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COVID-19 stress and employee performance: the mediating effect of counterproductive behaviour

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Abstract: The study assessed the nexus between COVID-19 stress and employee performance with counterproductive work behaviour as a mediating factor. The study was a cross-sectional quantitative research design with data collected from 335 employees using a convenient sampling frame. Data was analysed using SPSS (v.25) and PLS-SEM (v.4.0). The result of the study revealed that COVID-19 induced stress has a positive and significant effect on employee adaptive performance, contextual performance, and task performance. Similarly, counterproductive work behaviour mediates the direct relationship between COVID-19 induced stress and employee work performance. The study further discussed the practical and theoretical implications of the findings and the implications for future studies.

Keywords: COVID-19; employee work performance; stress; counterproductive work performance.

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1 Introduction

The World Health Organisation no longer considers the world in a pandemic situation. The COVID-19 pandemic with its antecedent lockdown and movement on restrictions has induced mental and psychological distress among employees (Arslan and Yıldırım, 2021; Saleem et al., 2021; Ghosh and Saha, 2022; Pai et al., 2022; Handa and Jain, 2023; Rasit et al., 2023). The psychological well-being of employees is negatively impacted by events of uncertainty which negatively affects their performance at work (Saleem et al., 2021). The COVID-19 pandemic led to restrictions on movements, changes in work arrangements (working from home) and in some cases isolation (compulsory quarantine). This led to stress, anxiety, sadness, mental confusion and social deprivation of workers (Brooks et al., 2020; Talaee et al., 2020; Mergel and Schützwohl, 2021; Jaenudin et al., 2022). Scholars Giorgi et al. (2020) and Vindegaard and Benros (2020) noted that the COVID-19 pandemic has resulted in high levels of depression as a result of anxiety and poor sleep pattern of employees whose work-related conditions have changed.

Counterproductive behaviours may be formed as a result of the restrictions on movements and during the period of isolation (Malik et al., 2021). This is so because employees have need to maintain long-term positive relationships with their work colleagues. This need requires more stable and frequent interactions in a more stable working environment (Malik et al., 2021). The COVID-19 induced isolation and technology mediated communication threatens to weaken the development and formation of long-term relationships among employees. Failure to form positive social bonds can prove corrosive for social cohesion and this may lead to counterproductive behaviours (Saleem et al., 2021).

Academic and scholarly works on the effect of stress and stress induced events on the employee work performance have been inconclusive. A number of scholars (Giorgi et al., 2020; Chirico et al., 2021; Kumar et al., 2021; Puig-Perez et al., 2022) postulated a negative effect of stress on the work performance of employees. However, scholarly works from (Hire et al., 2021; Nasrullah et al., 2021; Wong et al., 2021) failed to establish a positive effect of stress on the work performance of employees. Furthermore, studies by Liu et al. (2021) reported both negative and positive relationship between stress and employee performance. With the inconclusiveness in the extant literature notwithstanding, none of these studies reported the level of impact of stress on the work performance of employees. Furthermore, a review of the extant literature indicates that most works done on COVID-19 induced stress focused more on health workers (Abdel Wahed et al., 2020; Cai et al., 2020; Santarone et al., 2020; Wu et al., 2020; Jahrami et al., 2021) with less focus on workers in the telecommunication sector.

The telecommunication sector played significant role during the height of the pandemic to ensure that critical communication needs of both frontline workers and isolated and quarantine persons as well the entire population were met. It is important that the level of stress induced by the COVID-19 pandemic be assessed and most importantly how this influenced the work performance of these employees. During the height of the pandemic with the institutionalisation of various measures which restricted the movement of people, Malik et al. (2021) noted that many developed counterproductive behaviour as a result of not being able to have direct contact with colleagues. A review of the extant literature so far indicates no study has adopted and measured how this counterproductive behaviour influenced the performance of employees. It is a novel contribution of this study to assess the counterproductive

behaviour of employees as a mediator between the stress experienced as a result of the COVID-19 pandemic and their work performance. In effect, this study assesses the stress-induced effect of COVID-19 pandemic on employee performance, adopting counterproductive work behaviour (CWB) as a mediator.

The study contributes significantly to literature, practitioners in the telecommunication ecosystem and policy makers. To academia and to literature, the study makes a novel contribution to the emerging literature on how the COVID-19 pandemic influenced the level of work performance of employees. The study further contributes to explore further the role of CWB as a result of the pandemic which is yet to be explored in the extant literature. The study significantly contributes to enhance the work of managers in the telecommunication ecosystem as the findings may provide some level of understanding on how effective measures to enhance employee performance during the height of the pandemic was effective. Being the first and major work from home policy for many companies in the industry, the results may help to further assess the policy gap in their implementation of the work from home policy vis-à-vis the stress level experienced by employees and how this impacts their performance. To policy makers in the telecommunications industry, an effective and thriving telecommunication system significantly contributes to the gross domestic product of the country. It is in the interest of policy makers to ensure that the rights of workers with the ecosystem is protected, and they are not overexposed to stress induced activities. The findings may help to drive policy directions on how to make the working environment post COVID-19 effective.

2 Literature review

2.1 Hobfoll (1989) conservation of resources (COR) theory

The study is anchored on the Hobfoll (1989) conservation of resources (COR) theory. The theory postulates that individuals strive in order to obtain, foster and protect their resources. The theory underscores the importance of resource loss and resource gain the experience of stress (Hobfoll, 1989, 2001; Hobfoll and Ford, 2007; Halbesleben et al., 2014). During the COVID-19 pandemic, employees are likely to perceive a threat to various resources such as health, security of their job, work-life balance as well as a sense of normality (Giorgio et al., 2020). The theory further postulates that individuals experiencing loss of resources may among other things engage in defensive behaviours such as CWB. This is to help conserve their remaining gained resources (Hobfoll, 2001). Studies such as Wu et al. (2020), Adisa et al. (2021), Merino et al. (2021), Egozi Farkash et al. (2022), Kokubun et al. (2022), Li et al. (2022), Yu et al. (2023) adopted the tenets of the COR theory in the context of the COVID-19 pandemic. The theory provides a comprehensive and a robust framework to further explore the dynamics of COVID-19 induced stress in employees and CWBs, reinforcing CORs relevance in the context of the current study.

2.2 COVID-19 stress at the workplace

Stress at work is detrimental to the psychological wellbeing of employees. Bunk and Magley (2013) noted that stress is an individual employee negative reaction to complex

emotional and physical problems at the workplace. This reaction mainly occurs when the requirements of the job are not in congruence with the capabilities of the employee and the available resources are not enough to meet such job requirements (Tongchaiprasit and Ariyabuddhiphongs, 2016; Nguyen and Ermasova, 2018). A study by Karatepe et al. (2018) noted that more than half of employees undergo intense stress. They further stressed that about two-thirds of employees encounter difficulties focusing on their jobs due to work stress. Stress at the workplace if not properly managed may negatively affect the job performance of employees (Akgunduz, 2015; Kim et al., 2015). A review of the extant literature indicates that the COVID-19 pandemic induced a lot of stress among employees with most of them experiencing high amount of stress at the peak of the pandemic (Abdel Wahed et al., 2020; Cai et al., 2020; Rajkumar, 2020; Santarone et al., 2020; Wu et al., 2020; Zhang et al., 2020; Jahrami et al., 2021).

2.3 Employee work performance

Employee work performance is the extent to which employees are able to make use of available resources to achieve desired demand of the job (Atatsi et al., 2019). The work performance of employees entails carrying out assigned tasks with the available resources, producing quality results, within an acceptable time frame (Mangkunegara and Agustine, 2016; Sutrisno, 2022). Kuranchie-Mensah and Amponsah-Tawiah (2016) see work performance as an employee participation in attaining organisational efficiency. This is achieved by carrying out tasks that are within the official compensation system as specified within the employee's job descriptions. Koopmans et al. (2014a) noted that employee work performance relates to the action of the employee that are formally prescribed in the job description and evaluated by the management. Koopmans et al. (2014b) and Motowidlo (2003) noted that employee performance can be categorised into task performance, contextual performance (CP) and adaptive performance. These classifications of employee performance form the basis of contextualising employee performance for the purpose of the study.

2.4 Counterproductive work behaviour

The prevalence of CWB and its antecedent negative consequences within the organisation is on the rise (van Zyl and de Bruin, 2018; Wei et al., 2019; Seriki et al., 2020; Wurthmann, 2020). CWB affects negatively the task performance of employees, this has a tripling effect on the overall performance of the organisation (Shen and Lei, 2022). CWB in the workplace encompasses negative work attitudes such as workplace hostility and has the tendency to bring the reputation of the organisation into disrepute (Sackett, 2002; Spector and Fox, 2010; Walter et al., 2019; Hu et al., 2022).

3 Hypotheses development

3.1 COVID-19 stress and employee adaptive performance

Given the unpredictability of the workplace, workers must be nimble in order to maintain their value to the company (Charbonnier-Voirin and Roussel, 2012). Adaptive behaviour, which may be defined as the capacity of workers to swiftly develop relative to the

changing work situation, is particularly important in a fast-changing work environment with a lot of uncertainty (Griffin and Hesketh, 2005; Jundt et al., 2015; Park and Park, 2019). For better performance in the workplace, individuals must be able to adjust to new circumstances quickly and effectively (Shoss et al., 2012; Dorsey et al., 2017). An increase in work uncertainty might have a negative impact on workers' ability to adapt to their environment (Sherehiy and Karwowski, 2014). Employment insecurity hindered people's capacity to learn and adapt and high levels of employment uncertainty is noted to be associated with increased stress. This leads to less effective job adaptation (Sherehiy and Karwowski, 2014). Jobs in the contemporary economy are often fraught with uncertainty and demand workers who can adjust to new situations quickly (Jundt et al., 2015). Hence the study hypothesis that:

H1 COVID-19 stress significantly influences the adaptive performance of employees.

3.2 COVID-19 induced stress and employee contextual performance

CP is work done outside of an organisation's primary functions that contributes to its overall success. Employee initiative, willingness to take on new responsibilities, and commitment to lifelong learning are all measurable outcomes of CP (Albrecht and Su, 2012; Koopmans et al., 2014b). Despite the fact that employees' CPs are often not formally part of their jobs descriptions, they contribute to the company's success (Sonnentag and Spychala, 2012). It influences the social, psychological, and organisational work environments and enhances organisational performance (Esmaeili et al., 2019; Rawabdeh et al., 2019; Borman and Motowidlo, 2021; Martina and Nagarajan, 2022).

A number of studies have found a negative correlation between stress and taking on additional responsibilities outside of one's core job duties, and there is a direct connection between prolonged exposure to stressful situations at work and a decline in both individual and team performance in the workplace (Saleem and Gopinath, 2015; Kożusznik et al., 2018; Giorgi et al., 2020; Roster and Ferrari, 2020; Saleem et al., 2021). One potential effect of burnout is a decline in CP (Giorgi et al., 2020). In particular, some academics have argued that exhaustion of workers' emotional and mental resources discourages people from engaging in additional work that is not required, is optional, and is not always rewarded (Van Emmerik et al., 2005). The study postulates that

H2 COVID-19 stress significantly influences the CP of employees.

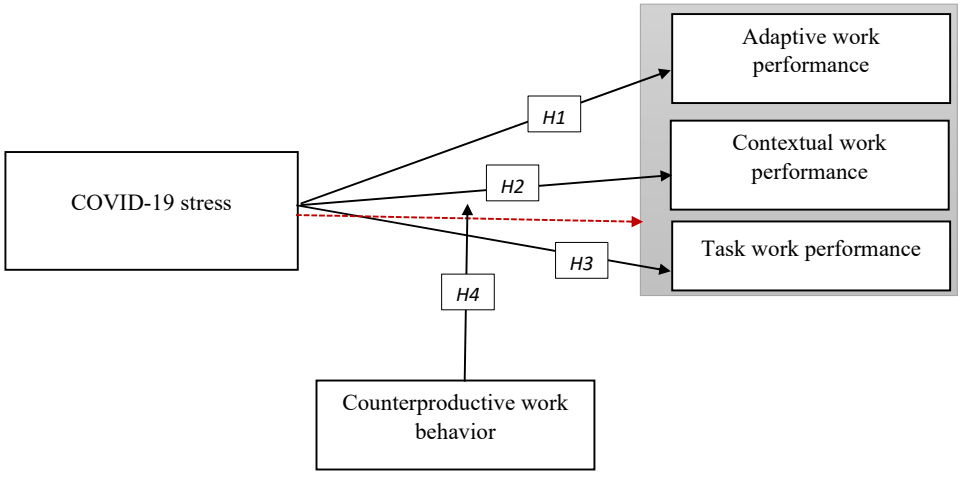
3.3 COVID-19 induced stress and employee task performance

Workplace stressors including role overload, job ambiguity, and role conflicts impact work efficiency. As COVID-19 progresses, it becomes clear that job stress, and especially its more severe manifestations, are becoming more common in the workplace (Denning et al., 2021; Galbraith et al., 2021; Mo et al., 2021; Yıldırım and Solmaz, 2022). People who are under a lot of pressure at work may not feel particularly invested in or satisfied by their work (Saleem and Gopinath, 2015; Dinc et al., 2018), which may lead to a lack of focus on the tasks at hand and a decrease in productivity. Job overload, role ambiguity, and role conflicts may all contribute to increased stress and lower performance in companies, which may be exacerbated by the uncertainty caused by the COVID-19 pandemic. The telecommunications industry has a reputation as a demanding

field because to its rigorous regulatory laws, high levels of competition, and consumers' constantly shifting needs. Employees' mental and physical well-being may be compromised as a result of these stresses. As a result of the present COVID-19 crisis, workers in the telecommunications industry face similar elevated stress levels. The study therefore posits that:

H3 COVID-19 stress significantly influence the task performance of employees.

Figure 1 Model of study (see online version for colours)



3.4 The mediating role of counterproductive behaviour on the direct effects of COVID-19 stress on employee work performance

When the task performance of employees is not well defined, it may lead to stress which may result in a poor work performance of the employee (June and Mahmood, 2020; Leonelli et al., 2022). Undefined and ambiguous tasks may lead employees to adopt negative work attitudes such as absenteeism, organisation and interpersonal aggressiveness (Malik et al., 2020). This negative emotion could lead to CWB, or the emergence of anti-role behaviour, antisocial, maladaptive or deviant that do not align with organisational goals hence negatively affecting the performance of the employee (Tiarapuspa and Riani, 2018; Wahl et al., 2023). Burnout and excess workload is considered to positively predict CWBs (Ma and Li, 2019). This shows that the work pressure faced by individuals in the workplace, such as workload, interpersonal stress, can lead to changes in individual emotions and behaviours. When faced with stress, individuals are prone to negative emotions such as anxiety, impatience and tension. Thus, it hypothesised that

H4 CWB will mediate the direct relationship between COVID-19 stress and employee work performance.

The model of the study is presented in Figure 1.

Table 1 Demographic information, n = 335

Category	*Variable*	*Frequency*	*Valid percent*
Age	20–29	33	9.9
	30–39	156	46.6
	40–49	134	40.0
	50–60	12	3.6
	Total	*335*	*100.0*
Gender	male	148	44.2
	female	187	55.8
	Total	*335*	*100.0*
Years of service	1–3 years	46	13.7
	4–6 years	58	17.3
	7–10 years	53	15.8
	11–15 years	70	20.9
	16–20 years	80	23.9
	21–25 years	20	6.0
	26+	8	2.4
	Total	*335*	*100.0*
Division	Customer relations	177	52.8
	Marketing	35	10.4
	mobile financial services	11	3.3
	sales and distribution	112	33.4
	Total	*335*	*100.0*

4 Methods

4.1 Sampling and data collection

The study chose employees of telecommunication companies in Ghana as their services during the height of the pandemic was considered part of essential services. These group of respondents were deemed appropriate as study participants and to further test the proposed framework of the study. These group of employees at the height of the pandemic, along with their core jobs, have to take on extra responsibilities to ensure that there is no break in communication services which became an essential commodity during the lockdowns and restrictions in movements. The study adopted a non-probability convenience sampling technique. Out of 500 targeted respondents, 335 questionnaires were filled and returned. Hence the total sample size of the study was 335, given a response rate of 67%. As indicated in Table 1, majority of the respondents (46.6%) were between the ages of 30–39 years and 40% of the respondents were between the ages of 40–49 years. In terms of the gender of the respondents, the majority of the respondents were female with 55.8% participation and 44.2% were males. Furthermore, the majority of the respondents, 23.9% had 16–20 years of working experience and 20.7% had

between 11–15 years of working experience. In terms of the department/division of the respondents, 52.8% were customer service relations.

4.2 Instrumentation

The study adopted a close-ended questionnaire on a five-point Likert scale where 1 was strongly disagree and 5 was strongly agree. The questionnaire had 27 items. The scale on the COVID-19 induced stress had 4 items and was adapted from the work of Kang et al. (2021) with a reliability level of 0.842. A question on this scale reads 'After the COVID-19, I feel confident about my ability to handle my personal problems'. The scale on task performance, CP and CWB had five, six and five items respectively were adapted from the Individual Work Performance Questionnaire by Koopmans et al. (2014). The scale on the adaptive performance of the employee was adapted from the work of Charbonnier-Voirin and Roussel (2012) with seven items.

4.3 Procedure

The researcher adopted the use of gatekeepers who were mid-level managers in each of the three major telecommunication firms in Ghana. Kay (2019) noted that gatekeepers are an integral part of an ethical process of seeking authorisation for research. The researchers engaged the gatekeepers to let them understand the scope of the research and to help reach out to the potential study participants. Hard copied questionnaires written in plain English Language was handed over to the gatekeepers for distribution to the study respondents. The administration of the questionnaire was carried out between September 10 to 5th December 2022. Anonymity and confidentiality were assured, and the study participants were assured that their responses will be kept very confidential.

4.4 Data analysis

The study adopted the partial least square structural equation modelling (PLS-SEM v.4.0) for data analysis. Hwang et al. (2021) noted that the PLS-SEM is broadly used for theoretical confirmation and is appropriate for the validation of a model using not too large sample size. The study adopted the SPSS (v.25.0) for the demographic and the test of common method bias analysis. The measurement model and structural model as well as the mediation analysis were carried out using the PLS-SEM (v.4.0).

5 Results

5.1 Test of common method bias

Data collected from single methods are likely to experience the issue of common method bias (Cooper et al., 2020). The study adopted the Harman Single Factor Test in assessing the common method bias (Harman, 1967). The result shows that a single factor explained 43.808% of the variance. The study concluded that there was no issue of common method bias as the variance of a single factor which is lower than the 50% espoused in literature is considered an acceptable level (Podsakoff et al., 2003).

Table 2 Descriptive statistics with factor loadings

CODE	*Construct*	*Factor loading*	*Mean*	*Std. deviation*
	COVID-19 stress		*4.386*	
CD1	After the COVID-19, I feel confident about my ability to handle my personal problems	0.941	4.469	0.708
CD2	After the COVID-19, I feel like things are going my way	0.920	4.406	0.748
CD3	After the COVID-19 pandemic, I have been able to control irritations in my life	0.911	4.325	0.807
CD4	After the COVID-19 pandemic, I feel like am on top of things at work	0.928	4.346	0.785
	Employee task performance		*4.311*	
TP1	I managed to plan my work so that it was done on time	0.689	3.934	1.036
TP2	I kept in mind the results that i had to achieve in my work	0.885	4.331	0.763
TP3	I was able to separate main issues from the side issues at work	0.881	4.337	0.772
TP4	I was able to perform my work well with minimal time and effort	0.843	4.412	0.716
TP5	Collaboration with others at work was very productive	0.874	4.540	0.686
	Employee contextual performance		*4.502*	
CP1	I started new tasks myself, when my old ones were finished	0.912	4.478	0.753
CP2	I took on challenging work tasks when available	0.919	4.510	0.709
CP3	I worked at keeping my job knowledge up to date	0.921	4.519	0.691
CP4	I came up with creative solutions to new problems	0.882	4.415	0.729
CP5	I kept looking for new challenges in my job	0.917	4.466	0.708
CP6	I actively participated in work meetings	0.488	4.624	0.509
	Employee adaptive performance		*4.689*	
AP1	I am able to achieve total focus on situations to act quickly	0.755	4.710	0.480
AP2	I analyse possible solutions and their ramifications quickly to select the most appropriate one	0.728	4.743	0.552
AP3	I quickly decide on the actions to take to resolve the problem	0.800	4.737	0.480

Table 2 Descriptive statistics with factor loadings (continued)

CODE	*Construct*	*Factor loading*	*Mean*	*Std. deviation*
AP4	I am not in a position to be able to respond quickly to situations	0.804	4.737	0.504
AP5	I feel at ease even if my tasks change and occur at a very fast pace	0.825	4.687	0.496
AP6	My colleagues ask my advice regularly when situations are difficult because of my self-control	0.817	4.654	0.573
AP7	I look for solutions by having a calm discussion with colleagues	0.731	4.551	0.612
	Counterproductive work behaviour		*4.638*	
CTP1	I complained about unimportant matters at work	0.869	4.583	0.588
CTP2	I made problems greater than they were at work	0.866	4.659	0.557
CTP3	I focused on the negative aspects of a work situation, instead on the positive aspects	0.858	4.726	0.473
CTP4	I spoke with colleagues about the negative aspects of my work	0.763	4.498	0.630
CTP5	I spoke with people from outside the organisation about the negative aspects of my work	0.853	4.726	0.473

5.2 Descriptive statistics with factor loadings

Table 2 indicates that after the COVID-19 pandemic, the employees were able to effectively manage their stress level (M = 4.386). This resulted in continuous improvement in task performance (M = 4.311), CP (M = 4.502) as well as their adaptive performance (M = 4.689). It can be argued that the adaptive performance of the employees improved significantly relative to the other measures of work performance. However, the CWB of the employees was on the high which must be a worry to the organisation. Furthermore, the result of the study indicates that all the factors were highly loaded except for TP1 which recorded a factor of 0.689 and CP6 which recorded a factor of 0.488. These poorly loaded factors were dropped.

6 Measurement model

The study adopted the confirmatory factor analysis (CFA) using the partial least square-structural equation modelling approach to verify the construct validity of the measurement model. As indicated in Table 3, after dropping the poorly loaded factors (CP6, TP1), all the factor loadings were significant and ranged from 0.728 to 0.941, exceeding the 0.70 criterion. The average variance extracted equally ranged from 0.610 to 0.856, meeting the above 0.50 criterion as stated in the extant literature. This confirms the convergent validity of the study (Hwang et al., 2021). The constructs of the study

were all deemed reliable as the Cronbach alpha values ranged from 0.893 to 0.944 and composite reliability values of 0.916 to 0.962. The reported values are higher than the 0.70 level recommended in the extant literature (Hwang et al., 2021). Table 4 exhibits that the square root value of AVE between each pair of constructs was higher than the corresponding correlation coefficient, confirming the discriminant validity. Furthermore, the effect size (Q2) values greater than zero for the endogenous variables indicated acceptable predictive relevance (Hair et al., 2012).

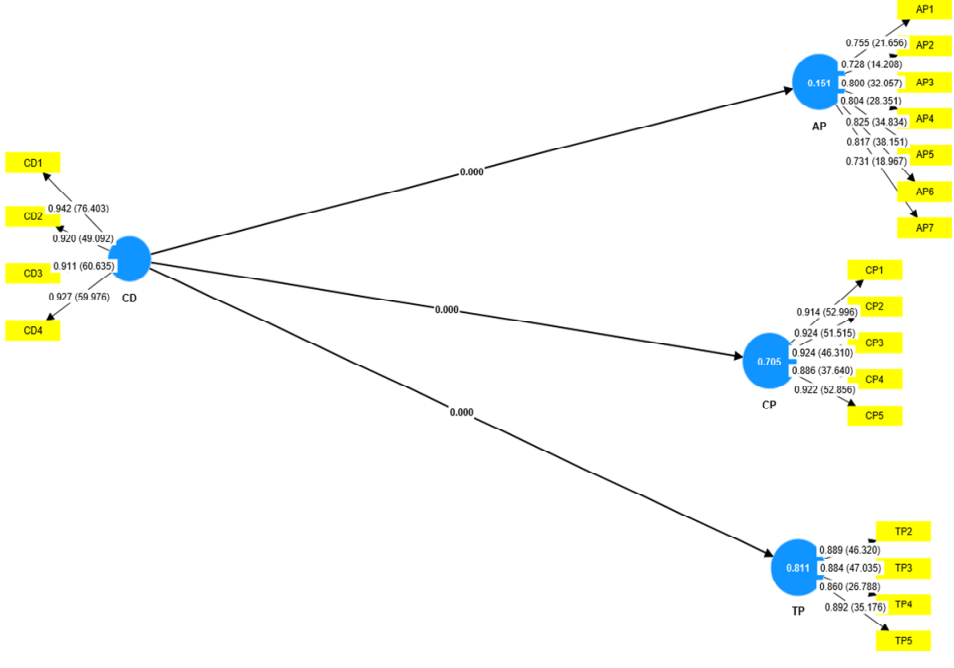
Table 3 Confirmatory factor analysis (CFA)

Code	*Factor loadings*	*Cronbach's alpha*	*rho_a*	*Composite reliability*	*AVE*
CD		0.944	0.945	0.960	0.856
CD1	0.941				
CD2	0.920				
CD3	0.911				
CD4	0.928				
AP		0.893	0.897	0.916	0.610
AP1	0.755				
AP2	0.728				
AP3	0.800				
AP4	0.804				
AP5	0.825				
AP6	0.817				
AP7	0.731				
CP		0.951	0.951	0.962	0.835
CP1	0.914				
CP2	0.924				
CP3	0.924				
CP4	0.886				
CP5	0.922				
TP		0.904	0.908	0.933	0.777
TP2	0.889				
TP3	0.884				
TP4	0.860				
TP5	0.892				
CTP		0.898	0.909	0.924	0.710
CTP1	0.869				
CTP2	0.866				
CTP3	0.858				
CTP4	0.763				
CTP5	0.853				

Table 4 Correlation of study constructs

Construct	*AP*	*CD*	*CP*	*CTP*	*TP*
AP	0.781				
CD	0.388	0.925			
CP	0.437	0.839	0.914		
CTP	0.773	0.341	0.400	0.843	
TP	0.398	0.900	0.895	0.383	0.881
Effect size (Q2)	0.137		0.704	0.102	0.811

Figure 2 Relationship between study variables (see online version for colours)



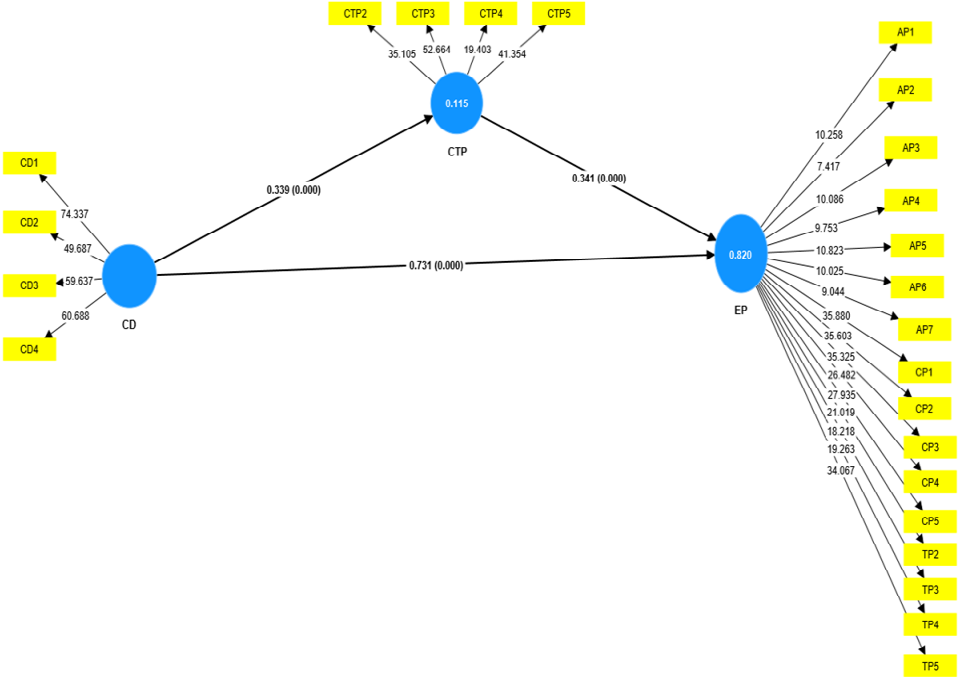
7 Structural model

Figure 2 and Table 5 present the estimation of the research model. The result of the study indicates that COVID-19 induced stress positively and significantly affect adaptive performance (β = 0.388, t = 7.401, p = 0.000), CP (β = 0.839, t = 22.291, p = 0.000) and Task performance (β = 0.900, t = 43.619, p = 0.000). The hypothesis H1, H2 and H3 were all supported by the result of the study.

Table 5 Results of path analysis

Hypothesis	*Path*	*Original sample (O)*	*Standard deviation (STDEV)*	*T statistics (|O/STDEV|)*	*P values*
H1	CD -> AP	0.388	0.052	7.401	0.000
H2	CD -> CP	0.839	0.038	22.291	0.000
H3	CD -> TP	0.900	0.021	43.619	0.000

Figure 3 Mediating analysis (see online version for colours)



8 Mediating effects

The study examined the mediating role of counterproductive behaviour on the direct relationship between COVID-19 induced stress and employee work performance. Table 6 and Figure 3 present the result of the mediation analysis. The result shows that CWB mediates the direct relationship between COVID-19 induced stress and employee work performance ($\beta = 0.116$, $t = 4.468$, $p = 0.000$).

Table 6 Results of mediating analysis

Hypothesis	*Path*	*Original sample (O)*	*Standard deviation (STDEV)*	*T statistics (|O/STDEV|)*	*P values*
H4	CD -> CTP -> EP	0.116	0.026	4.468	0.000

9 Discussion and conclusions

9.1 Discussion

The COVID-19 pandemic with its antecedent challenges led to a high level of work-related stress. It however remains unclear to what extent the employees within the telecommunication sector who played critical roles during the peak of the pandemic were affected and how they responded to the stressful situation of the pandemic. To close the gap in literature, this study explored how the COVID-19 induced stress of workers in the Ghanaian telecommunication industry affected their work performance. What was the role of CWB in mediating the effect of the COVID-19 induced stress on the performance of the employee? For the purpose of this, work performance was proxied by Adaptive performance, CP and task performance. CWB was adopted as mediating variable. The result of the study revealed that COVID-19 induced stress positively influenced adaptive performance, CP and task performance. The study also reported that counterproductive behaviour mediates the direct relationship between COVID-19 induced stress and employee work performance. The findings have significant theoretical and practical implications for the telecommunications industry in a bid to manage the stress level of employees especially post COVID-19.

10 Theoretical implications

In line with the COR theory, the study results contradict the common assumptions that stress generally hampers employee performance. The results of the study postulated that stress as a result of the COVID-19 pandemic seems to enhance the various dimensions of employee work performance. These findings could be explained by the assertion in response to the stressors caused by the pandemic, the employees strived to converse their resources. This led them to adapt, carry out contextual tasks and effectively maintain their task performance in a bid to safeguard and protect their employment and personal resources. The potential influence of counterproductive behaviour as a mediator between stress and performance can also be analysed through the lens of COR theory. Counterproductive behaviours in the workplace may be regarded as activities that deplete resources. Employees may exhibit such behaviours in high-stress situations as a means to alleviate frustration or assert control, despite the potential negative consequences of these actions in the long term (Halbesleben et al., 2014). In the context of a pandemic scenario, an escalation in these behaviours could potentially indicate a coping mechanism employed as a response to the apprehension of resource depletion.

The proposed conceptual model of the study contributes to the extant literature on the COVID-19 induced stress by providing a better and deeper knowledge and understanding of the extant literature on the extent to which the COVID-19 induced stress leads to variations in the work performance of employees. The study also deviates from the numerous studies focusing on health workers as frontline workers and focused on telecommunication workers, given new perspectives on how employees in employment other than the health sector performed during the pandemic.

Although previous empirical studies reported a direct negative effect of COVID-19 induced stress on CP and task performance (Giorgi et al., 2020; Kumar et al., 2021; Liu et al., 2021; Saleem et al., 2021), this study reported a positive direct and significant

effect. The implications of the study results are that the employees though were carrying out a demanding job role during the pandemic, they anticipated a good reward from the role they were engaged in. Furthermore, it can be argued that the managers in the Ghanaian telecommunication industry motivated and gave assurance to their employees. These assurances such as the provision of the COVID-19 personal protective equipment (PPEs) and other level of incentives led to the employees to put in their best efforts to achieve high results on their task performance. Furthermore, with the high level of uncertainty and job losses necessitated by the pandemic, it can be argued that even though the pandemic induced stress among employees, many of the employees took on extra roles in order to impress their superiors in a bid of maintaining their job. This led to a high performance on their CP.

Another significant finding of the study is the effect of COVID-19 induced stress on employee adaptive performance. Like previous empirical findings, the result of the study supports the studies that reported a positive and significant effect of COVID-19 induced stress on employee adaptive performance (Liu et al., 2021; Saleem et al., 2021; Wong et al., 2021). It can be argued that work stress motivates employees in the telecommunications industry to adapt the situation of the COVID-19 through the adoption of innovative means of remaining on top of their job. For instance, the pandemic led to a number of restrictive measures, forcing employees to work from home or adjust their working conditions. This situation led many of the employees to quickly adapt from the normal working hours and conditions in order to provide the best of services to clients. Employees who are able to easily adapt to changes in work conditions and environment without compromising their level of performance are regarded as high assets by many organisations.

A significant contribution of the current study to the extant literature on employee performance is assessing the mediating role of CWB on the relationship between COVID-19 induced stress and employee performance. To the best ability of the researchers, this study is the first study to assess this relationship. The findings contribute significantly to knowledge in this regard. The result of the study concluded that CWB mediates the relationship between COVID-19 induced stress and employee performance. This means that when employees are stressed, they tend to develop CWBs which may negatively affect the output of the employee. When faced with stressful events, individuals are prone to negative emotions such as anxiety and these negative emotions can lead to employees exhibiting inappropriate behaviours which may eventually affect their performance at work (Ma and Li, 2019).

It is crucial to acknowledge that while the study demonstrated favourable impacts on performance, it is essential to recognise that chronic stress can result in burnout. Burnout is characterised by a state of both physical and emotional exhaustion, which has the potential to negatively impact the efficiency of an employee over an extended period (Maslach et al., 2001). Hence, it is imperative that we continuously track the effects of prolonged stress caused by COVID-19 on performance.

10.1 Practical implications

The study's findings have a number of significant practical implications for both organisations and individuals, notably in terms of how to control stress and performance in the face of major global issues like the COVID-19 pandemic. The findings indicate that stress has the potential to enhance adaptive performance, thereby implying that

fostering employee resilience can yield advantageous outcomes. It is advisable for organisations to contemplate the provision of training and resources aimed at assisting employees in effectively managing stress and enhancing their adaptability. The study additionally proposes that counterproductive behaviours function as a mediator in the relationship between stress and work performance. This suggests that it is imperative for organisations to make efforts to address and minimise such behaviours. This could be accomplished by means of encouraging organisational measures, such as safe working conditions, possibilities for stress relief, and positive evaluation mechanisms. Moreover, it is important to acknowledge that stress can have a positive impact on performance. It is crucial to understand that an optimal level of stress, known as 'eustress,' can actually enhance performance. Excessive stress, however, may result in burnout. Therefore, it is imperative for organisations to incorporate stress management programmes in order to maintain stress levels at an optimal level.

11 Conclusions

As a result, this study offers new perspectives on how stress brought on by COVID-19 interacts with unproductive habits and many dimensions of job performance, such as task performance, CP, and adaptive performance. This research demonstrates that, contrary to generally held opinion, pandemic-induced stress may motivate a positive influence on certain performance parameters. The study findings indicate that employees may exhibit enhanced task engagement, adaptability to dynamic situations, and improved CP when experiencing stress. This behaviour can be seen as a potential resource conservation strategy, aligning with the COR Theory proposed by Hobfoll (1989), Hobfoll and Ford (2007). This highlights the capacity for stress to function not solely as a source of threat, but also as a catalyst for productivity and resilience when confronted with exceptional challenges. Simultaneously, it has been observed that CWB serves as a mediator in the direct correlation between stress and employee performance. This suggests that stress may also lead to behaviours that are not advantageous for organisations, highlighting the importance of a balanced and well-managed approach to stress in order to optimise positive outcomes and mitigate potentially harmful behaviours.

Nevertheless, this study has shed light on certain favourable immediate outcomes of stress caused by COVID-19 on job performance. However, it is essential to consider the possible adverse consequences of prolonged stress, such as burnout (Maslach et al., 2001), and the significance of implementing effective stress management techniques in the work environment. In general, these findings emphasise the intricate nature of stress responses and their effects on performance, while also highlighting the significance of individual resilience and organisational support systems.

12 Limitations and future research

This study was a cross-sectional research design with data collected through self-reported measures. Even though Herman's single factor analysis was adopted to rule out the issue of common method variance, the study recommends that future research collect data from both the telecommunication firms and the regulators of the industry in order to limit the issue of common method variance. Though the study contributes significantly to the

extant literature, the study may not be generalised to industries outside the telecommunication industry and to developed economies due to the variance in infrastructure, technology as well as regulatory differences. To enhance the generalisability of future studies, there should be a comparative analysis between developed and developing economies adopting the same variables adopted by this study.

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