

Research Article

Effect of Teleworking on Working Conditions of Workers: A Post-COVID-19 Lockdown Evaluation

Moses Segbenya ¹ and Edna Naa Amerley Okorley ²

¹Department of Business Studies, College of Distance Education, University of Cape Coast, Cape Coast, Ghana

²Department of Human Resource Management, School of Business, University of Cape Coast, Cape Coast, Ghana

Correspondence should be addressed to Moses Segbenya; moses.segbenya@ucc.edu.gh

Received 28 April 2022; Revised 18 June 2022; Accepted 23 June 2022; Published 16 July 2022

Academic Editor: Zheng Yan

Copyright © 2022 Moses Segbenya and Edna Naa Amerley Okorley. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

This study examines the effect of teleworking on working conditions of workers, a post-COVID-19 lockdown evaluation. The quantitative approach and descriptive cross-sectional research design were adopted. A sample of 265 participants from both public and private sectors were sampled for the study. Data was collected with a self-administered questionnaire and analyzed with partial least square structural equation modelling (PLS-SEM). The study found that teleworking/virtual working significantly affects participant's working conditions during a pandemic. Furthermore, workplace safety and work schedules were also found to be significantly influenced by teleworking and eventually influencing the working conditions of teleworkers during a pandemic. The two most important predictors of decent working conditions for workers during the pandemic found by this study were teleworking and work schedules. Therefore, it was recommended that employers provide data and logistical support and training for workers to effectively use virtual/teleworking to enhance working conditions and eventually workers' productivity during any pandemic.

1. Introduction

The emergence of the COVID-19 pandemic in December 2019 has disrupted the everyday way of living and the world of work [1, 2]. Apart from being a global health crisis, the COVID-19 also poses a major global socioeconomic challenge to skills training [3, 4] and work processes [3]. The impact of COVID-19 on workers' socioeconomic life stem from measures such as full or partial lockdown, restriction or ban on large gathering, practising social distancing, among others, to curtail the spread of the virus. The International Labor Organisation (ILO) revealed that the safety protocols have affected "about 2.7 billion workers, representing approximately 81 per cent of the global workforce, especially unprotected informal workers" [4].

The impact of the COVID-19 on the systems of the national and global levels (see Figure 1) will undoubtedly influence organizations and their workers' fortunes. The social system view of this study posits that individual job

applicants from the microsystem enter the job market, which is the mesosystems for employment and are absorbed into the exosystems where employers and organizations exist. It is very important to note that the first three systems—microsystem, mesosystem, and exosystem—are all overlaid by the macrosystem comprising economic, political, sociocultural, and technological factors at the national and the international levels. This means that the effect of the COVID-19 on the political, economic, social, and technological (PEST, Figure 1) system at the national and global levels (macrosystem) directly influences organizations and their workers at the exosystem (see Figure 1).

The International Labor Organisation [1] found a reduction in the quality and quantity of jobs available due to the predicted reductions in economic activity. Work processes also stand to suffer some changes as well. The entire labour market in terms of onboarding, maintenance, to separation at both national and global levels, has been seriously hit by the outbreak of the COVID-19 pandemic [5]. In their view,

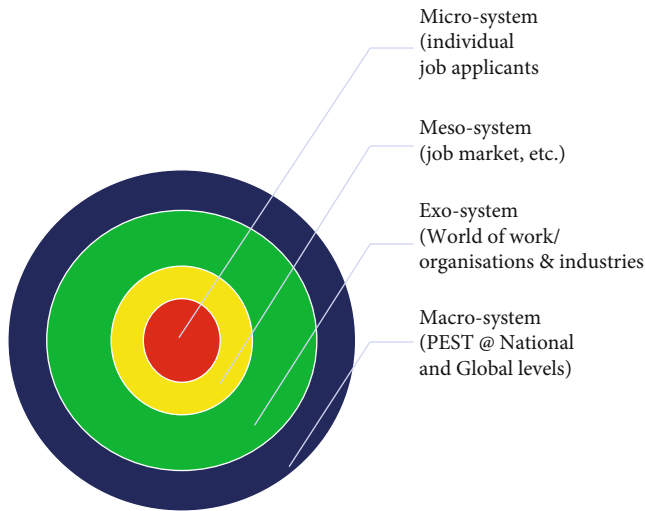


FIGURE 1: The scaler chain effect of COVID-19 on the globe, nations, and workers.

this, has to some extent, affected work and workplace processes through the changes that institutions have brought onboard, which is termed as ‘the new-normal’ [6]. That notwithstanding, [4] found that some industries/sectors, including health and the telecommunication sectors benefited from the COVID-19 while others, such as the tourism and transport sectors, negatively suffered from the pandemic. The effect of COVID-19 on the world of work can result in emergent changes in work practices in terms of working from home, reduced working hours and days, reduced remuneration, and a high level of job insecurity [7]. Additionally, COVID-19 has changed the conditions of work and has increased employers’ responsibilities towards workers [8] and could result in loss of revenue for organizations and job losses if not managed well.

One of the methods of ensuring that COVID-19 protocols are adhered to while employment is maintained is the introduction of virtual or teleworking arrangements. Virtual or teleworking enables work to be done away from the office at the convenience of the worker. Virtual or teleworking relates to remotely working from home and has been extensively used in several countries and cultures, especially during the emergence of the COVID-19. [9] found that developed economies, including the United States of America, has around 3.7 million employees who worked virtually half of the time or more, equating to 2.5% of their workforce. Furthermore, [9] posits that teleworking was found to be typically widespread among managers and administrative workers operating in the professional services and finance industry. Virtual or teleworking is also recorded in developing economies, such that about 2.7% of the workforce consists of teleworkers [9, 10] established that multinational companies operating in the service sector predominantly used teleworkers for some or part of their operations. The variety and scale of telecommuting vary across countries. However, mass-scale telecommunication is still an emerging concept and has recently been adopted due to the spread of the COVID-19 pandemic, as mentioned earlier [9].

Virtual or teleworking hinges seriously on internet connectivity and online tools for success and growth. The internet is the driving force behind the concept of working from home. [11] has identified several online tools for telecommuting or working virtually in the European Union and the United States. These were Skype, Google Talk, and Gizmo, among others. Other online tools for teleworking could include Zoom, Google cloud services, Google meet, WhatsApp group platforms, and emails. Online presentations have been done on WebEx, Go To Meeting, and Live-Meeting for teleworkers. For project management, Basecamp, Active Collab, and Quick Base have been extensively used. Finally, Google and Yahoo Calendars have been used as time management applications to assign remote teams activities.

1.1. Study Gap. Most of the existing studies on COVID-19 are conceptual papers [1, 12, 13]. Meanwhile, empirical studies could provide deeper and more relevant information on how virtual working during the pandemic affects workers’ life. The study of [9] was on working from home during the COVID-19 pandemic: satisfaction, challenges, and productivity of employees. [14] also focused on an overview of flexible working arrangements and organizational performance. All these studies did not consider the effect of teleworking on the general working conditions of workers during the COVID-19 pandemic. Empirical studies on the effect of COVID-19 on work have also been limited to employability skills [4] and health and safety [1, 15]. Thus, there are limited empirical studies on the effect of COVID-19 on the world of work in terms of the role of virtual or teleworking on workers’ working conditions. There is, therefore, a lacuna in literature in terms of the lack of empirical studies on the effect of COVID-19 occasioned virtual working on workers’ working conditions. For this reason, this study seeks to add to the literature on human resource management, teleworking and work-based learning, pandemic, and employment by examining the effect of virtual/teleworking on the working conditions of workers, a post-COVID-19 lockdown perspective. The study is guided by six hypotheses such as the following:

- (1) H_1 : teleworking/virtual working during the COVID-19 pandemic statistically and significantly relates to workers’ working conditions
- (2) H_1 : teleworking/virtual working during the COVID-19 pandemic statistically and significantly relates to workplace safety for workers
- (3) H_1 : teleworking/virtual during the COVID-19 pandemic statistically and significantly relates work schedules for workers
- (4) H_1 : online tools used during the COVID-19 pandemic statistically and significantly relate to teleworking among workers
- (5) H_1 : workplace safety during the COVID-19 pandemic statistically and significantly relates the working condition of workers

- (6) H_1 : work schedules during the COVID-19 pandemic statistically and significantly relate to the working condition of workers

2. Literature Review

This section focuses on the theoretical and conceptual perspectives. This study is underpinned by the self-determination theory (SDT). Apart from the fact that SDT is one of the contemporary theories of motivation and represents the current state of thinking in explaining employee motivation [16], several other studies have reiterated the importance and efficacy of intrinsic motivators against extrinsic motivators [16–18]. Another justification for using SDT for this study was that the perception of self-autonomy guaranteed under virtual or teleworking arrangements during the emergence of the COVID-19 period could influence employees' work performance and job satisfaction. This influences the general organizational performance, which is an axiom of self-determination theory. The self-determination theory as a theory of motivation is hinged on the relevance of intrinsic motivation and the harmful effects of extrinsic motivation. The theory is of the view that workers' freedom to perform a task or to have control over their actions motivates them to perform better as compared to performing under obligations [19].

The self-determination theory also proposes that in addition to being driven by a need for autonomy, such as part-time working and freelancing, people seek ways to achieve competence and positive connections to others. This theory extols the internal control of one's action rather than the effects of externalities. Though the original authors of the self-determination theory [9, 19] acknowledge that extrinsic rewards such as verbal praise and feedback about competence can improve even intrinsic motivation under specific circumstances; the central theme of self-determination theory is that rewards and deadlines diminish motivation if people see them as coercive [16]. Some researchers suggest that employees who work toward organizational goals for intrinsic reasons are usually more satisfied with their jobs and perform better because they have a better fit into their organization [9, 20].

The shortcoming of the SDT for this study is that as much as self-determination and intrinsic motivation will influence performance during virtual or teleworking arrangements during a pandemic, there possibility of work-life conflict has not been considered. Hence, this study used the second theory of spillover to argue that working from home as a virtual or teleworking arrangement during a pandemic has the propensity to influence work-life challenges. This is because workers generally have family and personal goals to work on. Bringing work schedules home and combining work and life responsibilities while working from home could also affect productivity and employee performance.

Spillover theory was postulated in 1979 by Piotrkowski [9]. The theory actually talks about work and family life. The author advocated that job-related factors and family-related factors should be in equilibrium for employees to be productive, bring about customer satisfaction, have job

satisfaction, and control their employee turnover. The theorem was to control work-related stress or family life-related stress so that it does not spill over to work or family life. [21] supported the theory and added other factors that determined employee performance, such as attitude, stress, and emotions, and said that work-life balance is vital, but the later issues should be controlled. This means that social imbalance affects the work efficiency and effectiveness of an individual employee. This theory is important to the study because it addresses the issue of work-life balance.

2.1. Conceptual Perspective. COVID-19 abruptly suspended the normal routines associated with work and has now propelled migration of work unto online or virtual platforms so that employees could work from home (see Figure 1). Working from home used to be an option for workers, but COVID-19 has now made it a compulsion for workers due to its related safety restrictions. Meanwhile, working from home comes with associated challenges of attending to family and domestic issues while working, keeping confidential work issues while working from home, reliable internet connectivity, internet data, and participating in virtual teams [22].

The emergence of the COVID-19 has also introduced other health [23] and safety issues at the workplace (see Figure 2) [24]. Thus, the employer's responsibility for providing a safe working environment has become more demanding than before [5]. The additional responsibilities in terms of workplace safety pose by the COVID-19 include the provision of hand sanitizers, spraying work surfaces and restrooms, and increasing workspaces for practising social distance. These burdens can be reduced if employers introduce virtual working to augment the existing work arrangement so that workers can operate away from the office [15].

The general conditions at workplaces have also been altered with the emergence of the COVID-19 (see Figure 2). It is possible that employers attempt to reduce operational costs and stay "afloat"; their workers might have their employment status changed from permanent to temporary status. It is also possible that workers will experience high workloads with reduced working hours and days due to attempts to introduce shift systems and leaves to ensure social distancing at the workplace [15]. Change in work status from permanent to temporary status for workers could directly affect some workers' remuneration and job security during the COVID-19 era. Despite the change in the conditions or work, virtual working has a critical role to play in ensuring that workers do not finally lose their jobs [24].

2.2. Challenges with Teleworking. Working from home is not without some challenges, despite the benefits enumerated in the background of the paper. Crossing over from work to home and multiple temporal, psychological and physical boundaries [25] can come with several challenges because telecommuting changes the traditional boundaries between work and non-work. Key among these challenges is the possibility of increased work-life conflict against workers' work-life balance, resulting in undesirable consequences, especially for married couples [9, 26].

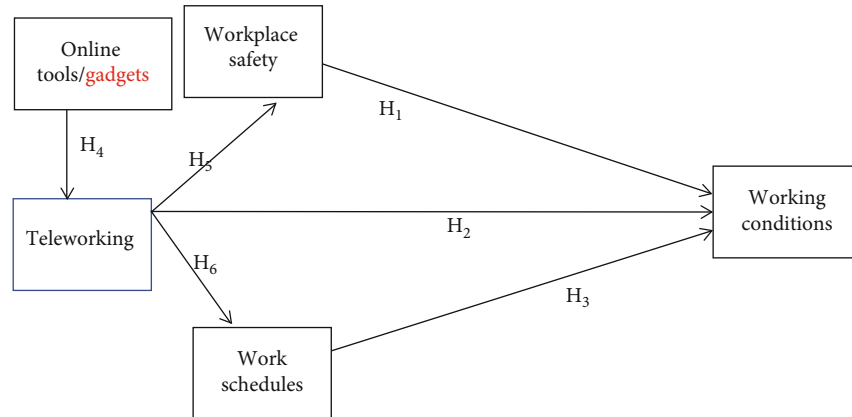


FIGURE 2: Conceptual framework showing the effect of the independent variables on the study's dependent variable.

Another challenge identified by [27] is that teleworkers work for more hours per week, especially because they do not commute to work. This is essential because the physical boundaries between home and work are often nonexistent as homes are the most common off-site work location for teleworkers. The excessive working hours among teleworkers can be stressful and challenging for them, coupled with isolation from colleagues and family members while working from home. Thus, the altered physical, temporal, and psychological boundaries essential to remote working pose challenges to traditional jobs. The possibility of increased domestic violence among couples during teleworking is also a possible challenge. The resultant effect of all these challenges on employee performance and organizational productivity, in the long run, might suffer a decline if not managed well. All these are yet to be identified or otherwise in this present study.

2.3. Working Conditions and Productivity Associated with Teleworking. Working conditions cover a wide scope, including rest periods, hours of work, work schedules, remuneration, and physical and mental demands existing in the workplace [28]. Teleworking can alter working conditions for workers dramatically depending on how it is arranged and managed. Thus, proper teleworking management with decent or better working conditions can serve as a panacea for higher productivity among teleworkers during and after pandemics. Meanwhile, productivity among teleworkers is greatly influenced by self-efficacy and intrinsic motivation among workers while working from home. Self-efficacy relates to a person's beliefs about his chances for effectively fulfilling specific responsibilities. Superior productivity and performance highly correlate with high self-efficacy among teleworkers and nonteleworkers [9, 29–33].

2.4. Methodology. The positivist perspective with a quantitative approach and specifically the descriptive research design was adopted for this study. The design was adopted due to its ability to describe elements that influence successful distance education and how these elements or factors relate to achieving a successful distance education for learners [24]. The snowball sampling techniques were adopted to draw

265 respondents from Ghana for the study. The justification for using this technique stems from the fact that COVID-19 restriction on public gathering; the introduction of shift system at workplaces and the fact that some workers were working away from the office made it very difficult to meet the respondents face-to-face. Thus, the snowball sampling technique was deployed so that a respondent could forward the Google form softcopy version of the questionnaire to other respondents whose whereabouts were unknown to the researcher [5].

2.5. Measurement of Variables. Work schedules relate to employees' workload and how and where the job can be done. Work schedules in this study were measured with four items or questions as indicated in section C of the questionnaire found in the appendix (available here). All items were measured on a four-point Likert scale. The second independent variable of the study teleworking means the opportunity for workers to perform their jobs virtually and away from the office and report same. Teleworking was measured with five items/questions, which were measured on a four-point Likert scale as can be found in question numbered 13 in part B of the questionnaire in Appendix A. Online tools, the third latent variable relates to the use of online platforms and gadgets to perform job-related activities and report same to management. Seven items such as email, WhatsApp, phone calls, Zoom and Skype virtual meeting platforms, computers, and internet data were used to measure online tools. The seven items were measured on a three-point scale as shown in question 16 in part B of the questionnaire. Workplace safety, the study's last independent variable, was measured with thirteen questions or items rated on four-point scale. Details of the items are presented in question ten of part B of the questionnaire. The exogenous variable of the study working conditions is defined in this study to mean the physical and mental demands existing in the workplace. Working conditions were measured with nine questions rated on a four-point scale as displayed in question seventeen (17) in part C of the questionnaire.

The data collection instrument was a questionnaire (Google form softcopy version) with both open (coded quantitatively for the analysis) and close items. Responses

for open-ended items were written down, numbers were assigned to them, coded and entered into the database as quantitative variables for analysis. Coding for quantitative items are displayed in the questionnaire found in the appendix. The questionnaire was divided into four parts: parts one, two, and three, respectively, focused on demographic characteristics, workplace safety, and teleworking or virtual working. Part four also addressed issues on general conditions of work. Data collection was done from June 2020 to February 2021. Identified respondents received a soft copy of the Google form questionnaire through WhatsApp and further forwarded the same to others for their responses.

Focus group discussion and expert review were used to deal with ambiguity before finalizing the research instrument. Additionally, exploratory factor analysis was employed to fine-tune the questionnaire based on pretest data for the purposes of removing items that loaded below 5 threshold based on a suggestion from literature [34]. Data gathered through the questionnaire was converted into a comma-separated value (CSV) after entering into the SPSS software version 21. For model analysis, the CSV file was then exported into Smart-PLS software version 3.6.3. Methods employed to address the common method bias (CMB) included exploratory factor analysis (EFA) and principal component analysis extraction methods. Additionally, ensuring that the questionnaire addresses respondents' privacy and the creation of separate sections for measured items were used to address common method bias. All ethical considerations, such as informed consent, privacy, freedom to opt-out despite starting the process, and anonymity, among others, were discussed with respondents and agreed upon before data was collected.

3. Results and Findings

The first part of the results section looked at the demographic characteristics of the respondents, and the results can be seen in Table 1. The results suggest that most respondents (56.2%) were male participants and (43.8%) were 30-39 years old. Additionally, most of the respondents (74.4%) were public sector participants, and 90.6% were still employed during the COVID-19 pandemic. It is important to note that only Ghanaian workers who were engaged in teleworking were used for the analysis of this study.

3.1. Measurement and Structural Model Analysis. The model's preliminary evaluation was done using the PLS-SEM (partial least square structural equation) algorithm for factor analysis (CFA). To enhance the model's strength, only items loaded with a value of 0.70 and above for the respective factors or variables were used. Construct's reflective modelling is used to ensure that items removed with a loading value below 0.70 do not pose any problem to the structural model [35, 36]. Figure 3, therefore, shows items that were accepted due to their higher and acceptable values.

3.2. Internal Consistency Measure for the Model. The model's reliability and convergent discriminant validity were used to test the strength of the PLS-SEM model's using Cronbach's alpha, composite reliability, and average variance extracted

TABLE 1: Demographic characteristics of respondents.

Demographic characteristics	Frequency	Percent
<i>Age</i>		
20-29 years	32	12.1
30-39 years	128	48.3
40-49 years	77	29.1
50-59 years	21	7.9
60 and above	7	2.6
Total	265	100.0
<i>Gender</i>		
Male	149	56.2
Female	116	43.8
Total	265	100.0
<i>Employment classification</i>		
Public sector	197	74.4
Private sector	68	25.7
Total	265	100.0
<i>Status of employment</i>		
Still in employment	240	90.6
Lost my employment	14	5.3
Status changed from permanent to temporary	6	2.3
Found a new job	5	1.9
Total	265	100.0

Source: Field survey (2021).

(AVE) [36]. Criterion of the Cronbach alpha and composite reliability value of 0.70 and above, as well as a value of 0.50 and above, were used as thresholds. From Table 2, it can be seen that the model achieves reliability since values obtained for Cronbach alpha were between 0.773 and 0.863. The composite reliability value for all four factors of the study was between 0.869 and 0.901. This suggests the high reliability of the factors of the study. The average variance estimate (AVE) used to measure the convergent validity also produced results that can be seen in Table 2. Values obtained were between 0.647 and 0.742, and they were all above the 0.50 minimum threshold, suggesting convergent validity of the factors of the study. Additionally, the variance inflated factor (VIF) was used to check the multicollinearity among the factors and the results, as shown in the table, show that all the study items obtained values below 0.30, suggesting that there was no multicollinearity threat.

3.3. Discriminant Validity. The Fornell-Lacker criterion was also checked, and the results can be seen in Table 3. The Fornell-Lacker criterion asserts that the square roots of the AVEs on a construct should be higher than its correlations with other constructs in the model. Thus, discriminant validity was attained for the results presented in Table 3 because the square roots of the AVEs on each variable were higher than its correlations with other variables in the model.

3.4. Path Analysis. The model's path significance was checked, and the results can be seen in Figure 4. The

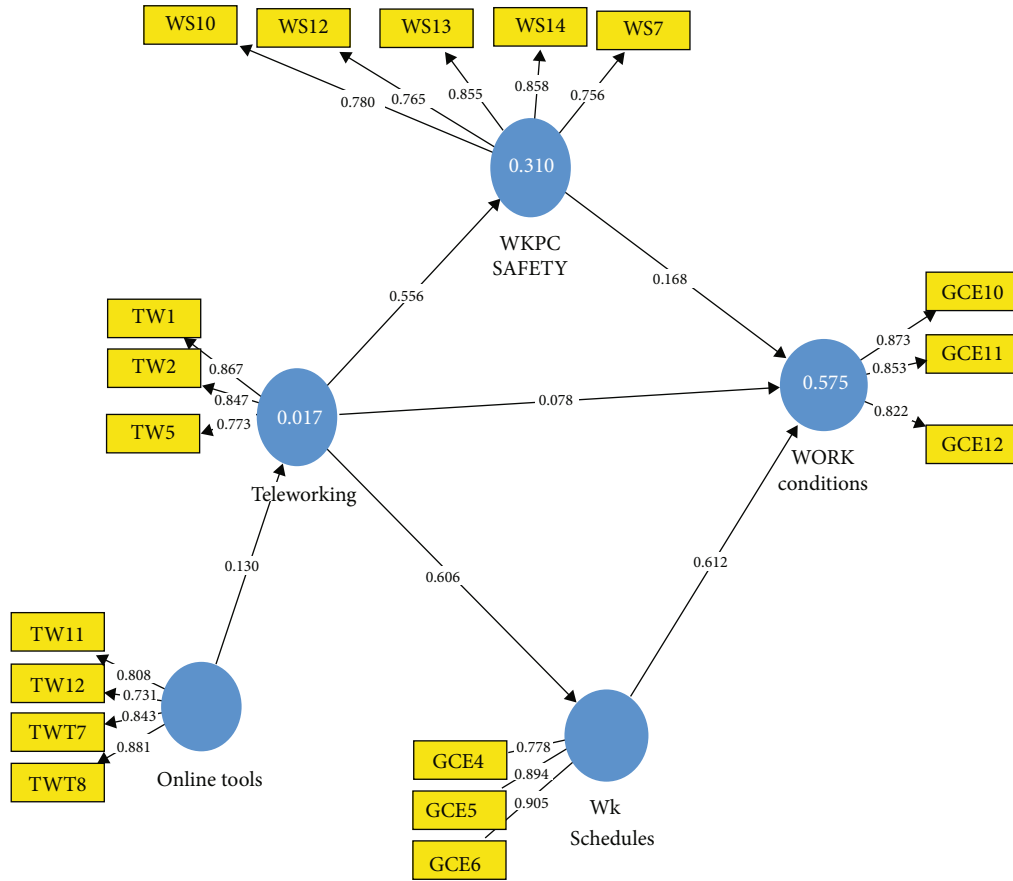


FIGURE 3: PLS algorithm for Confirmatory factor analysis.

graphical presentation in Figure 4 is in line with [35] suggestion of using a bootstrapping sequence of 5000 samples to assess a structural model.

3.5. Results of Path Analysis. The PLS path model was run to test the hypotheses of the study. The PLS path model is a method for structural equation modelling that allows estimation of complete cause-effect relationship in path models with latent or independent variables. Results for the six hypotheses guiding the study are presented in Table 4. The *R*-square supported by the adjusted *R*-square, as shown in Table 4, expatiates that the variance in the dependent variable of the study was predicted by the independent variables of the study [36]. Thus, the structural model explains about 0.575 variances in working conditions, 0.367 variances in work schedules, 0.310 variances in workplace safety, and 0.017 variances in teleworking/virtual working.

Thus, in terms of analysis of the results, as shown in Table 4 for hypothesis one of the studies which conjectured that teleworking/virtual during the COVID-19 pandemic statistically and significantly affected the working condition of participants ($\beta = 0.543, T = 11.129, p = 0.000$) and hypothesis two that connote that teleworking/virtual working during the COVID-19 pandemic statistically and significantly affect workplace safety for participants ($\beta = 0.556, T = 12.288, p = 0.000$) were all upheld.

Additionally, the third hypothesis posits that teleworking/virtual working during the COVID-19 pandemic statistically and significantly affect work schedules for participants ($\beta = 0.606, T = 12.543, p = 0.000$), and hypothesis five which posits that work schedules during the COVID-19 pandemic statistically and significantly affect the working condition of participants ($\beta = 0.612, T = 12.747, p = 0.000$) were all upheld by the findings of this study. The results mean that teleworking/virtual working plays a significant role in ensuring workplace safety, decent working conditions, and effective work schedules (comfortable workloads and reduced working hours) for participants during a pandemic. Meanwhile, the fourth hypothesis, which conjectured that teleworking during the COVID-19 is significantly affected by the usage of online tools (online gadgets) at ($\beta = 0.130, T = 1.640, p = 0.101$) was not supported by the findings of this study.

The sample mean in Table 4 is the average of the estimates from all the subsamples of the dataset drawn during the bootstrapping procedure. The sample mean is compared to the original mean or beta coefficient values. If the two deviate significantly, then there is a data or model problem. In this study, it is clear that the two values did not significantly deviate from each other, suggesting that there was no data or model problem.

3.6. Importance Performance Map Analysis (IPMA). In order to give further emphasis to the PLS estimates of the

TABLE 2: Construct reliability and validity.

	Loadings	VIF	Cronbach's alpha	rho_A	Composite reliability	(AVE)
Work conditions						
GCE10	0.873	1.996				
GCE11	0.853	1.884	0.807	0.807	0.886	0.722
GCE12	0.822	1.560				
Work schedules						
GCE4	0.778	1.478				
GCE5	0.894	2.475	0.824	0.834	0.896	0.742
GCE6	0.905	2.617				
Teleworking						
TW1	0.867	1.999				
TW2	0.847	1.964	0.773	0.774	0.869	0.689
TW5	0.773	1.327				
Online tools						
TWT11	0.808	2.107				
TWT12	0.731	1.654	0.841	0.910	0.889	0.669
TWT7	0.843	1.702				
TWT8	0.881	2.208				
Workplace safety						
WS10	0.780	1.769				
WS12	0.765	1.842				
WS13	0.855	2.388	0.863	0.871	0.901	0.647
WS14	0.858	2.563				
WS7	0.756	1.658				

Source: Field survey (2021).

TABLE 3: Discriminant validity: Fornell-Lacker criterion.

	Teleworking_	Wkpc safety	Work conditions	Wk schedules	Online tools_
Teleworking_	0.830				
Wkpc safety	0.556	0.804			
Work conditions	0.543	0.486	0.850		
Wk schedules	0.606	0.448	0.735	0.861	
Online tools_	0.130	0.072	0.014	0.018	0.818

Source: Field survey (2021).

structural model variable relationships, PLS importance performance map analysis (IPMA) was conducted. The IPMA gave additional information on the performance and relevance of each latent variable in the model [34]. While the path coefficient reveals the relative importance of one construct in explaining another, the IPMA examines the performance value for each latent variable in the PLS model. These values represent the average values of each latent score on a scale of zero (0) to hundred (100). The closer the value is to 100, the higher the performance of the latent variable. So to calculate the IPMA for the target construct, we combined the importance and performance information in the IPMA analysis by plotting the importance on the x -axis and performance on the y -axis, as seen in Figure 5. Thus, IPMA analysis helps in determining areas for improvement for organizations. [36] posited that the total effects represented the sum of direct

and indirect effects; thus, the unstandardized effects were drawn upon by the IPMA to enable a “ceteris paribus” interpretation of predecessor constructs’ impact on the target construct. This meant that the size of the total unstandardized effect increased the performance of the target construct’s performance when there was an increase in certain predecessor construct’s performance. Thus, the relevance and importance of the relationships indicated in the model were determined with the PLS IPMA analysis separately for three main dependent constructs, such as working conditions, workplace safety, and work schedules. The results can be referenced from Tables 5 and 6, respectively.

3.7. Performance Analysis for Working Condition. Analysis of the performance of the four predicting variables, as shown in Table 5, revealed that online tools had the strongest and

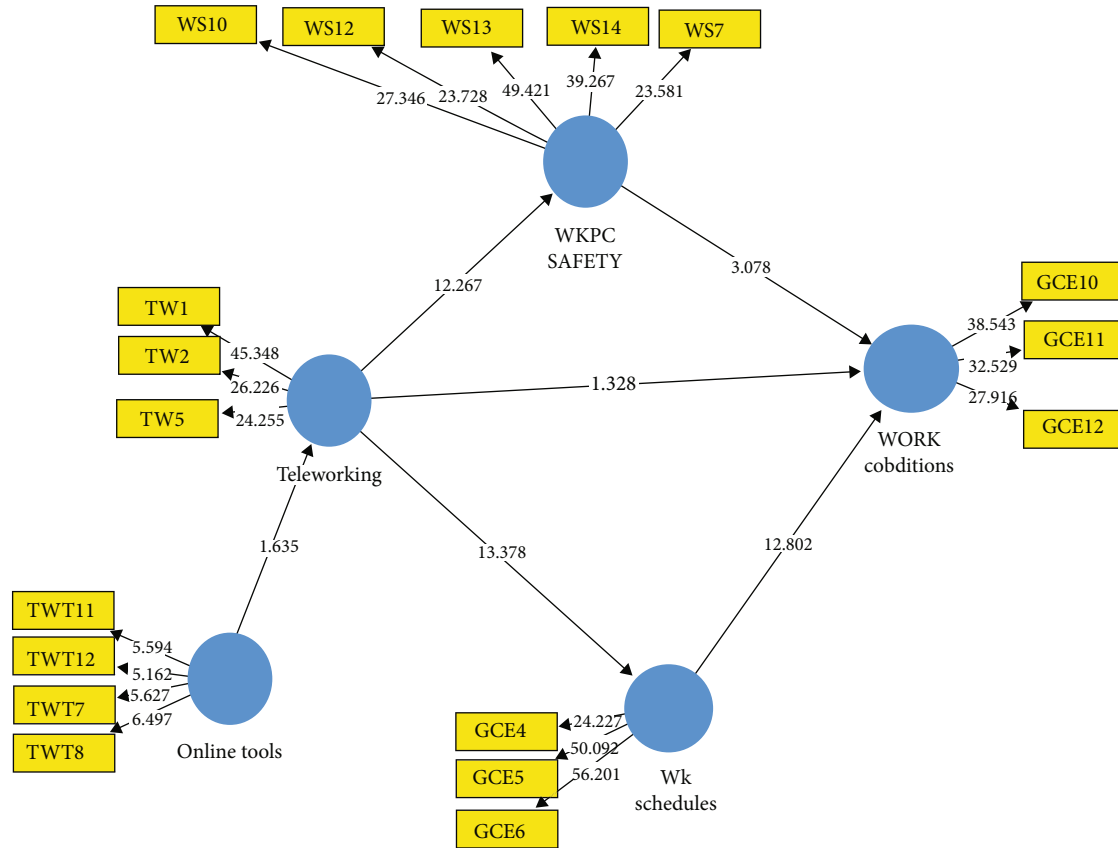


FIGURE 4: Results of bootstrapping obtained for path analysis.

TABLE 4: Structural model.

	R square		R square adjusted					
Teleworking_	0.017		0.013					
Workplace safety	0.310		0.307					
Work conditions	0.575		0.570					
Work schedules	0.367		0.364					
Total effects	Beta coefficient (β)	Sample mean (M)	Standard deviation	T statistics	f^2	P values	Confidence intervals	
							Lower	Upper
1. TW->WKC	0.543	0.543	0.049	11.129	0.008	0.000	0.032	0.193
2. TW->WKPS	0.556	0.560	0.045	12.288	0.448	0.000	0.467	0.649
3. TW->WKSCH	0.606	0.606	0.048	12.543	0.579	0.000	0.510	0.691
4. OT->TW	0.130	0.143	0.079	1.640	0.017	0.101	0.109	0.272
5. WKSCH->WKC	0.612	0.612	0.048	12.747	0.543	0.000	0.509	0.703
6. WKPS->WKC	0.168	0.169	0.057	2.974	0.045	0.003	0.059	0.282

Source: Field survey (2021). ** $p < 0.000$, * $p < 0.05$ supported.

highest value in terms of performance (60.201). However, online tools were not the most relevant in predicting working conditions in the model since the total effect (importance) of online tools was the lowest, with a value of 0.101. The two most important predictors of working conditions among participants during the pandemic were teleworking 0.589 and work schedules 0.574 as depicted in Figure 5.

3.8. Importance Performance Analysis for Workplace Safety and Work Schedules. The results for PLS IPMA for work schedules as shown in Table 6 suggested that out of the two predictors, online tools had the strongest performance with an index value of (60.201). However, online tools were the least important variable with a total effect (importance) of 0.120. Teleworking again emerged as the most important

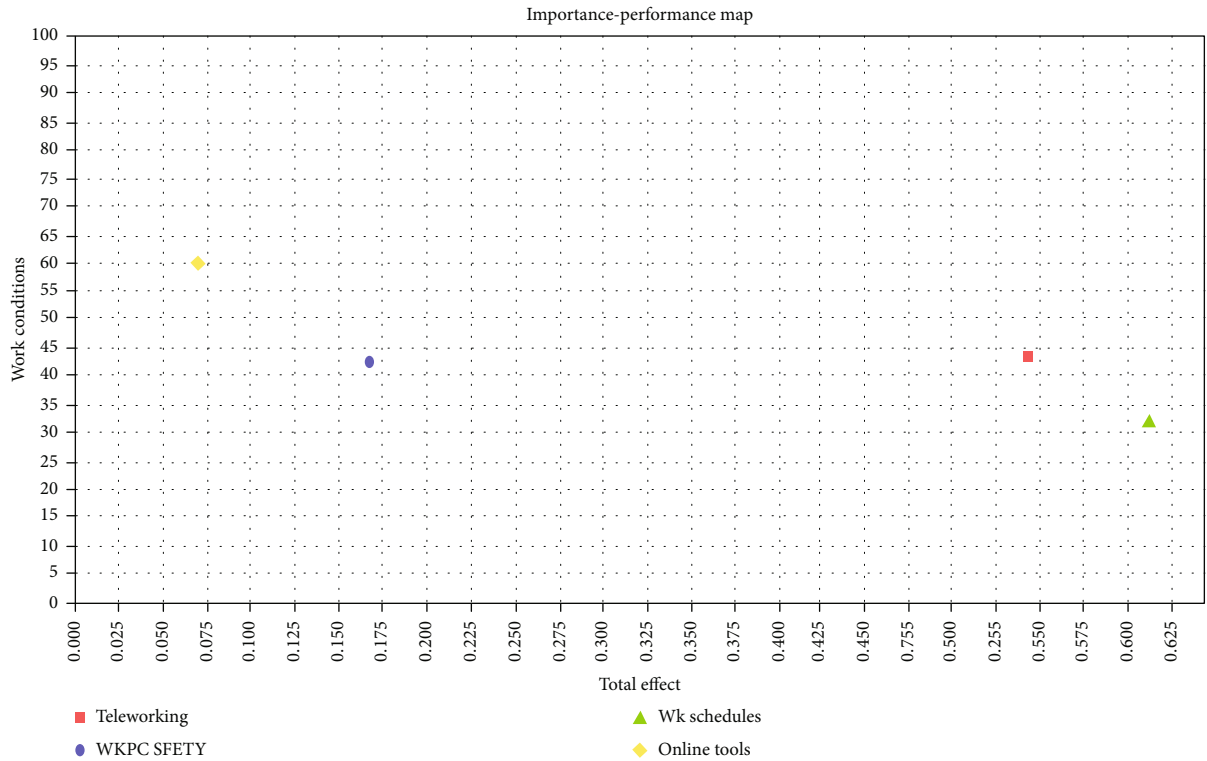


FIGURE 5: Importance and performance map of working conditions.

TABLE 5: Performance index values and total effects (working conditions).

	Total effect (importance)	Index values (performance)
Teleworking_	0.589	43.442
Wkpc safety	0.203	42.408
Wk schedules	0.574	32.459
Online tools_	0.101	60.201

Source: Field survey (2021).

variable in predicting work schedules with a total effect (importance) of 0.701. This means that online tools were the worst at predicting work schedules (importance), and teleworking was the best predictor based on the importance values obtained.

The importance of teleworking in predicting the work schedules during the pandemic was equally supported by Figure 6. Alternatively, results for PLS IPMA for *workplace safety*, as shown in Table 6 revealed that teleworking actually came out as the most important predictor for predicting workplace safety, with a total effect (importance) of 0.500. Thus, though online tools had a performance index value of 60.201, it was not the most important predictor.

3.9. Graphical Representation of the PLS IPMA Path Results. The graphical representation of the PLS path model for IPMA was conducted and the results obtained are presented in Figure 7. [36] recommended that analysts and readers pay

TABLE 6: Importance performance analysis for *workplace safety* and *work schedules*.

<i>Work schedules</i>	Total effect (importance)	Performance index values (performance)
Teleworking	0.701	43.442
Online tools	0.120	60.201
<i>Workplace safety</i>	Total effect (importance)	Performance index values (performance)
Teleworking_	0.500	43.442
Online tools_	0.085	60.201

Source: Field survey (2021).

attention to the differences between the graphical PLS-SEM results and the graphical representation of IPMA as totally different PLS outputs. The differences advanced were first, that the performance values of each latent variable of the IPMA shown instead of the R^2 values of the endogenous latent variables shown in the PLS path model. The second difference was that the IPMA results highlighted the unstandardized and recalled the outer weights of the measurement models (formative and reflective) and not the standardized outer loading or weights. Thus, in this study, the results of the beta values highlighted in the outer model in Figure 7 revealed each item's importance to the construct and not the loading. The inner values also determined the performance values of the constructs in the individual construct in relation to the endogenous variable and not the total variance explained.

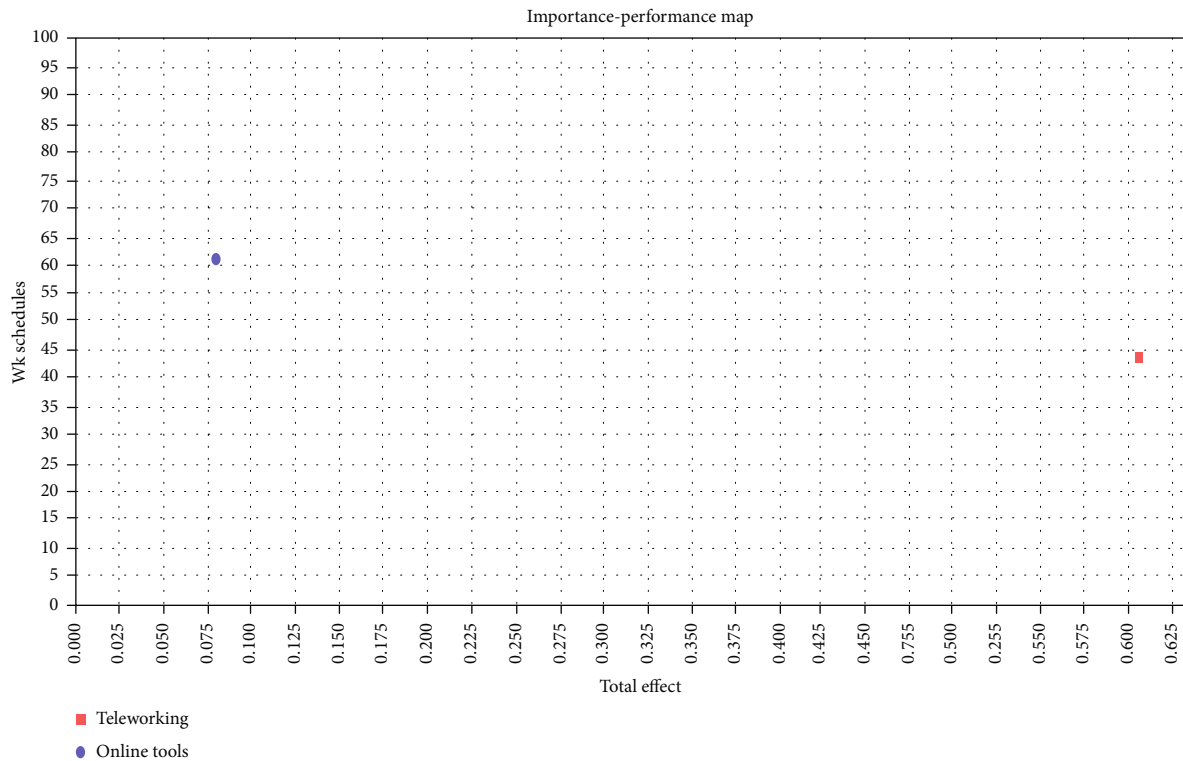


FIGURE 6: Importance and performance map of working conditions.

4. Discussion of the Results

The significant relation between teleworking/virtual working and working conditions suggests that employers can use virtual or teleworking to enhance the conditions under which workers operate during the COVID-19 pandemic. This means that teleworking improves working conditions, as can be seen from the results in Table 4 for hypothesis 1. The virtual working arrangement will demand that employers train their workers on its usage and provide data and logistical support for virtual platforms and organizations corroborating the findings of [9]. Teleworking has a higher propensity to help workers avoid any risk that the pandemic might have posed at the workplace and help prevent overcrowding. Thus, teleworking helps workers continue working while away from the workplace and allows employers to avoid overcrowding during the COVID-19 pandemic. Thus, the findings of [9] that teleworking had associated benefits for both employers and workers is upheld by this study.

Another relevance of teleworking as established in this study's hypothesis three was its significant relationship with work schedules. This means that virtual working affords managers to introduce helpful work schedules during the COVID-19 pandemic. Thus, teleworking can help introduce flexible shift systems, compressed workweek, and extended leave schedules for employees or paid parental care/childcare leave for participants to take care of family members and children due to lockdowns. Thus, participants were expecting that during the COVID-19 pandemic, employers will not rely on virtual working to increase their workloads or working hours.

Thus, participants' expectations at this stage were at variant with the findings of [27] that teleworking arrangements can increase the working hours of participants.

Meanwhile, the effectiveness of teleworking usage largely depends on online tools and knowledge on how these tools can be used to access online platforms or link up with the organization. Thus, the need for availability of computers/laptops or tablets for participants to operate from home cannot be underestimated. With the availability and knowledge of these online tools, workers could easily operate away from the office. Availability and competence of online tools usage also afford workers to virtually be in touch with their organization through online platforms such as WhatsApp, Zoom meetings, phone calls, emails, and SMS. The results, therefore, corroborate the findings of [30, 31] that online tools play a very important role in teleworking.

Though there are advantages associated with teleworking for employers and workers, it also comes with several other challenges. Apart from the cost of logistics, data, and training, a key challenge associated with teleworking is how workers will not divulge confidential information to unauthorized persons. Classified information in workers' hands could be business secrets that serve as a competitive advantage for the organization. Thus, operating from home where one's spouse and family members could be termed strangers when it comes to classified organization information, it will be very important to ensure that such important information does not slip into the wrong hands during virtual or teleworking. This finding of the study is in tandem of the findings of [27] that teleworking has some associated challenges for workers. Several methods could be helpful in this

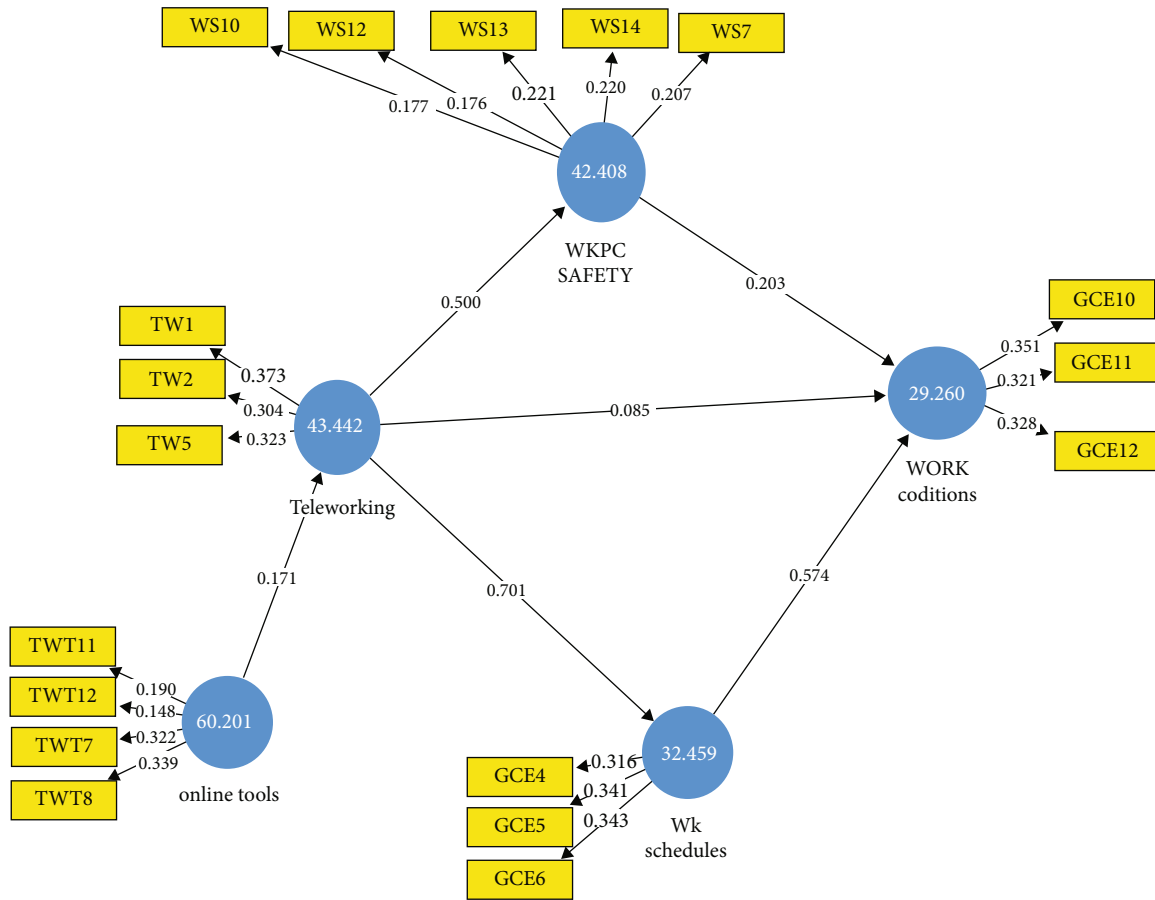


FIGURE 7: IMPA results for the path model.

regard to address this challenge. Typical among them include keeping classified information under key and password.

It can be inferred that virtual or teleworking also has the propensity to increase work-life conflict among workers. This is because participants will be working from homes while attending to family and other personal needs. Gender roles, especially for female participants such as cooking, taking care of children, house chores and conjugal responsibilities, and religious responsibilities, would all be competing for working hours while working from home through virtual or teleworking. After performing all these other roles, the consequences could be that the employee might be tired and could not stay very late to discharge his responsibilities towards the employer. This could therefore affect the performance of such participants. Thus, the findings of [9] on challenges associated with teleworking is upheld by this study.

Meanwhile, other categories of the participants who could be staying alone or had family members to assist them with the domestic activities as well as male participants could have a lot of time through virtual or teleworking arrangements. Enough time for this category of participants suggests the possibility of channelling more of their time into organizational activities and work schedules consequently and enhances organizational performance during teleworking in a pandemic. The assertion of [10] that teleworking presents several advantages to both managers and teleworkers is upheld in this study.

Another challenge with teleworking is the possibility of increasing domestic violence between participants and their close family relations during the pandemic. This is because of teleworkers who are married couples and had not spent all the twenty-four hours a day and the seven days in the week together in the house before the COVID-19 pandemic. However, with the emergence of the COVID-19 and the locked down imposition, couples and their family members were expected to stay together at home while working for their organization away from the office. Therefore, it will take time for this category of participants to understand each other in taking care of their spouses and responsibilities towards their employers, while learning to adjust to this new normal, it is bound to breed misunderstanding and conflict among couples. Thus, in [22], findings that working from home comes with some challenges for participants is upheld by the findings of this study.

As enshrined in the Labor Act (Act 651), the relevance of workplace safety is upheld by hypothesis six that workplace safety significantly relates to working conditions under which workers operated during the pandemic [24]. The need for a safe working environment for workers has become more demanding during the emergence of the COVID-19. The results suggest that workers needed more safety in their working environment during the COVID-19 pandemic to be happy with their working conditions. Employers are to

ensure safety at the workplace during the pandemic by providing PPEs, fumigation of workplaces to reduce the possible effect and spread of COVID-19 at the workplaces. Other required provisions by employers, especially for nonteleworkers, could include a continuous update on the COVID situation at the workplace, provision of adequate training on the usage, maintenance and disposal of PPEs, and training on how to act in suspected infection COVID-19 at the workplace. Above all these arrangements, teleworking stands tall as the best option to reduce insecurity in the workplace during a pandemic.

This finding implies that management's failure could make workplaces risky for work during pandemics, affect the physical and psychological conditions under which workers operate and further affect workers' productivity and performance. Thus, the results support Watterson (2020) that management's role in providing training on PPEs and updates to workers is essential for ensuring a safe working environment during the COVID-19 pandemic. The employers' responsibility of ensuring workplace safety has been more demanding and could result in a high cost of operation/production. Meanwhile, apart from being a legal requirement and the associated economic challenges, workplace safety also has humanitarian implications for employers. That is, lives lost due to employers' failing to ensure workplace safety remains irreplaceable.

4.1. Theoretical and Practical Implications. The findings of this study have several theoretical and practical implications for managers. The position of the spillover theory by Piotrowski [16] is that work-life conflict among participants could increase during teleworking due to working from home. Apart from the work-life conflict, it can also be inferred that the findings of this study also supported the spillover theory that domestic violence among spouses during teleworking could be very high during the pandemic since couples were then learning how to share their time, including their responsibilities towards each other and their employers [10].

The findings of this study equally has implication for the first theory guiding this study which was the self-development theory on intrinsic motivation. Undoubtedly, self-determination in the form of intrinsic motivation is pivotal for participants' success in teleworking arrangements during a pandemic [16]. However, this study has found that several other factors needed to be considered to enhance participants' expected performance on virtual platforms during the pandemic. The factors found were the availability of online tools such as computers, tablets, and laptops. Other important factors were electricity, and internet connectivity is also very important for teleworking to be very productive. Knowledge on the availability and the usage of teleworking tools such as Zoom, Google meets, and Google clouds services, among others, were also found to be a foundation for self-determination theory to be operation for teleworking during pandemics.

The practical implication of the findings of this study for managers of organizations desiring to embark on teleworking during pandemics is also important. The practical impli-

cation is that the provision of these online gadgets and the necessary training is the employer/managers' sole responsibility. They must ensure that these facilities exist before embarking on teleworking during pandemics. Thus, the theory of self-development in the form of intrinsic motivation will translate into a high level of productivity among workers on virtual or teleworking arrangements provided the online resources and managers provide the requisite training.

5. Conclusions and Recommendations

This study examined the effect of teleworking on the working conditions of workers, a post-COVID-19 lockdown perspective. It can be concluded that teleworking/virtual working had a significant relationship or effect on the conditions under which participants operated during the COVID-19. Teleworking also had a significant effect or influence on workplace safety and work schedules. Additionally, work schedules were also found to have a statistically significant relationship with the general conditions under which participants operated during the COVID-19. In terms of the importance of the factors of the study, teleworking and work schedules came out as the most important predictors of decent working conditions during pandemics.

The significance of all the independent variables on working conditions is that the general conditions under which participants operate during COVID-19 are key for ensuring sustaining employees and organizational performance. For employers to maintain better working conditions for participants during any pandemic depends on how employers ensure safety at the workplace, virtual or teleworking arrangements and supports are highly needed to enable participants to operate away from the office. Better working conditions for participants during any pandemic also depend on flexible work schedules supported by teleworking to enable participants to manage work and family challenges while operating away from the office.

The above conclusion demands a definite action to be taken by employers. For this reason, it is recommended that employers, especially the government, should provide logistical and data supports or allowances for participants to use virtual platforms to work away from the office. Teleworking will help workers effectively meet their work schedules without being exposed to insecurity and a large crowd during COVID-19. Meanwhile, employers should ensure that security systems are in place to ensure that the organization's confidential information is not revealed to unauthorized persons. It is also recommended that the teleworking arrangement be flexible enough by reducing the workload so that workers can attend to family among others while working from home. It is recommended that employers should ensure safety at the workplace during the pandemic. This is needed to ensure that workers have the psychological and physical well-being to contribute to their organizational performance. Employers can do this by providing PPEs, fumigation of workplaces to reduce the possible effect and spread of COVID-19, continuous updates on the COVID situation at the workplace, and provision of adequate training on usage and maintenance and disposal of PPEs.

5.1. Limitation of the Study and Suggestion for Further. This study has been limited to Ghana, a developing economy and used the quantitative approach. The main variables studied were teleworking, workplace safety, work schedules, online tools, and working conditions. Thus, this study did not cover all other human resources or work-related factors, and the study also did not get workers descriptions of their feelings during the COVID-19 through interviews. It is possible that these dimensions could also provide valuable information for the world of work, especially the Ghanaian workplaces during the COVID-19. Therefore, it is suggested that future studies consider the effect of COVID-19 on job losses and a comparative study on the effect of COVID-19 on the world of work from both developing and developed economies.

Data Availability

Data for this study can be made available upon reasonable request.

Conflicts of Interest

The authors of this paper have no competing interests.

Authors' Contributions

All authors contributed equally towards this paper.

Acknowledgments

We wish to express our profound appreciation to all respondents who took time off their busy schedules to respond to the instrument for data gathering. The support of the national service personnel (Raymond, Samuel, Edwina, Dennis) with the Art and Social Science Unit, CoDE, UCC during data analysis is also recognized and appreciated.

Supplementary Materials

Appendix A: questionnaire. (*Supplementary Materials*)

References

- [1] ILO, *ILO Monitor: COVID-19 and the World of Work, Updated Estimates and Analysis*, ILO, Geneva, 2nd edition, 2020.
- [2] J. N. Upoalkpajor and C. B. Upoalkpajor, "The impact of COVID-19 on education in Ghana," *Asian Journal of Education and Social Studies*, vol. 9, no. 1, pp. 23–33, 2020.
- [3] Deloitte, *The economic impact of the COVID-19 pandemic on the economy of Ghana: summary of fiscal measures and Deloitte views*, Deloitte, Accra, 2020.
- [4] M. Segbenya, N. Y. Oppong, and S. A. Baafi-Frimpong, "The role of national service. In enhancing employability skills of tertiary graduates in Ghana: a case of national service personnel in the central region," *Higher Education, Skills and Work-Based Learning*, vol. 11, no. 5, pp. 1089–1105, 2021.
- [5] D. Adonu, Y. Amankwaa Opuni, and C. Bobson Dorkenoo, "Implications of COVID-19 on human resource practices: a case of the Ghanaian formal sector," *Journal of Human Resource Management*, vol. 8, no. 4, p. 209, 2020.
- [6] M. Costa Dias, R. Joyce, F. Postel-Vinay, and X. Xu, "The challenges for labour market policy during the COVID-19 pandemic," *Fiscal Studies*, vol. 41, no. 2, pp. 371–382, 2020.
- [7] M. Buheji and A. Buheji, "Planning competency in the new normal– employability competency in post- COVID-19 pandemic," *International Journal of Human Resource Studies*, vol. 10, no. 2, pp. 237–251, 2020.
- [8] B. Nazario, "What is SARS-CoV-2?," 2020, <http://what.is.SARS-COV-2?.webmd.com>.
- [9] K. T. Rahman and Z. U. Arif, "Working from home during the COVID-19 pandemic: satisfaction, challenges, and productivity of employees," *International Journal of Trade and Commerce*, vol. 9, no. 2, pp. 282–294, 2020.
- [10] K. Lister and T. Harnish, "Telework and its effects in the United States," in *Telework in the 21st Century*, J. C. Messenger, Ed., pp. 128–170, Edward Elger Publishing, Inc., Cheltenham, United Kingdom, 2019.
- [11] C. G. Picu and A. Dinu, "Research on the current telecommuting trends in the United States and European Union markets," *Management and Economics Review*, vol. 1, no. 2, pp. 194–202, 2016.
- [12] S. Hamouche, "COVID-19 and employees' mental health: stressors, moderators and agenda for organizational actions," *Emerald Open Research*, vol. 2, 2020.
- [13] McKinsey & Company, *Beyond Coronavirus: The Path to the Next Normal*, McKinsey & Company, 2020.
- [14] I. S. Austin-Egole, E. B. J. Iheriohanma, and C. Nwokorie, "Flexible working arrangements and organizational performance: an overview," *Journal of Humanities and Social Science*, vol. 25, no. 5, pp. 50–58, 2020.
- [15] A. Watterson, "COVID-19 in the UK and occupational health and safety: predictable not inevitable failures by government, and trade union and nongovernmental organization responses," *Journal of Environmental and Occupational Health Policy*, vol. 30, no. 2, pp. 86–94, 2020.
- [16] S. P. Robbins, T. A. Judge, and N. Vohra, *Organisational Behaviour*, Pearson Prentice Hall, India, 14th edition, 2012.
- [17] J. Adonis, "Building better performance through intrinsic motivation: call centre helps the UK's most popular contact centre magazine," 2006, <https://www.callcentrehelper.com>.
- [18] E. Berkery, M. J. Morley, S. Tiernan, H. Purtill, and E. Parry, "On the uptake of flexible working arrangements and the association with human resource and organizational performance outcomes," *European Management Review*, vol. 14, no. 2, pp. 165–183, 2017.
- [19] E. Deci and R. Ryan, Eds., *Handbook of Self-Determination Research*, University of Rochester Press, Rochester, NY, 2002.
- [20] J. E. Bono and T. A. Judge, "Self-concordance at work: towards understanding the motivational effects of transformational leaders," *Academy of Management Journal*, vol. 46, no. 5, p. 554, 2003.
- [21] J. H. Greenhaus and N. J. Beutell, "Work-family conflict," *Journal of The Academy of Management Review*, vol. 45, pp. 1–9, 2002.
- [22] D. De Caprio, J. Gartner, T. Burgess et al., "Building a COVID-19 vulnerability index," 2020, <https://arxiv.org/abs/2003.07347>.
- [23] Ghana Health Services, "Situation update, COVID-19 outbreak in Ghana as at 25th August 2020," 2020, <https://www.ghanhealthservice.org/covid19/archive.php#>.
- [24] M. Segbenya and P. D. Ahiatroga, "Appraisal of managerial roles of study centre coordinators of College of Distance

- Education, University of Cape Coast,” *World Journal of Education*, vol. 8, no. 5, pp. 1–16, 2018.
- [25] S. C. Clark, “Work/family border theory: a new theory of work/family balance,” *Human Relations*, vol. 53, no. 6, pp. 747–770, 2000.
- [26] S. Raghuram and B. Wiesenfeld, “Work-nonwork conflict and job stress among virtual workers,” *Human Resource Management*, vol. 43, no. 2-3, pp. 259–277, 2004.
- [27] S. R. Sardeshmukh, D. Sharma, and T. D. Golden, “Impact of telework on exhaustion and job engagement: a job demands and job resources model,” *New Technology, Work and Employment*, vol. 27, no. 3, pp. 193–207, 2012.
- [28] ILO, *Non-standard forms of employment in Uganda and Ghana. Conditions of Work and Employment Series No. 70*, ILO, Geneva, 2018.
- [29] A. Bandura, *Self-Efficacy: The Exercise of Control*, W.H. Freeman and Company, New York, 2006.
- [30] J. Mayfield and M. Mayfield, “The relationship between leader motivating language and self-efficacy: a partial least squares model analysis,” *Journal of Business Communication*, vol. 49, no. 4, pp. 357–376, 2012.
- [31] C. M. Valentin, “Experimental approach of the relationship between self-efficacy awareness and the tendency of self-improvement,” *Procedia-Social and Behavioral Sciences*, vol. 78, pp. 541–545, 2013.
- [32] D. Argo, L. Zhu, B. Benwell, and Z. Yan, “Digital technology use during COVID-19 pandemic: a rapid review,” *Human Behavior and Emerging Technologies*, vol. 3, no. 1, pp. 13–24, 2021.
- [33] G. Brown and P. Greenfield, “Staying connected during stay-at-home: communication with family and friends and its association with well-being,” *Human Behavior and Emerging Technologies*, vol. 3, no. 1, 2020.
- [34] J. F. Hair, G. T. M. Hult, C. M. Ringle, and M. Sarstedt, *A Primer on Partial Least Squares Structural Equation Modelling*, Sage Publications, Thousand Oaks, CA, 2014.
- [35] M. R. Hamid, W. Sami, and M. M. Sidek, “Discriminant validity assessment: use of Fornell and Larcker criterion versus HTMT criterion,” *Journal of Physics: Conference Series*, vol. 890, no. 1, p. 012163, 2017.
- [36] J. Henseler, C. M. Ringle, and M. Sarstedt, “A new criterion for assessing discriminant validity in variance-based structural equation modelling,” *Journal of the Academy of Marketing Science*, vol. 43, no. 1, pp. 115–135, 2015.