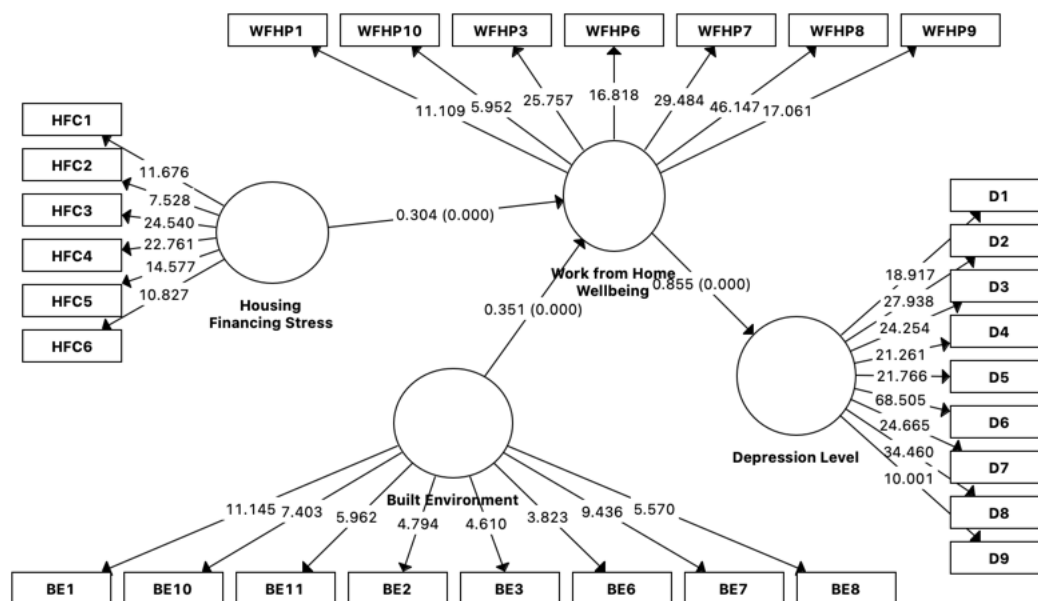

Figure 2: Structural Equation Modeling (SEM)

DISCUSSION

This study aimed to examine the impact of housing financing costs and the built environment on work from home productivity. Consequently, this study was extended to capture the magnitude of the impact of WFH productivity on depression levels. The setting of this research was the Penang area and the respondents were from a B40 (lower-income) background.

Based on the findings, the majority of the respondents who were depressed were between 31 and 50 years old, which is understandable as this study applied to those of working age. When the pandemic peaked between March 2020 and March 2021, and during the imposition of the movement control order, many workers shifted their working conditions from offline to online. While working from home was openly accepted in the early implementation of the MCO, the elation was not long-lasting as the government continued to prolong the restrictions. The lockdown process was extended from a period of only three months to one of around nine months (the first and second phases). The MCO then continued until the end of 2021 (the third phase). The Malaysian government gradually eased the restrictions from the start of 2022, leading to

considerable widespread relief. Finally, on 1 April 2022, the government declared that the country was entering the endemic stage and most offices came 'alive', as they had been during the pre-pandemic period.

Although Malaysia has entered the endemic stage, it is believed that the impact of the lockdown situation on the well-being of employees working from home (WFH) has left a significant imprint. Due to the probability of repeating stressors, the impact of quarantine-related stress on levels of depression and mental health is likely to be exacerbated among persons with pre-existing mental illnesses and those susceptible to developing a mental disease. Before examining the impact of WFH on depression levels, the authors suggest that the built environment and housing financing costs influenced WFH productivity levels.

According to the findings, the built environment has a stronger link (compared to housing financing costs) with WFH productivity (refer to Table 4; $\beta=0.351$, $p=0.01$). The relationship between the built environment and WFH is positive, as had been expected. This implies that the environment in which the respondents live influenced their ability to perform work productively. This result can be confirmed by examining the prior findings of Dunn and Hayes (2000), who stated that investing in a comfortable home to meet one's needs has a direct impact on one's productivity at work. Based on the top loading results (Table 2), the respondents of this study suggested that they felt comfortable working in an environment with artificial lighting (0.838), good air ventilation flow (0.759), and when they could adjust their sitting position to ensure their elbows were fully flush with the table height (0.753).

A positive and significant link was also identified between home financing costs and WFH production (refer to Table 4; $\beta=0.304$, $p=0.01$), which suggested that higher housing financing costs caused WFH productivity to increase. This is somewhat interesting because the authors expected this relationship to be negative. Nonetheless, it is believed that the pandemic situation played a major role in this result. During the COVID-19 pandemic, many companies suffered revenue losses, employee numbers were reduced, profits were nearly nil, and businesses had to cut operational costs to stay afloat. The pandemic was a stressful period and, based on the current findings, nearly 70% of the respondents lost more than 30% of their income. In addition, nearly 60% missed more than one month of their loan repayments. This unfortunate scenario could indicate that the stress of managing debts to financial institutions caused employees to work harder to ensure that they could continue earning money to survive. The majority of the respondents had pawned their jewelry to make loan or rent payments during the epidemic.

To address the second objective, that is, to determine the impact of WFH productivity levels on depression, a possible positive relationship was

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anticipated. Based on the findings (Table 4; β=0.855, p=0.01), the relationship was found to be both positive and significant, which implies that higher WFH loads contributed to greater levels of depression among the respondents. This study is supported by previous findings by Tongchaiprasit and Ariyabuddhiphongs (2016), who stated that job stress occurs when an employee's capability, resources, or work demands exceed their capability, resources, or needs. In fact, according to a study by Karatepe et al. (2018), over half of all employees experience acute stress, while two-thirds have difficulty focusing on their duties because of stress.

The measurement results (Table 2) demonstrate that the majority of the respondents to this study felt gloomy, dejected, and hopeless when working at home (0.839), while they became easily irritable and impatient while doing so (0.824). A higher loading of 0.763 indicated that the respondents had sleeping problems when WFH. In terms of depression, many felt bad about themselves or felt like a failure during the lockdown period (0.845). They felt down, depressed, and even hopeless when WFH (0.839), apart from having lost interest in doing other activities.

Indeed, the reality of WFH is not as efficacious as many had believed in the pre-pandemic era, perhaps due to the enforced lockdown situation. Housing financing costs and the built environment were found to have positive impacts on WFH productivity but at the expense of increasing depression levels among B40 individuals.

CONCLUSION

Before COVID-19 forced the world to stay indoors, people tended to express optimistic ideas about working from home (WFH). It was imagined WFH could help to alleviate the work-life imbalance as it offers a flexible approach to performing both office tasks and household errands. This idea, however, was challenged when countries imposed lockdowns or, as in Malaysia, mobility was controlled in various phases. As life had to continue, office work changed with the introduction of new practices such as WFH, an idea welcomed by many. Unfortunately, the lower-income group may not share this contentment since their work is generally labour-based, such as selling at food stalls. Thus, the mobility restrictions hampered their capacity to make an income, with significant numbers losing all their income. Their work nature must be altered to suit WFH conditions.

Aiming to examine the impact of housing financing costs and the built environment on WFH productivity levels, the authors extended this relationship by observing how WFH productivity levels influenced levels of depression. In summary, although housing financing costs and the built environment were seen as positive contributors to productivity levels, this positivity had the drawback of

being linked with higher levels of depression. WFH might have caused the respondents to face desperate situations, with the need for an income to pay home loan or rental costs pushing them to work harder. Thus, despite living in smaller spaces (700 – 800 sqf) and with an average of five to six persons living in a unit, the respondents were forced to utilize their living areas to work. This is a possible reason for the positive relationship between the built environment and productivity levels. The stress of experiencing these factors, however, translated into higher depression levels, with the results showing a negative relationship. This is an alarming reality on which policymakers must focus.

This study, however, has some imperfections, indicating that more research is warranted in this field. Future studies could investigate the topic using more respondents to gauge a better estimate. Meanwhile, future researchers could concentrate on female respondents to measure the influence of depression on the household.

ACKNOWLEDGMENT:
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