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Burnout Predictors among Female Teachers in Selected Senior High Schools in Ghana: The Role of the Copenhagen Burnout Instrument

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Abstract
This study investigated the reliability and internal consistency of the Copenhagen Burnout Inventory (CBI) as a tool for assessing burnout among female teachers in selected senior high schools in Ghana. A quantitative descriptive research design was employed, using purposive sampling to recruit 120 female teachers from four schools. The CBI was administered to measure personal, work-related and student-related burnout dimensions. Data analysis was conducted using the Partial Least Squares Structural Equation Modelling (PLS-SEM) via SmartPLS, focusing on factor loadings, Cronbach's alpha, composite reliability, Average Variance Extracted (AVE) and discriminant validity using the Heterotrait-Monotrait (HTMT) ratio. Results revealed that the CBI demonstrated strong reliability and construct validity across its subscales, confirming its suitability in the Ghanaian context. However, some items with low factor loadings were identified and recommended for removal to enhance scale performance. Regression analysis further indicated that personal burnout was the most significant predictor of overall burnout among the respondents, followed by work-related and student-related burnout. The study recommends the use of a modified CBI for assessing burnout in similar educational contexts and calls for targeted interventions to address personal and emotional stressors among female teachers.

Keywords: Teacher burnout; Copenhagen Burnout Inventory; Maslach Burnout Inventory.

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Introduction

The educational sector in sub-Saharan Africa has witnessed growing structural changes to improve the quality of education to reflect the emerging international standard. It has led to several reforms in the educational sector that require school administrators and teachers to adapt to these policies and their associated

demands. These demands on teachers require that teachers become more mentally, physically and emotionally involved with work and students, which often results in teachers becoming emotionally, physically and physiologically exhausted, leading to burnout, which ultimately affects their general well-being (Maslach & Leiter, 2016; Skaalvik & Skaalvik, 2017).

Burnout has become a global phenomenon in the workplace, with negative consequences for employees and organisations. These include emotional exhaustion, depersonalisation and reduced personal accomplishment (Maslach et al., 2001). Burnout is caused by chronic stress and has been linked to other negative outcomes such as job dissatisfaction, turnover and physical and mental health problems (Schaufeli et al., 2009).

Numerous studies have reported high levels of burnout among teachers, with female teachers being more prone to burnout than their male counterparts (Akram & Malik, 2010; Li et al., 2014). Studies have also shown that burnout is more prevalent among experienced teachers and those who are married (Demerouti et al., 2001; Sohail et al., 2023). These findings suggest that factors such as workload, lack of support and job dissatisfaction contribute to teachers' burnout.

Several instruments measure burnout, including the Maslach Burnout Inventory (MBI) and the Copenhagen Burnout Inventory (CBI). The MBI is the most widely used instrument, but it has been criticised for its length and lack of specificity in its items (Maslach & Leiter, 2008). The CBI was developed as an alternative measure of burnout and is a reliable and valid instrument for measuring burnout in different populations (Kristensen et al., 2005; Hakanen et al., 2006). The CBI measures burnout on three dimensions: personal, work-related, and client-related. Personal burnout refers to the depletion of personal resources, such as energy, motivation and self-esteem. Work-related burnout refers to exhaustion resulting from work-related demands, such as workload and lack of control. Client-related burnout refers to exhaustion resulting from dealing with clients or students, such as emotional and behavioural problems (Kristensen et al., 2005).

Several studies have tested the reliability and validity of CBI in different populations. For example, Kristensen et al. (2005) tested the CBI in a sample of Danish employees and found it to be a reliable and valid measure of burnout. Hakanen et al. (2006) tested CBI in a sample of Finnish physicians and found it to be a valid measure of burnout. In the context of education, several studies have used the CBI to measure burnout among teachers. For example, Choy et al. (2014) used the CBI to measure burnout among primary and secondary school teachers in Hong Kong and found high levels of burnout in all dimensions of the CBI.

This study tested the reliability of the Copenhagen Burnout Inventory as a measure for burnout and its suitability and adaptability in assessing female teachers' burnout in the study context. Additionally, the study aimed to identify the subscale of the Copenhagen Burnout Inventory that most significantly impacts the burnout of female teachers. Even though there have been studies elsewhere assessing burnout in other professions using the CBI, there is a paucity of literature on the suitability of using the CBI in the study context and among the selected population group. When this has thus been determined, the CBI, whose validity and reliability have been proven elsewhere, could be employed to measure burnout, a phenomenon which can potentially affect teacher performance and learner achievement.

Review of the Literature

The Copenhagen Burnout Inventory (CBI) is a widely used measure of burnout developed by Kristensen et al. (2005). The CBI assesses three dimensions of burnout: personal, work-related and client-related. The personal burnout dimension measures exhaustion and fatigue related to personal life while the work-related burnout dimension measures exhaustion and fatigue related to work. Finally, the client-related burnout dimension measures exhaustion and fatigue related to working with clients (Kristensen et al., 2005). The CBI has been translated into several languages and has been used in numerous studies worldwide (Halvorsen et al., 2020). Table 1 (p. 93) is a summary of the components (subscales) of the CBI.

Table 1: Components of the Copenhagen Burnout Inventory (CBI)

Subscale	Focus	Items
Personal Burnout	Measures physical and psychological fatigue and exhaustion regardless of occupational context	PB1. How often do you feel tired? PB2. How often are you physically exhausted? PB3. How often are you emotionally exhausted? PB4. How often do you think," I can't take it anymore"? PB5. How often do you feel worn out? PB6. How often do you feel weak and susceptible to illness?
Work-Related Burnout	Measures burnout related to work context and demands	WB1. Is your work emotionally exhausting? WB2. Do you feel burnt out because of your work? WB3. Does your work frustrate you? WB4. Do you feel worn out at the end of the working day? WB5. Are you exhausted in the morning at the thought of another day at work? WB6. Do you feel that every working hour is tiring for you? WB7. Do you have enough energy for family and friends during leisure time?
Client-Related Burnout	Measures exhaustion related specifically to working with clients/patients/students	SB1. Do you find it hard to work with clients? SB2. Do you find it frustrating to work with clients? SB3. Does it drain your energy to work with clients? SB4. Do you feel that you give more than you get back when you work with clients? SB5. Are you tired of working with clients? SB6. Do you sometimes wonder how long you will be able to continue working with clients?

Reliability of the Copenhagen Burnout Inventory

Reliability is a critical aspect of any measurement tool. It refers to the consistency and stability of scores obtained from the measure over repeated administrations. Reliability can be assessed using different methods, such as test-retest reliability, inter-rater reliability, and internal consistency. In the case of the CBI, internal consistency is the most appropriate method to assess the reliability as it reflects the extent to which items on the measure are correlated with each other (DeVellis, 2017).

While several studies have investigated the reliability and validity of the CBI, the results have been positive. The CBI has been found to have good test-retest reliability, internal consistency, and factor structure. However, some studies have reported mixed results on the factor structure of the CBI, with some studies reporting a three-factor structure and others reporting a two-factor structure. Overall, these studies suggest that the CBI is a reliable and valid measure of burnout in different languages and cultures. The CBI is a useful tool to measure burnout in different occupational groups, and it has several advantages over other burnout measures. For example, CBI is a brief and easy-to-administer measure that can be used in both research and clinical settings. Additionally, the CBI is a reliable and valid measure of burnout in different occupational groups. A summary of key findings of these studies is presented in Table 2 (p. 94).

Validity and Reliability of the CBI in Different Languages

Several studies have examined the psychometric properties of CBI in different languages and cultures. For example, a study

conducted by Schaufeli and Enzmann (1998) developed the Maslach Burnout Inventory General Survey (MBI-GS), which is a widely used measure of burnout. Kristensen et al. (2005) used the MBI-GS as a benchmark to compare the psychometric properties of the CBI. The results showed that the CBI had acceptable internal consistency, with Cronbach's alpha coefficients ranging from 0.72 to 0.89 for the three dimensions of burnout (Kristensen et al., 2005). Another study investigated the internal consistency of the CBI in a sample of Norwegian physiotherapists (Haugan et al., 2011). The results showed that the CBI had high internal consistency, with Cronbach's alpha coefficients ranging from 0.88 to 0.94 for the three dimensions of burnout (Haugan et al., 2011). In a study conducted in Finland, Siltaloppi et al. (2011) investigated the internal consistency of the CBI in a sample of physicians. The results showed that the CBI had high internal consistency with Cronbach's alpha coefficients ranging from 0.82 to 0.91 for the three dimensions of burnout (Siltaloppi et al., 2011).

Table 2: Summary of Studies on the Internal Consistency of the Copenhagen Burnout Inventory

Study	Country	Participants	Cronbach's Alpha	Dimension(s) Assessed
Beurskens et al. (2000)	Netherlands	Healthcare workers	0.89-0.91	Personal, work-related, client-related
Halbesleben and Buckley (2004)	USA	Healthcare workers	0.85-0.89	Personal, work-related, client-related
Kristensen et al. (2005)	Denmark	Various occupational groups	0.76-0.91	Personal, work-related, client-related
Schaufeli and Van Dierendonck (2000).	Netherlands	Various occupational groups	0.79-0.91	Personal, work-related, client-related
Sundin et al. (2011)	Sweden	Police officers	0.87-0.90	Personal, work-related
Wang et al. (2014).	China	Nurses	0.81-0.92	Personal, work-related, client-related

Similarly, a study by Figueiredo-Ferraz et al. (2013) examined the psychometric properties of the Spanish version of the CBI in a sample of university employees. The study reported good internal consistency coefficients for the three subscales, ranging from 0.79 to 0.89 and evidence of the validity of the construct based on correlation with related constructs such as job satisfaction and mental health. Another study by Yildirim et al. (2021) examined the psychometric properties of the Turkish version of the CBI in a sample of healthcare workers. The study reported high internal consistency coefficients for the three subscales, ranging from 0.87 to 0.92 and good construct validity based on correlation with related constructs, such as job demands and emotional exhaustion. In addition, a study by Andersen et al. (2010) investigated the internal consistency of the CBI in a sample of 177 Danish human service workers. The results showed that Cronbach's alpha coefficient for the CBI was 0.91, indicating a high internal consistency. The study concluded that the CBI is a reliable measure of burnout in human service workers.

Another study by Gundersen et al. (2016) investigated the internal consistency of the CBI in a sample of 133 Norwegian ambulance personnel. The results showed that Cronbach's alpha coefficient for the CBI was 0.93, indicating a high internal consistency. The study concluded that CBI is a reliable measure of burnout in ambulance personnel. Furthermore, a study by Henriksen and Lukasse (2016) investigated the internal consistency of the CBI in a sample of 228 Norwegian nurses. The results showed that Cronbach's alpha coefficient for the CBI was 0.93, indicating high internal consistency. The study concluded that the CBI is a reliable measure of burnout in nurses.

Limitations of the CBI

It is important to note that the Copenhagen Burnout Inventory (CBI) should not be used as the sole measure of burnout. It should be used in conjunction with other measures of burnout and related constructs (Kristensen et al., 2005; Milfont et al., 2008). Despite the strengths of the CBI, there are some limitations to consider. One limitation is that CBI only measures

burnout from a personal perspective, without considering contextual factors, such as job demands or organisational culture (Nerstad et al., 2010). Therefore, it may be useful to complement the CBI with other measures that capture the external factors that contribute to burnout, such as the Maslach Burnout Inventory (MBI) or the Job Demands-Resources (JD-R) model (Maslach & Jackson, 1981; Bakker & Demerouti, 2007). Another limitation is that CBI focuses primarily on exhaustion while not explicitly capturing dimensions, such as a reduced sense of personal accomplishment or emotional detachment from patients or clients, which are central to other models of burnout (Maslach et al., 2001; Schaufeli & Taris, 2005). Therefore, it may be useful to develop or adapt measures that incorporate these additional dimensions of burnout.

Methodology

This section outlines the research methodology in terms of design, population and sampling, instrumentation, validity and reliability, treatment of data and ethical considerations.

Research Design

A quantitative descriptive research design was employed for the study with the aim of systematically describing characteristics of the population or phenomena, using numerical data.

Population and Sampling

The empirical context of this study comprises selected female teachers from senior high schools located in the Western Region of Ghana. A structured and adapted research instrument (CBI questionnaire) was administered to these participants. Out of the 180 questionnaires distributed, 120 were completed and deemed suitable for analysis. The sample was purposively drawn from four senior high schools across two municipalities—Tarkwa-Nsuaem and Prestea-Huni Valley. Even though this was a quantitative study, purposely sampling the respondents was acceptable because of the peculiarity of the context. Teachers in the various high schools were predominantly male; therefore, the researchers had to purposively select the female teachers in these schools and secure their consent and willingness to participate in the study (Edmonds & Kennedy, 2017; Andrade, 2021, as cited in Memon et al., 2025).

Instrument

Data was collected through a survey, using the Copenhagen Burnout Inventory (Questionnaire). Multiple channels (printed copies of the questionnaires and the Google form) were used to provide the survey instrument and gather data from the respondents. All ethical issues regarding integrity, anonymity and confidentiality were observed.

Validity and Reliability

To test the validity and reliability of the CBI, the instrument was piloted with twenty female teachers in other senior high schools in the locality. The first reliability test gave a Cronbach's Alpha coefficient of .915.

Treatment of Data

The internal consistency of the CBI was tested using the factor loading on the Partial Least Squares Structural Equation Modelling (PLS-SEM) and the Cronbach alpha. Cronbach's alpha close to 1.0 indicates that the item is considered to have a high internal consistency reliability, above 0.8 is considered good, 0.7 is acceptable, and 0.6 or less is considered to be poor (Sekaran, 2003). However, for a new scale, 0.5 and above is deemed appropriate and acceptable. The choice of using the PLS-SEM, a novel second-generation multivariate statistical technique, is based on its ability to deal with reflective multilevel constructs that are not easy to deal with in a single covariance-based SEM. PLS-SEM uses a proxy of interest, which are weighted as a composite of indicator variables for a particular construct (Birkie et al., 2017; Hair et al., 2019). Construct validity was also carried out on the scale since each measure on the scale was measured with multiple indicators. The convergent validity was determined using factor loading, Composite Reliability (CR) and average variance extracted (AVE) (Fornell & Larcker, 1981). The divergence was carried out using the Heterotrait-Monotrait (HTMT) ratio correlation and cross-loading

Ethical considerations

The researchers followed clear ethical protocols to ensure that the anonymity, safety and confidentiality of respondents were not violated. Before the administration of the questionnaires, the participants were allowed to read and discuss any item on the questionnaire with the researcher and given the opportunity to

continue or withdraw from the study, if they so wished. Additionally, participants' data were kept safely and securely, even upon completion of this particular study and subsequent academic publication.

Results and Discussions

This section details the study's findings. The findings section is guided by two research questions.

Research Question 1: What is the validity and reliability of the Copenhagen Burnout Inventory as a measure of female teacher burnout in the study context?

In answering this research question, the study used the partial least-squares structural equation modelling (PLS-SEM). PLS-SEM requires that each indicator must only be associated with a single latent construct; hence, the measurement model, therefore, calculates predictive relationships between observed indicators and latent variables to help determine this (Hair et al., 2018). In PLS-SEM, two main criteria (reliability and validity) must be achieved through the measurement before conducting the structural model analysis. The measurement model analysis focuses on identifying two items described as follows: (i) the relationship between constructs and items and (ii) the correlational relationships between constructs.

Assessment of Construct Reliability

Construct reliability is assessed using factor loadings, Cronbach's Alpha, and composite reliability. The priority of PLS-SEM is the reliability of individual indicators (Hair et al., 2018). The factor loadings for the observed indicators of the latent variables are shown in the outer model of Figure 1.

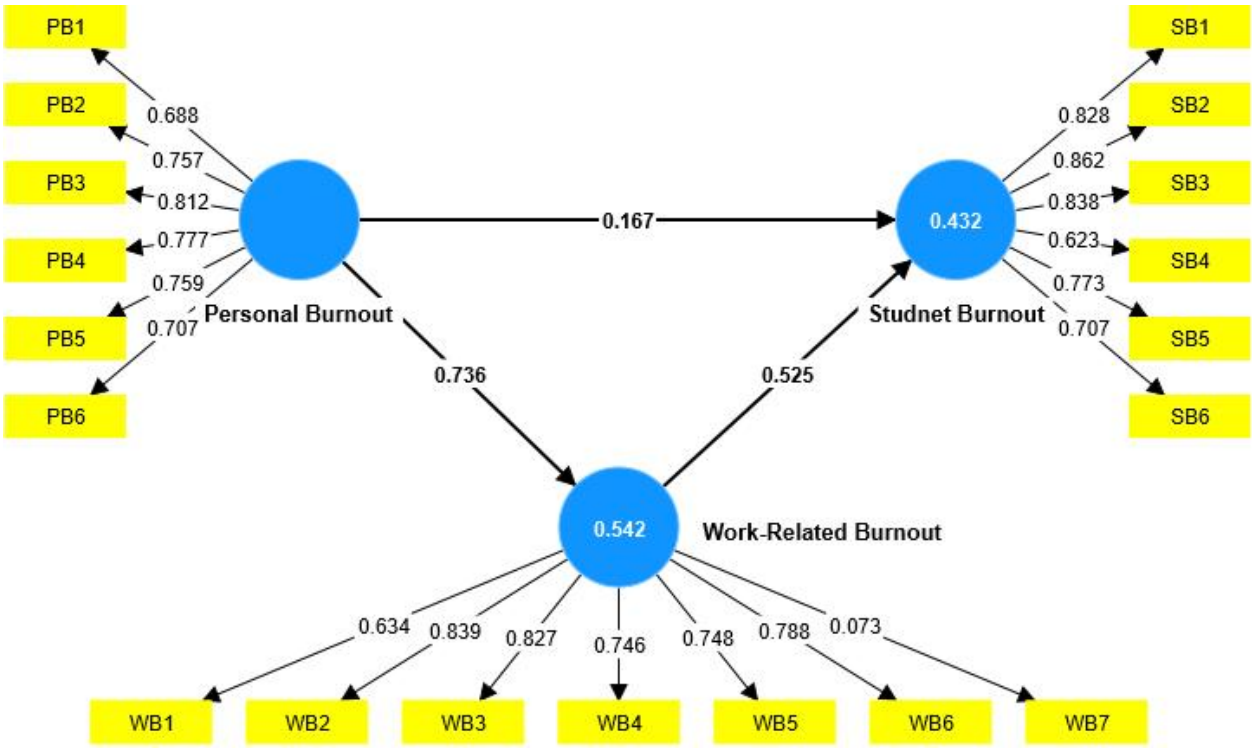

Figure 1: Measurement Model (Source: Researcher Computation via SmartPLS V4.0.9)

The summary of the factor loadings for each construct as well as the Cronbach's Alpha and composite reliability of each construct is shown in Table 3 (p. 97), which reveals that all indicators of personal burnout had good factor loadings of above 0.7 based on Hair et al. (2019) recommendation, except PB1, which had a factor loading of 0.688, which is below the acceptable threshold of 0.7. Similarly, items WB1 and WB7 under work-related burnout did not load well, as their factor loadings were 0.634 and 0.073, respectively, with WB7 having the least factor loading of all indicators. Additionally, the factor loading for items under student burnout was > 0.7 except for SB4 (0.623), which is also below the acceptable threshold suggested by Hair et al. (2022). Indicator loadings above 0.7 are advised, since

they show that the construct accounts for more than 50% of the variation of the indicator, resulting in adequate indication dependability (Hair et al., 2022).

Table 3: Construct Reliability Statistics

First Order Constructs	Item	Loadings	Cronbach's Alpha	Composite Reliability	Internal Consistency
Personal Burnout (PB)	PB1	0.688	0.845	0.847	Yes
	PB2	0.757			
	PB3	0.812			
	PB4	0.777			
	PB5	0.759			
	PB6	0.707			
Work-Related Burnout (WB)	WB1	0.634	0.816	0.871	Yes
	WB2	0.839			
	WB3	0.827			
	WB4	0.746			
	WB5	0.748			
	WB6	0.788			
	WB7	0.073			
Student Burnout (SB)	SB1	0.828	0.865	0.875	Yes
	SB2	0.862			
	SB3	0.838			
	SB4	0.623			
	SB5	0.773			
	SB6	0.707			

Source: Researcher's Computation via SmartPLS V4.0.9

Table 4: Adequacy of the Scale

S/N	Variables	KMO Measure of Sampling Adequacy	Bartlett's Test of Sphericity	Remark
	Personal Burnout	0.808	233.080 (0.000)	Accepted
	Work-Related Burnout	0.862	240.881 (0.000)	Accepted
	Student Burnout	0.848	276.089 (0.000)	Accepted

Furthermore, Table 3 reveals that Cronbach's alpha results for the three constructs, personal burnout, work-related burnout and student burnout are 0.845, 0.816, and 0.865, which are > 0.8, indicating good internal consistency (Sekaran, 2003). To further confirm the reliability of the constructs, the composite reliability results 0.847, 0.871, and 0.875 obtained from the model reveal good internal consistency since they are all > 0.8.

Table 4 shows the result for the sampling adequacy, using the Kaiser-Meyer-Oklin (KMO) and Bartlett's test of sphericity. To further validate the research instrument, factor analysis using principal component analysis was used through the Kaiser-Meyer-Olkin (KMO) test to measure the suitability of the data to the study and the sampling adequacy for each variable in the model. A KMO greater than 0.5 is required for the variable to be accepted. However, values between 0.5 and 0.7 are average, 0.7 and 0.8 are good while values between 0.8 and 0.9 are very good, according to Hair et al. (2018). In addition, the Bartlett test of sphericity evaluates the strength of the relationship among the constructs. In Table 4, the KMO values show a very good result for the three constructs, as the values were above 0.8, showing that the sample size employed to verify the validity and reliability is adequate. Similarly, the Bartlett test values were statistically significant as the probability values are below the 0.05 threshold, which reveals that the factor analysis performed is appropriate.

Assessment of Convergent Validity

The degree to which a measure (indicator) correlates positively with alternative measures (indicators) of the same construct is known as convergence validity (Hair et al., 2017). When indicators are in a reflective relationship with a construct, or when numerous indicators are

employed to assess the same construct, these indicators are known to share a large proportion of variance or convergence (Hair et al., 2022). The convergent validity was determined using factor loading, Composite Reliability (CR) and average variance extracted (AVE) (Fornell & Larcker, 1981). The convergent validity for the three constructs for this study is shown in Table 5.

The results of Table 5 show that the AVE value of all constructs is greater than 0.5. An AVE of 0.5 or greater indicates that a construct explains half or more of the variation of its indicators, thus indicating convergent validity (Cheung et al., 2024).

Factor loadings can also be used to evaluate a convergent validity and the outer loadings of an indicator should be more than 0.700 (Hair et al., 2017). This threshold value was chosen mostly because squaring the factor loadings with a score of 0.7 results in a value of 0.5, which represents the communality of the items of a construct. The variance extracted, or communality value, measures how much of an item's variation can be accounted for by a given idea (Hair et al., 2014). A construct may explain 50% or more of the variation in an item if it has a communality rating of 0.5 or higher. Thus, factor loadings can be used to assess convergence validity together with the AVE.

Table 5: Construct Convergent Validity Statistics

First Order Constructs	Item	Loadings	Composite reliability	AVE	Convergent Validity
Personal Burnout (PB)	PB1	0.688	0.847	0.564	Yes
	PB2	0.757			
	PB3	0.812			
	PB4	0.777			
	PB5	0.759			
	PB6	0.707			
Work-Related Burnout (WB)	WB1	0.634	0.871	0.504	Yes
	WB2	0.839			
	WB3	0.827			
	WB4	0.746			
	WB5	0.748			
	WB6	0.788			
	WB7	0.073			
Student Burnout (SB)	SB1	0.828	0.875	0.602	Yes
	SB2	0.862			
	SB3	0.838			
	SB4	0.623			
	SB5	0.773			
	SB6	0.707			

Source: Researcher's Computation via SmartPLS V4.0.9

In social science investigations, researchers commonly receive weaker indicator loadings (0.708) for their measurement models, particularly when using newly constructed scales (Hulland, 1999). Researchers should carefully explore the implications of indicator removal on other reliability and validity metrics rather than automatically removing indicators when their loading is less than 0.70. In general, indicators with loadings between 0.40 and 0.708 should only be removed if doing so causes the internal consistency reliability or convergent validity (addressed in the next sections) to rise above the advised threshold value. The internal consistency reliability results when PB1, WB1, WB7 and SB4 were removed from the model showed no significant change with the Cronbach Alpha values for the three constructs becoming 0.839, 0.856 and 0.871 compared to 0.845, 0.816, and 0.865 obtained from the model before the items were removed. The composite reliability values were now 0.842, 0.866, and 0.882 compared to 0.847, 0.871, and 0.875 obtained from the earlier model.

The impact that the removal of an indicator will have on a construct's content validity (the degree to which a measure accurately captures all aspects of a certain construction) is another factor to take into account when deciding whether to remove an indicator. As a result, indicators with weaker loadings are occasionally kept. However, it is always

advisable to remove indicators with very low loadings (below 0.40) from the measurement model (Hair et al., 2022). While indicators with loadings of 0.50 that are statistically significant are considered relevant (Hair et al., 2022).

When all items with factor loadings below 0.7 are removed from the Copenhagen Burnout Inventory model, as shown in Figure 2, the model then becomes more statistically reliable in assessing the phenomenon.

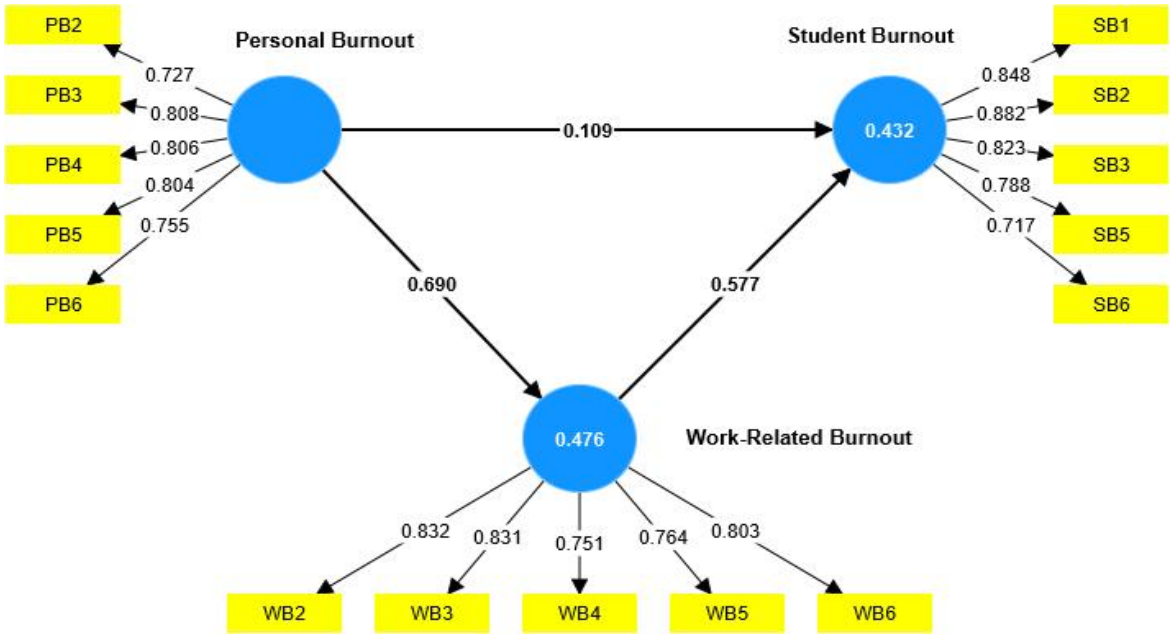

Figure 2: Adjusted Measurement Model (Source: Researcher Computation via SmartPLS V4.0.9)

Table 6: Factor Loadings (after removing WB7

	Personal Burnout	Student Burnout	Work-Related Burnout
PB2	0.727		
PB3	0.808		
PB4	0.806		
PB5	0.804		
PB6	0.755		
SB1		0.848	
SB2		0.882	
SB3		0.823	
SB5		0.788	
SB6		0.717	
WB2			0.832
WB3			0.831
WB4			0.751
WB5			0.764
WB6			0.803

In Table 6, the factor loadings for each construct indicator show that most of the indicators in this scenario met the 0.7 requirement, except for four items (PB1, WB1, WB7, and SB4). Indicators with less loading are kept since convergent validity was achieved for each of the constructs. Indicators with outer loadings between 0.4 and 0.699 should be taken into account for deletion, according to Hair et al. (2022), if they increase composite reliability and AVE above the accepted threshold value. In this study, the composite reliability was achieved, and AVE was demonstrated to be higher than the threshold value.

Assessment of Divergent Validity

Divergent validity analysis is conducted to ensure that the individual constructs are truly different from each other. In the context of this study, divergent analysis was performed using the Heterotrait-monotrait (HTMT) ratio correlation and cross-loading as shown in Table 7.

In Table 8 there is the cross-loadings between the constructs in the study. Using this method of divergent analysis of comparing the cross-loadings between constructs, it is important to note that each scale item should load high on its construct and low on other constructs. As presented in Table 8, all items are observed to load high on their construct but low on the other constructs, thus proving that the three constructs are distinctly different from each other. Therefore, divergent validity is established for the personal burnout, work-related burnout, and student burnout constructs used in this study.

Table 7: Heterotrait-monotrait ratio (HTMT)

	Personal Burnout	Student Burnout	Work-Related Burnout
Personal Burnout			
Student Burnout	0.645		
Work-Related Burnout	0.834	0.724	

Source: Researcher's Computation via SmartPLS V4.0.9

Table 8: Cross-Loadings of Constructs to Assess Divergent Validity

	Personal Burnout	Student Burnout	Work-related Burnout
PB1	0.688	0.421	0.606
PB2	0.757	0.466	0.534
PB3	0.812	0.392	0.579
PB4	0.777	0.43	0.594
PB5	0.759	0.405	0.537
PB6	0.707	0.367	0.44
SB1	0.445	0.828	0.57
SB2	0.475	0.862	0.594
SB3	0.399	0.838	0.483
SB4	0.436	0.623	0.381
SB5	0.448	0.773	0.52
SB6	0.363	0.707	0.431
WB1	0.418	0.313	0.634
WB2	0.583	0.546	0.839
WB3	0.661	0.674	0.827
WB4	0.653	0.332	0.746
WB5	0.527	0.492	0.748
WB6	0.49	0.513	0.788
WB7	-0.04	-0.117	0.073

Source: Researcher's Computation via SmartPLS V4.0.9

Based on the Cronbach's alpha and AVE values of the CBI inventory presented in Tables 3 and 5, which exceeded the benchmark of 0.7 and 0.5, respectively (Fornell & Larcker, 1981, Hair et al., 2019; Hair et al., 2022), we can conclude that CBI inventory as a measure of burnout is reliable, valid, and suitable for assessing the burnout of the female teachers. Hence, they are a reliable and valid measure of the CBI. However, the following items in the CBI inventory could be removed when conducting studies within this context and similar ones because their factor loadings were below the threshold of 0.7 as revealed in Table 3.

PB1. How often do you feel tired?
WB1. Is your work emotionally exhausting?
WB7. Do you have enough energy for family and friends during leisure time?
SB4. Do you feel that you give more than you get back when you work with clients?

Research Question 2: Which of the subscales of the Copenhagen Burnout Inventory most significantly impacts the burnout of female teachers?

In determining which of the sub-scales of the CBI (personal burnout, student burnout and work-related burnout) most significantly affects the burnout of the female teachers, the subscale with the highest beta value has the highest effect or most significantly affects the CBI. The regression analysis indicated the results summarised in Table 8.

Table 8: Summary Regression and Correlation

Model	Unstandardized coefficient (B)	t	Sig	R	R2
Constant	12.201	16.925	.000		
PB	0.8333	13.995	.000	0.815	0.664
WB	0.775	20.367	.000	0.807	0.807
SB	0.639	16,831	.000	0.741	0,741

$$CBI = \alpha_0 + \beta_1 PB + \beta_2 WB + \beta_3 SB + \mu_i \quad \text{----------eqn 1}$$

$$CBI = 12.201 + 0.833PB + 0.775WB + 0.639SB + \mu_i \quad \text{----------eqn 1}$$

In determining which of the sub-scales of the CBI (Personal Burnout (PB), Work-Related Burnout (WB), and Student Burnout (SB)) most significantly affect the burnout of the female teachers, the result revealed that personal burnout has the highest significant effect of $\beta = 0.833$, followed by work-related burnout with a beta value of 0.775; the burnout subscale with the least significant effect is student burnout with a beta value of 0.639.

These results are supported by their respective correlation value, which also shows that personal burnout has the strongest relationship with a correlation coefficient of 0.815, followed by work-related burnout with a correlation coefficient of 0.807, and the weakest relationship is caused by student burnout with a correlation coefficient of 0.741.

This outcome of the study is supported by Kristensen et al (2005), who found that personal burnout reflects a generalised exhaustion, often heightened in emotionally demanding professions like teaching. The fact that personal and emotional factors are the highest predictors of female teacher burnout is also attested to by the literature (Seidler et al., 2014; Skaalvik & Skaalvik, 2015; Antwi et al, 2020). In sum, the study indicated that though the three sub-scales significantly affect the burnout level of female teachers, personal burnout is the most significant.

Conclusions

The study concludes that when items PB1, WB1, WB7 and SB4 are removed from the CBI subscales, the instrument is still a valid and reliable measure of female teachers' burnout. Furthermore, the study concludes that the strongest indicator of female teacher burnout on the CBI is personal burnout factors, a fact attested to by the literature.

Recommendations

The study, therefore, recommends the modified CBI for use in assessing female teachers' burnout in contexts that are similar to the study context. The study further recommends the provision of work-related support and training to enable female teachers deal adequately with the professional and social demands made on them. Any unresolved stressors have the potential affecting their performance and student learning outcomes.

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