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Psychological Capital and Teacher Well-Being: The Mediation Role of Coping with Stress and Work Task Motivation

PhD Dissertation

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DISSERTATION SUMMARY

This study aimed to explore the mediation role of work task motivation (WTM) and coping with stress (CWS) in the relationship between psychological capital (PsyCap) and teacher well-being (TWB) in the cultural context of Ethiopia. Our broader goal is to develop an integrated teacher well-being model based on the contemporary theories of positive psychology, coping appraisal, conservation resources, self-determination of motivation and emerging teacher well-being. Using an associational and quantitative with a cross-sectional design, 3517 university instructors participated in the research.

Consequently, we firstly examined the cross-cultural validation of psychological capital questionnaires (PCQ-12; Luthans et al., 2007), work task motivation scale for teachers (WTMST; Fernet et al., 2008), coping with stress questionnaire (CWS-Q; Rabenu et al., 2016), and teacher well-being scale (TWBS; Collie et al., 2015) using single and multi-modal confirmatory factor analysis. As a result, the PCQ-12, WTMST, CWS-Q, and TWBS were well-matched to the data and showed solid psychometric properties, making them suitable for use in the Ethiopian educational context. Besides, the PCQ-12, WTMST, CWS-Q and TWBS were equal across gender and university type and thus showed a potential to become psychometrically valid in Ethiopian higher education settings. Secondly, we tested the mediation role of work task motivation in the relationship between psychological capital and teacher well-being. This evidence may assure the predictor role of the PsyCap, WTM predicting TWB and WTM mediating role in the connection between PsyCap and TWB. Besides, we have evidenced the dimensions of motivation mediating role in the relationship between PsyCap and elements of TWB. Thirdly, based on the second study result, we added the coping with stress construct to assess its mediating role in the relationship between PsyCap and TWB. Fourthly, we merged and examined work task motivation and coping with stress mediation's role in the relationship between PsyCap and TWB and the socio-demographic factors' role on the constructs in Ethiopian higher education cultural settings.

Finally, the findings suggested various recommendations for further educational and psychological studies.

In conclusion, the result showed that work task motivation and coping with stress dimensions fully mediate the relationship between PsyCap and components of teacher well-being. Besides, work task motivation and coping with stress positively predicted teachers' well-being and fully mediated the relationship between PsyCap and teachers' well-being. In addition, the PsyCap, WTM, and CWS results promise to improve teacher well-being in Ethiopia. The

PCQ-12, WTMST, CWS-Q, and TWBS had good psychometric properties in the Ethiopian setting and are potentially helpful for other studies. However, future studies should consider to survey both public and private universities administrators and students to corroborate the findings from university teachers' surveys. Nonetheless, teachers' PsyCap, WTM, CWS and TWB are of high importance, and the PCQ-12, WTMST, CWS-Q and TWBS appear to be valuable tools for assessing university teachers' healthy functioning at work for intervention design in the Ethiopian higher education setting.

ABBREVIATIONS

AIC	Akaike Information Criterion
ANOVA	Analysis of variance
AVE	Average Variance Extracted
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CR	Composite Reliability Coefficient
CWS-Q	Coping With Stress Questionnaire
CWS	Coping With Stress
HERO	Hope Efficacy Resilience Optimism
IBM AMOS	International Business Machines of Analysis of a Moment Structures
IBM SPSS	International Business Machines of Statistical Package for Social Sciences
MI	Measurement Invariance
MSV	Maximum Shared Variance
PCQ-12	Psychological Capital Questionnaire-Short Version
PHQ-4	Patient Health Questionnaire of Depression and Anxiety
PsyCap	Psychological Capital
RMSEA	Root-Mean-Square Error of Approximation
SD	Standard Deviation
SES	Socioeconomic Status
SWLS	Satisfaction With Life Scale
TLI	Tucker-Lewis index
Tukey HSD	Tukey Honestly Significant Difference
TWB	Teacher Well-Being
TWBS	Teacher Well-Being Scale
WTM	Work Task Motivation
WTMST	Work Tasks Motivation Scale for Teachers
ΔCFI	Change Confirmatory Factor Analysis
ΔRMSEA	Change Root-Mean-Square Error of Approximation
ΔTLI	Change Tucker-Lewis's index

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1. INTRODUCTION

1.1.Context of the study

Teaching can be a noble profession involving meaningful, influential, changing societal lives and the source of wisdom to all professions. However, teaching can also be challenged due to several factors. Research has shown that teachers are the most important in-school factor contributing to student success, satisfaction, and achievement, and it has potential benefits for education and organizational settings (Collie et al., 2015; McCallum et al., 2017). However, many teachers left the profession when they compared their training and knowledge to other private sector opportunities and benefits (Zewude & Herz, 2021). Furthermore, it is noted that up to one-third of teachers are stressed out and forced to leave the profession within the first five years of teaching (Collie et al., 2015; Geving, 2007). Besides, in Africa and Asia, many teachers do not report a sense of positive well-being. For example, the latest statistics reveal that 25% - 40% of novice teachers are exiting the profession due to burnout (Collie et al., 2015; Pillay et al., 2005). The seriousness of the issue inspired the researchers, administrators, and policy-makers have become more interested in the teachers' well-being as a research theme (Duckworth et al., 2009); due to its vital role in society and schools (Hascher & Waber, 2021).

Research has indicated that teacher well-being is deeply connected to the quality of work and impacted by several factors such as work task motivation, coping with stress and psychological capital (e.g., Ferraro et al., 2018; Rabenu et al., 2017; Youssef-Morgan & Luthans, 2015; Zewude & Hercz, 2021; 2022).

Teacher well-being is a primary construct that has played a significant role in teachers' healthy functioning at work. For several decades, teacher well-being has been examined by focusing on the pathological aspect of children, adolescents, and adults (Collie et al., 2015; Milatz et al., 2015; Spilt et al., 2011). However, the positive psychology movement recently became an increasingly important consideration in improving teachers' mental health and well-being in organizational and educational settings (Page & Vella-Brodrick, 2009; Youssef-Morgan & Luthans, 2015). Its main goal has been to change from adversity to building a flourishing and optimal life (Seligman & Csikszentmihalyi, 2000). For instance, Day et al. (2006) reported that "if teachers are to teach well, they must be well", and their sense of positive professional identity and well-being is vital. Therefore, investigations that develop an understanding of well-being among teachers are essential for the teachers, students, schools, and the globe (Collie et al., 2015; Duckworth et al., 2009; Milatz et al., 2015; Pakarinen & Kiuru,

2010) and teacher well-being is critical for the future of education (Collie et al., 2015; McCallum et al., 2017).

Studies noted that psychological capital, work task motivation and coping with stress have predictive power on teachers' well-being; therefore, precise assessment and research are essential (e.g., Datu et al., 2018; Ferraro et al., 2018; Li, 2018; Rabenu et al., 2016; Vîrgă & Pavilion, 2015; Zewude & Mária, 2021, 2022). Teachers with positive work task motivation, basic coping skills and positive psychological resources will have a higher level of teacher well-being (e.g., Rabenu et al., 2016; Zewude & Herz, 2021). These positive resources are used to flourish work-life balance and enable teachers to establish the best relationship among staff, students, and the institutions. As a result, the four selected studies of this dissertation project targeted Ethiopia's higher education teachers.

Ethiopia is a country in sub-Saharan Africa with a population of 120 million and a recent history of universities. However, Ethiopia's non-spiritual higher education began in the 1950s with two universities (World Bank, 2003). Several reforms were made following its rapid growth, including access, equity, unity with diversity, relevance, quality, international competition and collaboration, research and publication, technology transfer, community service, and efficiency (Ministry of Education, 2018). However, such reforms only partially addressed the difficulty of universities in retaining qualified and motivated academic staff and did not address teacher well-being (Alemayehu & Woldemariam, 2020; Zewude & Hercz, 2021; 2022). As a result, a trend observed in the country was that university teachers exit the profession due to a lack of motivation, poor well-being, and no further interest in continuing teaching. For instance, some studies have been conducted in Ethiopia to examine various issues related to the challenges of universities. A few examples (Abebe & Woldehanna, 2013) were limited financing, mismatch between student number and academic staff (Boateng, 2020), problems with leadership, management, and work environment of teachers (Gemeda & Tynjälä, 2015), lack of merit-based assignment of university leaders, lack of sustainable need-based academic training for university staff (Egne, 2021), lack of academic freedom and institutional interference, low salaries, high levels of work stress (World Bank, 2017), and problems associated with well-being, school management, and motivation.

Even though these studies have been conducted on higher institutions in Ethiopia, the current study is novel for the following reasons. First, the teacher well-being, psychological capital (PsyCap), work task motivation (WTM) and coping with stress(CWS) measures are

taken from North American, European and Asian countries. Unfortunately, none of such studies appears to have been conducted in Ethiopia. Therefore, sophisticated validated tools such as Psychological Capital Questionnaire (PCQ-12), Work Task Motivation Scale for Teachers (WTMST), Coping With Stress Questionnaire (CWS-Q) and Teacher Well-Being Scale (TWBS) offers exclusively intended for assessing university instructors' in the Ethiopian higher education context. Second, Psychological Capital(PsyCap), Work Task Motivation (WTM) and Coping With Stress (CWS) were also viewed as relevant, applicable, and worthy of inclusion to enhance TWB in this study. However, studies on TWB and its association with PsyCap, WTM and CWS were hardly found in the Ethiopian cultural context when this study was formulated. Therefore this study aimed to examine the potential mediating role of WTM and CWS in the relationship between PsyCap and TWB in the Ethiopian educational setting. This constitutes a research gap that the present study attempts to fill.

1.2.Statement of the Problem

One of the work task domains of well-being that is rarely researched is teacher well-being (Collie et al., 2015; Zewude & Hercz, 2022). Many studies targeting negative indicators of teacher functioning have been conducted, but more recently, following the mainstream of positive psychology, more attention has been devoted to teachers' well-being. Teacher well-being attributes that help university teachers include developing a positive work attitude, feeling good, improving professional development, improving the social network, establishing a positive relationships and arousing interest (e.g., Acton; Adler, 2016; Collie et al., 2015; Culbertson et al., 2010; Zewude & Hercz, 2022). Previous works on teacher well-being (e.g., Collie et al., 2015) have also reported that this area is still under-researched and primarily examined by focusing on its pathological lens (Spilt et al., 2011). However, the contemporary study on positive psychology and well-being is drastically expanding (Cooke et al., 2016). Positive psychology's main objective is to change from adversity to building a flourishing and optimal life (Seligman & Csikszentmihalyi, 2000).

Studies have indicated that PsyCap, WTM and CWS are the key predictors of TWB (Ferraro et al., 2018; Rabenu et al., 2017; Youssef-Morgan & Luthans, 2015; Zewude & Hercz, 2021; 2022). Therefore teacher well-being is an essential core construct associated with PsyCap, WTM and CWS to result in positive outcomes (Ferraro et al., 2018; Rabenu et al., 2017; Zewude & Hercz, 2021; 2022). These important constructs to teacher well-being are crucial for the positive functioning of their work. Therefore, the topic has attracted global

attention (Collie et al., 2015). Generally, in this study, the TWB assessments emphasize task-based factors (e.g., Collie et al., 2015) that are different from the previous general proposed models (e.g., Diener & Chan, 2011; Ryff & Keyes, 1995; Van Horn et al., 2004). Besides, teacher well-being, such as teachers' relationship, workload, organizational well-being, work task motivation, coping strategies and use of positive psychological resources in staying with their profession, have been documented to be necessary for both the teachers and the universities (Zewude & Hercz, 2021). Failure to assess teacher well-being (Collie et al., 2015), their work task motivation (Fernet et al., 2008), coping strategies (Rabenu and Yaniv, 2017) in their daily tasks, and their positive psychological resources(Luthans et al., 2015) affect the teaching profession, the teachers themselves, students, the institutions and the nation (Duckworth et al., 2009). The lack of research on TWB, CWS, WTM and PsyCap and their association makes it challenging to provide intervention (Zewude and Hercz, 2021) since teachers lack motivation and have poor well-being (Collie et al., 2015). The association among PsyCap, CWS, WTM and TWB are potential resources required for a stressful profession like teaching (Li, 2018; Youssef-Morgan & Luthans, 2015; Vîrgă & Paveloni, 2015; Viseu et al., 2016; Zewude & Hercz, 2021).

Other scholars have also reported that socio-demographic factors play a potential role in teacher well-being, especially in developing nations such as Ethiopia (Khumalo et al., 2012; Tay et al., 2014; Vosloo et al., 2009; World Bank, 2017).

This investigation is justifiable for several reasons. First, it is preliminary to test the psychometric properties of the brief version of the PCQ-12 (Luthans et al., 2007), WTMST (Fernet et al., 2008), CWS-Q (Rabenu et al., 2016), and TWBS (Collie et al., 2015) of the university teachers in terms of reliability (Cronbach's alpha and composite reliability), validity (convergent, discriminant, divergent, and construct) and measurement invariance (configural, metric, scalar, and residual). Second, notwithstanding the significance of PsyCap, WTM and CWS are the most potent predictors of teacher well-being of the university staff are lacking. Third, this study is grounded on theoretically applicable and recent theories such as the Positive Psychology Theory (Seligman, 2011), the Self-Determination Theory (SDT) of motivation (Ryan and Deci, 2017), the Conservation of Resources Theory (COR) (Hobfoll, 1989), and the Broaden-and-Build Theory of Positive Emotions (BBPE; Fredrickson, 2004b). The convergence of these multiple frameworks of positive functioning teachers at work served as the theoretical foundation to generate a multidimensional model of teacher well-being and

address potentially associated variables with it. Fourth, previously conducted studies in Ethiopia did not address the four major issues included in this study (Abebe & Woldehanna, 2013; Boateng, 2020; Egne, 2021; Gemeda & Tynjälä, 2015).

1.3. Purpose of the Study

Teacher well-being (TWB), work task motivation(WTM), psychological capital(PsyCap) and coping with stress (CWS) are vital for teachers, students, universities and society (Collie et al., 2015; Hascher & Waber, 2021; Zewude & Hercz, 2021;2022). On the other hand, low-level teacher well-being is linked to students' poor academic performance, low teacher commitment, leaving the teaching profession, poor motivation, poor self-concept and inability to cope with challenges (Collie et al., 2015; McCallum et al., 2017; Zewude & Hercz, 2021;2022). Therefore, this dissertation research addresses the literature gaps through four related studies. The first task is instrument adaptation, development, translation, and validation. Because before conducting the main study, the applicability and suitability of the measures of the university teachers in the cultural context of Ethiopia are critical and needed. As a result, in the first study, we investigated tools of teacher well-being, psychological capital, work task motivation and coping with stress in the third study.

The second study explored the direct and indirect effect of PsyCap on the total and dimensions of TWB through the total and dimensions of WTM, and the direct effect of total and dimensions of WTM on the total and dimensions of TWB through the framework of positive psychology theory and self-determination theory (Luthans et al., 2015; Ryan & Deci, 2017). The main relevance of positive psychology and SDT in study 2 above is to determine the applicability of positive psychology for understanding the interaction between psychological capital and teacher well-being, self-determination theory for understanding work task motivation and teacher well-being, and to examine the sub-dimensions of role work task motivation in the relationship between PsyCap and dimensions of teacher well-being. Thus, the proposed model in study 2 (see Figures 2 and 3) was tested and described to give a clear picture of teachers' work experiences, work task motivation and general PsyCap. In addition, the study introduced the positive psychology and SDT-based newly established models for university teachers are used for how teachers cope with adverse life events, build a flourishing life, develop motivation and optimize their tasks.

The third study investigated the validation and measurement invariance of the CWS-Q, the mediating role of coping with stress in the relationship between PsyCap and teacher well-being (total and dimensions). The third study's aim was that PsyCap resources and coping strategies are essential for university teachers' well-being and to optimize their achievement. This study derived from three ground theories, namely, the broaden-and-build theory of positive emotions (BBPE; Fredrickson, 2004) and the conservation of resources (COR) theory (Hobfoll, 2002), and from positive psychology theory (Seligman, 2011). The COR theory is one of the best resource-oriented approaches, emphasizing the importance of people's motivation to retain, defend, and accumulate resources when threatened with the actual loss of valued resources (Hobfoll, 2002). Besides, the BBPE theory emphasizes that personal and social capital are the most vital resources that boost well-being and build positive effects (Fredrickson, 2004c).

To sum up, we examined the comprehensive model in the final study by integrating study 2 and study 3. Hence, study 4 explored teachers' perceptions of work experience, work task motivation, coping skills and positive personal resources. Therefore, the objectives of the study were to (i) adapt, translate and validate the suitability of the PCQ-12, WTMST, CWS, and TWBS measures in the Ethiopian context, (ii) examine the direct effect of PsyCap on TWB, WTM, and CWS (iii) explore the direct effect of WTM and CWS on TWB, (iv) investigate the mediating role of dimensions of WTM (total and dimension) and CWS (total and dimension) in the relationship between PsyCap and TWB (dimensions) and (iv) investigate the existence of group differences between socio-demographic factors on WTM, CWS, PsyCap, and TWB.

1.4. Structure of the Dissertation

This dissertation constitutes six parts. This dissertation comprises six chapters, including an Introduction, literature review, research aims, method, results of empirical studies, conclusion, and recommendations. Chapter 1 presents the research context, the problem statement, the study's purpose and the dissertation's structure. Chapter 2, the literature review, addresses the theoretical and empirical background of teacher well-being, psychological capital, work task motivation, coping with stress, and assessment procedures. This chapter also examines the empirical evidence in PsyCap, WTM, CWS, TWB and each other relationship. In addition, this chapter discusses the theoretical foundations of the measures' adaption, translation, validation and mediation analysis. The chapter concludes by identifying the

literature gap and the contribution of this study to fill this gap; Chapter 3, discusses the research aim, testable hypothesis and conceptual models of the studies. One validation and three main studies with 13 research hypotheses are presented. Chapter 4 describes the method of the research. This aimed to examine the mediation role of WTM and CWS in the relationship between PsyCap, and TWB and to adapt and validate measures of PCQ-12, CWS-Q, WTMST and TWBS. In studies 2, 3 and 4, the confirmatory factor analysis (CFA) and reliability were checked. Hair et al. (2019) and Marsh et al. (2020) noted that CFA models often fail to meet standards of good measurement over time; as a result, in each study, the data of the measures must be checked using the CFA to make inferences. This chapter also introduced each study's recommended examination measures and detailed explanations. Therefore, this study used the quantitative and associational methodological approach to examine the study's four focus areas and their measure to make it more scientific in Ethiopian higher educational settings.

Chapter 5 is provided with the empirical results of the four research findings. Two empirical studies were conducted as pilot tests to validate and check the suitability of the measures in the Ethiopian cultural context. However, pilot study one was not included in this study for several reasons, such as the problem of sample size, language issues, and only being administered in one applied university. In pilot one, the language was English and was only administered in one applied university. The second pilot study was carried out to solve such problems by taking a large representative sample from three clustered universities. This study was necessary to identify the methodology gap and confirm the best fit of the measures in the Ethiopian cultural context. After correcting the methodological problems and issues in the second pilot study, advanced methodological approaches were employed based on the latest psychometric recommendations. This second pilot study was included in this dissertation. The pilot study adapted the TWBS, PCQ-12 and WTMST from English to the Amharic language. This study aimed to adapt, develop and validate the Ethiopian cultural context to assess the university teachers' PsyCap, WTM, CWS and TWB. The Journal of Psychology in Africa (Zewude & Hercz, 2022d) and the European Journal of Educational Research (Zewude et al., 2022b) published the adapted instrument of teacher well-being and work task motivation of teachers for Ethiopian higher education settings, respectively. In addition, we have tested the positive psychological well-being model or the PERMA profiler in Ethiopian higher education settings and published it in the journal of Pedagogika / Pedagogy. However the PsyCap model was derived from positive psychology, and it is not possible to include two same models in this dissertation.

To accompany the adaptation, translation and validation, it was vital and critical to assess PsyCap, WTM, CWS and TWB using standardized measures to fit the Ethiopian cultural context. The second empirical study investigated the mediation role of WTM in Ethiopia's higher education context. This study's findings were accepted by the Journal of Psihologija for publication (in press). This study provided more crucial evidence for study 3; CWS is the primary factor that enhances teacher well-being. The third empirical study examined the adapted coping with stress questionnaire (CWS-Q) and tested its mediation role in the association between PsyCap and TWB in Ethiopia. This study was essential in the Ethiopian context, empirically determining the role of positive psychological personal resources (PsyCaP0 and coping strategies on teacher well-being (workload, organizational and student interaction). Studies 2 and 3 combined due to their effective and practical strategy to enhance teacher well-being and were the base for study 4. After validating the CWS-Q in the Ethiopian context, we employed structural equation modelling to assess the direct and indirect effect of PsyCap on TWB through coping with stress. This work was published in the European Journal of Educational Research (Zewude et al., 2021) entitled "PsyCap and TWB: The mediation role of CWS" in Ethiopia's cultural context. This work was also presented at one international conference of the European Educational Research Association (EERA; Zewude & Hercz, 2021). Chapter 6 includes the main findings and conclusions derived from the studies of this dissertation and possible recommendations for teachers, policymakers, and researchers. Finally, in the appendix section, the references list used in the study, research use of the instrument and translation, clearance of ethical approval, and permission letters from the eight (8) Amhara Regional State Universities Forum for data collection are found.

2. REVIEW OF LITERATURE

2.0. Introduction

This section presented the review of previous studies on teacher well-being (TWB), psychological capital (PsyCap), work task motivation (WTM), coping with stress (CWS), and instrument adaptation and validation. The review started with the operational definition of TWB, PsyCap, WTM, and CWS and then described an empirical study related to these constructs. This procedure was followed by the key measures of teacher well-being, psychological capital, work task motivation, and coping with stress. In line with the why measures adaptation, development, translation, validation and mediation are needed? Several theoretical justifications and procedures were presented. However, the details of the measures and psychometric properties are described in the method section and study one. Furthermore, TWB and its relationship with PsyCap, WTM, and CWS and their implication for the present study was also highlighted.

2.1. Theoretical Foundations of the Study

The main objective of this study is to emphasize the importance of positive psychology, expressly PsyCap resources, WTM, and CWS, as preliminary for the teacher well-being of university teachers and the achievement of their successful work life. This argument is derived from different influential and applicable theories. Table 1 presents the detailed links of theories with the study constructs. The first is from the Broaden and Build of Positive Emotion Theory (BBPE; Fredrickson, 2004) and Conservation Resource Theory (COR; Hobfoll, 1989). We postulate that positive psychological resources, optimization, and coping strategies related to Teacher well-Being (TWB) are among the best enhancement functions. In addition, the models explain that teachers can use positive resources and acquire positive emotions and coping mechanisms to succeed in the workplace. COR theory is one of the best resource-oriented approaches that emphasize the importance of teachers who are motivated to retain, defend, build, and accumulate resources (Hobfoll, 1989). It predicts that this accumulation of resources results in positive teacher outcomes such as commitment (Hobfoll, 2002), well-being, and valuable, balanced resources (Zhao & You, 2019).

Table 1. The major theories and their respective links to the study variables

No.	Author(s) and year	Theory	Description	Link with variables
1	Fredrickson, 2004b; Zewude & Hercz, 2021)	Broaden and Build theory of Positive Emotion (BBPE)	The BBPE is essential to use personal, positive, and social capital to cope successfully with problems and adapt to difficulties in work-life life, flourish in life	Connect CWS TWB and PsyCap
2	Hobfoll, 1989; Zewude & Hercz, 2021)	Conservation Resource Theory (COR)	Positive psychological resources, optimization, and coping strategies for teacher well-being (TWB) are among the best enhancement functions	Linked TWB CWS PsyCap
3	Seligman, 2011; Zewude & Hercz a, 2022 a)	Positive Psychology Theory (POPT)	POPT is vital for teachers to improve their well-being, reduce stress, develop motivation, build a flourishing life and optimize their tasks	Linked Motivation well-being PsyCap
4	Collie et al., 2015;Zewude & Hercz,	The Teacher Well-Being Theory (TWBT)	TWBT focuses on an individual's positive evaluation of and	Associated WTM

	2021; Zewude & Hercz, 2022)		healthy functioning in their work environment	TWB
5	Ryan & Deci, 2017;(Zewude & Hercz M., 2022)	Self-Determination Theory of motivation (SDT)	SDT theory emphasizes that work task motivation has positive and negative consequences or outcomes on teachers' work	Linked WTM TWB PsyCap

BBPE theory also emphasizes that personal and social capital are the most vital resources that boost well-being and build-positive effects (Fredrickson, 2004). Therefore, the BBPE approach for teachers is crucial to personal, positive, and social capital to cope successfully with problems and adapt to difficulties in work life, flourish in life, experience optimal functioning, enjoy high levels of teaching satisfaction, and minimize stress (Fredrickson, 2004). Therefore, the COR and BBPE theories were considered appropriate as alternative explanations for the function and outcome of PsyCap (Avey et al., 2010).

Furthermore, the COR theory was linked to CWS, PsyCap and TWB. Thus, stress and coping theory provided a valuable framework for framing and testing hypotheses about stress coping strategies and their relationships with mental well-being (Folkman, 2013) and PsyCap (Rabenu et al., 2016). For instance, COR theory can be an essential personal resource for attaining goals. Individuals with many potential resources can better cope with the difficulties they encounter in the workplace; thus, they move toward nurturing and optimizing success. Thus, PsyCap and coping strategies enable university teachers to understand and design solutions to work challenges and thrive in terms of well-being. Therefore, PsyCap represents individuals' positive agentic resources, enabling them to flourish, optimize, and boost day-to-day activities (Luthans & Youssef-Morgan, 2017). The COR and BBPE models emphasize that affective, cognitive, social, and other variables, including self-efficacy, hope, optimism,

achievement, social resource, and resilience (Luthans et al., 2007), depict the role of PsyCap in the well-being of teachers in the workplace.

Second, the argument of this study is derived from the positive psychology theory (Seligman, 2011). For a century, scholars have contributed to the well-being, broadly recognized in various areas, including education, work, relationships, the military, sports, health, and life, which have afforded much prominence to mental disorders in general (Luthans & Youssef-Morgan, 2017). However, earlier studies overlook two crucial missions for the flourishing of humans in the field of psychology: (a) helping healthy people to be happier and more fruitful and (b) realizing human potential (Seligman & Csikszentmihalyi, 2000). In addition, currently, psychologists intend to shift from a narrative of human weakness to a positive dream of a robust human side and immeasurable potential (Becker & Marecek, 2008). Thus, Collie et al. (2015) coined the practical importance of positive psychology, an emerging TWB model, and derived from three commonly investigated factors: workload stress, student–relation-related stress, and organizational-level stress. Therefore, positive psychology is vital in improving well-being, reducing stress, developing motivation, building flourishing lives, and optimizing teachers' tasks, especially in developing countries such as Ethiopia. Therefore, positive psychology presents many potential benefits to help and contribute to individuals, groups, and institutions (Gable & Haidt, 2005). The following definition is derived from relevant sources of positive psychology (Linley et al., 2006):

> *Positive psychology at the individual level focuses on positive personal traits: the capacity for love and wisdom, humanity, courage, aesthetics, forgiveness, interpersonal skills, sensibility, perseverance, originality, vocation, spirituality, high ability, and future-mindedness. At the subjective level is about valued personal experiences: in the past (contentment, satisfaction, and well-being), in the present (flow and happiness), and in the future (optimism and hope). At the group level, focused on the institutions and the civic virtues that move individuals toward better citizenship: nurturance, work ethics, civility, responsibility, altruism, moderation, and tolerance. (Seligman and Csikszentmihalyi, 2000, p. 5)*

The positive psychology movement of Seligman (2011) initiated PsyCap as a resource and is defined as an individual's positive conditions of development. It is characterized as (1) acquiring confidence (self-efficacy) to require and place the necessary effort to succeed over

challenging tasks; (2) creating a positive attribution (optimism) regarding present and future achievements (optimism) and thriving in the present and the future; (3) remaining diligent toward goals and, if necessary, redirecting efforts toward such goals (hope) to succeed; and (4) sustaining and bouncing back if beset by issues and adversity (resiliency); and even in the far side (Luthans et al., 2007, p. 3).

Finally, the argument of this study was driven by SDT, which is one of the most inclusive and applicable human theories of motivation. SDT theory argues that motivation is broad in scope; it uses concepts relevant to people, comprises a broad area of phenomena, is empirically based, and offers applicable values for human beings (Deci & Ryan, 2008). Furthermore, SDT distinguishes different types of motivation supported by various goals or reasons that create action instead of motivations (Ryan & Deci, 2000; Deci & Ryan, 2008; Fernet et al., 2008). In keeping with what Fernet et al. (2008) posit, SDT has three broadly known types of motivation: intrinsic motivation, extrinsic motivation, and intrinsic motivation, which range from low to high levels. SDT also has numerous benefits in achieving fruitful results for various individuals such as parents, health care providers, religious leaders, managers, coaches, and teachers (Ryan & Deci, 2017).

2.2. Meanings, Domains, and Assessment of the Constructs

2.2.1. Teacher Well-Being

The Concept and Construct of Teacher Well-Being

The scientific literature published various definitions and theoretical models of well-being (Ryan & Deci, 2001, 2011; Ryff & Singer, 2008, Collie et al., 2015). However, the aspects that define and lead to well-being is a debatable topic. This debate dates to Aristotle, the famous founder of well-being, and ongoing scientific discussions about the operationalization and measurement of well-being. Teacher well-being is one study area investigated by researchers. They define teacher well-being in different ways. To cite some, Albuquerque et al. (2012) define teacher well-being as the degree to which an individual teacher judges the overall quality of their life favourably. It has three components: life satisfaction, positive affect, and negative affect. Mankin et al. suggested (2018) believe that well-being is a teacher's positive psychological functioning at work and is associated with teaching efficacy and school connectedness. However, Collie and colleagues (2015) argued that teacher well-being is defined in terms of domain-specific aspects such as workload,

organizational and student interaction, or overall functioning of teachers' tasks in their professional life.

As highlighted in the conceptual framework in the literature, scholars such as Adler (2016) advanced that best-characterized well-being as a profile of indicators across multiple domains instead of a single factor. Theoretical and practical reasons exist for approaching well-being as a multi-dimensional construct across valued life domains (Huppert & So, 2013). From the theoretical perspective, well-being is an abstract construct that includes feeling good (hedonic well-being) and functioning well (eudemonic well-being; Huppert, 2014). However, well-being among teachers from the practical perspective should be addressed through specific teacher tasks or professional-based domains (Collie, 2014). Consequently, various well-being constructs are developed due to the lack of a comprehensive model. For instance, Diener (2009) calls for examining well-being across contexts, especially those related to work and profession. Historically, two broad psychological traditions are employed to explore well-being. First, the hedonic well-being approach focuses on subjective well-being. It is a tri-partite model that consists of positive affect, the absence of negative affect and satisfaction with life, and an emphasis on pleasure and happiness (Diener & Chan, 2011; Ryan & Deci, 2001).

Conversely, the eudemonic well-being approach pertains to psychological well-being. It comprises six dimensions: environmental mastery, autonomy, purpose in life, self-acceptance, personal growth, and positive relationships with others (Ryff & Keyes, 1995). Psychological well-being is defined as psychological health achieved by functioning at an optimal level, fulfilling one's potential, or realizing one's true nature. In terms of assessment, the eudemonic view of well-being assesses how well people live connected to their true selves (Ryff & Singer, 2008).

In contrast to the eudemonic view, the hedonic view (subjective well-being) equates well-being with happiness. It is frequently operationalized as the balance between positive and negative effects and a long and healthy life (Ryan & Deci, 2011, Diener et al., 2015). The theorists of this perspective tend to conceptualize well-being in terms of these core constructs. Subjective well-being is a broad class of phenomena that feature emotional responses, domain satisfactions, and global life satisfaction judgments. Diener (2009a) focused on describing who is happy broadly. A review of Diener's work (2009b, 2009c) depicted the happy person as a "young, healthy, well-educated, well-paid, extroverted, optimistic, worry-free, religious, married person with high self-esteem, high job morale, modest aspirations, and of either sex. However, experts note that *happiness* is not a single entity but can be broken down into elements (Diener, 2009c).

The OECD proposed 11 domains of indicators of well-being considered essential to the quality of life, namely, housing, income, jobs, community, education, environment, governance, health, life satisfaction, safety, and work-life balance (Hercz & Zewude, 2019). The index enabled countries and individuals to identify the most important domains (Kerényi, 2011). Moreover, Saaranen et al. (2007) conceptualized the four dimensions of well-being as school-based TWB: learner, health care services, cooperation between school and homes, and occupational well-being of the school staff. The results of the conceptualization of work-related well-being by Van Horn et al. (2004) incorporated unified concepts of (1) affective well-being: job satisfaction, organizational commitment, and emotional exhaustion/fatigue; (2) professional well-being: aspiration and competence at work and autonomy; (3) social well-being: depersonalization toward colleagues and quality of social functioning at work; (4) cognitive well-being: the capacity to take up new information at work, ability to concentrate at work, and (5) psychosomatic well-being: health complaints such as headaches, stomach, aches and symptoms of possible cardiovascular issues (Locarno, 2017). Seligman (2011) introduced another newly established model of well-being that focuses on people pursuing ends in themselves: positive emotion, engagement or flow, positive relationships, meaning or purpose, and achievement (the PERMA profiler).

Scholars explored the hedonic (subjective well-being) and eudemonic (psychological well-being) approaches in the Ethiopian cultural context (Kibret & Tareke, 2017). Moreover, the PERMA profiler and PsyCap were derived from the positive psychology approach. Specifically, the current dissertation focused on PsyCap. However, it also examined and tested the PERMA profiler in the Ethiopian context (Zewude & Hercz, 2022a). Furthermore, Collie et al. (2015) proposed a new tri-partite dimensional model to operationalize teacher well-being using sound measurement and address the real work-life situation of teachers discussed in this dissertation, address the lack of proper assessment of school-based TWB of Saaranen et al. (2007) and work-related well-being by Van Horn et al. (2004) and others. These are:

(1) **Work-Related Dimension:** As Collie (2014) noted, workload well-being is conceptualized as required tasks that teachers perform as part of their stress-related duties, such as marking assignments and tests, working after hours, and attending meetings. Diener (2009) called for examining well-being across contexts, especially at work (Diener, 2009c; Collie et al., 2015). In the United Kingdom, the three mainly

reported risk factors in the TWB index (2008) are high workload, high levels of stress, and absence of better work-life (Stanley, 2018).

(2) **Organization-Related Dimension*:*** Organizational well-being is defined as issues at the institutional level associated with teacher tasks and teachings, such as support and recognition offered by administrators, relationships and communications between teachers and administrators, participation in decision making, and established school rules and procedures (Collie et al., 2015). Collie (2014) reported that teachers generally felt that the organizational-level aspects of their work positively influenced their well-being

(3) **Student-Interaction Well-Being:** Student-interaction well-being is related to the quality of communication between teachers and students and teachers' perceptions of student behavior and motivation. Spilt et al. (2011) and Collie et al. (2015) also found that relationships with students can be harmful or valuable to the well-being of teachers only when teachers require or need personal relationships with students. The adult attachment model (the reciprocal caregiving and care-seeking) is the standard model applied to education (teachers as caregivers and students as care seekers), and establishing a positive teacher-student relationship is appropriate for a smooth teaching-learning process (Riley, 2009; Collie et al., 2015). Spilt et al. (2011) also noted that student relationships impacted teachers' professional and personal lives. Therefore, the current study followed the three dimensions of the well-being model developed by Collie et al. (2015) for teachers.

Significance of Teacher Well-being

Previous research on well-being laid the foundation in the fields of psychology, education, health science, sociology, and other behavioural sciences; however, the pathological lens and have generally failed or ignored the role of human strengths, optimal functioning, and flourishing of life (Youssef-Morgan & Luthans, 2015). Moreover, teaching suffers from many potential challenges by its complex nature. Therefore the central theme of investigation is their status of well-being and improvement through positive intervention ((Diener, 2009a; 2009b; 2009c; Ho et al., 2010; Luthans et al., 2007). Therefore, well-being expresses that positive psychology proposes the significant determinants and countless advantages gained through investing, controlling, developing, and managing psychological capital (Luthans, Youssef, & Avolio, 2007).

Research findings that develop an understanding of well-being among teachers are essential not only for teachers but also for students, schools, and the nation (Duckworth, Quinn, & Seligman, 2009; Pakarinen & Kiuru, 2010; Collie et al., 2015). Recent studies in education, psychology and behavioural sciences as an entire area of investigation focus on the role of positive psychology on mental health and teachers' well-being (Collie, 2014; Selvaraj & Bhat, 2018; Zewude & Hercz, 2021). Nowadays, the positive psychology movement inspired contemporary researchers to emphasize what is right and contributes to human flourishing and growth potential (Seligman & Csikszentmihalyi, 2000; Carver & Scheier, 2002; Snyder & Lopez, 2009; Csikszentmihalyi, 2014). However, Seligman and colleagues (2011) criticized psychologists that gave much prominence to mental disorders and pathologies, overlooking two crucial missions in the field of psychology: (a) helping healthy people to be happier and more productive and (b) actualizing human potential. Therefore, teacher well-being has been an area of inquiry by professionals and researchers (Collie et al., 2015; Van Horn et al., 2004).

Nowadays, teacher well-being is an area of inquiry for several reasons. First, it adds to the understanding of teachers' well-being, helps to know factors of great concern to teachers, helps create conducive school contexts, and enhances their well-being (Hamre & Pianta, 2001). Second, examining the most satisfying and rewarding teachers can better understand their attitudes toward school reforms and affirmative psychological intervention programs (Horn et al.,2004; Youssef-Morgan & Luthans, 2015). Third, literature proved that teacher well-being indirectly and significantly affects children's socio-emotional adjustment and performance (Malmberg & Hagger, 2009; Hamre & Pianta, 2010). Fourth, in a current global world, the well-being of teachers plays a significant role in enhancing the current problem of teacher attrition, an ongoing issue in education contexts. Fifth, knowing teacher well-being is critical for teachers and students; there are still several gaps in the literature (Collie, 2014).

Assessment of Teacher Well-Being

Two broad psychological traditions have historically been employed to assess well-being. On the one hand, the *hedonic view* equates well-being with happiness and is often operationalized as the balance between positive and negative affect and longer and healthier life (Ryan & Deci, 2001; Diener & Chan, 2011). On the other hand, the eudemonic perspective (autonomy, environmental mastery, personal growth, purpose in life, self-acceptance and positive relation with others) assesses how well people live in connection to their true selves (Ryff et al., 2008). Both theoretical perspectives argued that assessment of well-being relied

almost exclusively on self-report assessment to address an individual's overall satisfaction and self-report measures of the scale appear to possess adequate psychometric properties (Diener, 2009). For instance, to assess hedonic well-being or subjective well-being, Diener et al. (1985) developed the global life satisfaction scale (LSS), and Watson et al. (1988) developed the positive and negative affect schedule (PANAS). These instruments were the most widely used tools that assessed the general population's subjective well-being.

On the other hand, Ryff & Keyes (1995) developed a psychological well-being scale (PWBS) to assess eudemonic well-being or psychological well-being. The PWBS is the most widely used measure across the whole age category. However, both subjective well-being and psychological well-being measures are general instruments. These measures give researchers an overall score of individuals' well-being rather than providing teachers' domain-specific and work task information. In response to the general nature of the measures and due to the lack of assessing specific professional domains, Diener (2009) calls for further well-being instruments should be developed based on specific task domains. As a result, the teacher well-being scale (TWBS), a 16-item tool developed by Collie et al. (2015), measures three well-being factors: workload well-being, organizational well-being, and student interaction well-being. In addition, this instrument targeted teachers' practical work life and their perception of their work.

Finally, Seligman (2011) criticized those previous studies that gave much prominence to opposing sides and overlooked two crucial missions: helping healthy people to be happier and productive and actualizing human potential. Consequently, Seligman (2011) delineates five domains of life that people pursue as ends in themselves and three items per subscale that make up well-being: positive emotion, engagement or flow, positive relationships, meaning or purpose, and achievement, or PERMA. However, the PERMA profiler highly focused on the positive psychological functioning of the teachers and didn't consider the practical workload of teachers (Zewude & Hercz, 2022c).

Due to its practical importance in Collie et al. (2015), TWBS was used in this study. Unfortunately, to our best knowledge, no instrument in the Amharic language (official Ethiopian language) or in any other cultural context can be used to measure teacher well-being among university instructors.

2.2.2. The Concept and Dimensions of Psychological Capital

What will significant_change have a highway advantage in the "teaching profession" and "teachers' well-being"? How can teaching organizations and individual teachers achieve enhanced complex problems in their professional and personal lives? To answer these questions, positive psychologists (e.g., Seligman & Csikszentmihalyi, 2000; Sheldon & King, 2001; Seligman, 2011; Lopez, 2008; Snyder, 2000; Zewude & Hercz, 2022) in the last two decades laid a foundation for examining positive psychology's role by focusing on the strength of human beings rather than the weak aspects (Luthans & Youssef, 2004a; Luthans & Youssef-Morgan, 2017). The practice of positive psychology initially began in clinical psychology to treat clinical cases and extended to the organizational fields to improve the macro-oriented positivity of employees in the workplace. Scientific literature pointed out a newly emerging positive psychological theory to gain a decisive advantage for teachers, and the teaching profession is called positive psychological capital or Psychological Capital (PsyCap). Various authors and sources (e.g., Luthans et al. 2007, 2004, Youssef-Morgan and Luthans 2015) synonymously use the terms psychological capital and positive psychological capital. For instance, Luthans (2002) defined PsyCap as the study of applying positively oriented psychological capacities and human resources that can be measured, developed, and effectively managed for performance improvement in today's workplace. Psychological capital also is seen as a resource that goes beyond the *social capital* (relationships, networks, who you know) of Adler & Kwon (2002) and *human capital* (experience, knowledge, skills, and abilities, what you know of van Marrewijk (2002). However, it deals with "who you are here and now" and "who you can become" (Luthans et al. 2004, Youssef-Morgan and Luthans 2015). Since psychological capital is concerned about who the person is and what it can be through positive development in general (Luthans and Youssef 2004, Burhanuddin et al. 2019). Popular literature distinguished positive psychological capital from other positive constructs in organizational, industrial, and personal development; popular literature focused on theoretical ground, empirical evidence, and valid and reliable measurement (Luthans et al. 2010). The positive psychological capital construct of Luthans et al. (2007) is also an accurate and measurably reliable higher-order, latent multi-dimensional construct.

PsyCap is also a potential positive psychological resource with four distinct constructs. These four fundamental PsyCap elements: hope, efficacy, resiliency, and optimism (HERO), together with serve as prominent potential resources that positively affect well-being (Youssef-Morgan & Luthans, 2015) and travel together and interact with working synergistically, producing

differentiated manifestation over time and across context (Luthans et al., 2015; Burhanuddin et al. 2019). In addition, the PsyCap construct's differences from other positive constructs were grounded theory, empirical-based, and a valid cross-culturally measurement (Luthans & Youssef-Morgan, 2017). Luthans and colleagues (2007) identified four psychological capacities or resources: hope, self-efficacy, resilience, and optimism (HERO), which are considered dimensions of PsyCap, and therefore, the four acronyms "HERO" are discussed below.

Hope: Hope is based on Snyder's (2002) work concerning the perceived competence to derive pathways to desired goals and inspire oneself to use those pathways. Substantial empirical evidence supports hope's positive impact on real-life well-being outcomes, coping beliefs and skills, and physical and mental health improvement (Culbertson, Fullagar, & Mills, 2010; Sarwar, Nadeem, & Aftab, 2017). Studies have also shown that hopeful teachers are confident, have a strong inner spirit, resulting in higher performance and are motivated to perform challenging tasks, generate solutions, and choose the best alternative pathways when facing challenges (Ramesh & Rao, 2012; Luthans et al., 2005).

Efficacy: The second PsyCap pillar is self-efficacy, based on Bandura's (1997) work and involves an individual's beliefs about one's capabilities to perform a given task successfully. Self-efficacy is a positive psychological construct with perhaps the most extensive theoretical and research support (Bandura, 2003; Bandura & Locke, 2003). Besides, Luthans, Youssef, and Avolio (2007) noted that individuals with high self-efficacy (a) are highly self-motivated, (b) set clear goals for their future life, (c) are self-solution-centred in challenging situations, (d) thrive and welcome challenges, and (e) invest the desired effort to succeed at their goals. Furthermore, teacher self-efficacy involves teachers' self-judgments about their ability, affecting student outcomes (Ross et al., 2012). From this point of view, teachers with a high level of self-efficacy would tend to develop greater pleasure, achieve their goals and have high positive functioning.

Resilience: Ann Masten's scientific work defined resilience as one's ability to address things under bound risks and adverse conditions. Resilience plays a significant, decisive role in individuals' recovery from adversity, looking optimistically at difficulty and developing the capacity to respond to pressure effectively (Masten, 2001). Additionally, the study found that resilience is a predictor of subjective well-being (Armaou & Antoniou, 2015).

Optimism: Based on Seligman's (2006) work, optimism involves a positive outlook on outcomes, including positive emotions, motivation, and realism. According to Seligman, optimists bounce back from defeat and, with their lives somewhat poorer, pick up and start again, whereas pessimists give up and fall into depression (Seligman, 2006). Also, optimists expect positive things to happen to them; pessimists expect negative things (Carver & Scheier, 2002). Abiola and Udofia (2011) found that optimism significantly and positively predicts teacher well-being and is related to desirable outcomes in the workplace (Youssef & Luthans, 2007; Luthans & Youssef-Morgan, 2017). Because optimists expect the positive from life and are confident about their future, they feel happy and satisfied with their experiences (Youssef-Morgan & Luthans, 2015).

Assessment of Psychological Capital

Regarding the assessment of psychological capital, there are various validation studies across North America, Europe, Asia and Australia. The Psychological Capital Questionnaire (PCQ), developed by Luthans et al. (2012), is the most widely used tool to assess psychological capital. The PCQ has two versions, one with 24 items (the PCQ–24) or the extended version and a short version with 12 items (the PCQ–12). It contains sub-dimensions of hope, efficacy, resilience, and optimism, shortened to HERO (Scheier & Carver, 1985; Wagnild & Young, 1993). For this study, we used the 12-item version, with four items for hope, three for self-efficacy, three for resilience, and two for optimism (Luthans et al., 2007; Luthans, Youssef, & Avolio, 2007; Çetin & Bas, 2012; Djourova et al., 2018). Luthans et al. (2007) found the scale to have high factorial and discriminant validity.

Furthermore, in the previous literature, content, face, and discriminant validity fit the workplace and college settings (Luthans & Youssef, 2004; Luthans, Avolio, Avey, & Norman, 2007; Luthans, 2012; Selvaraj & Bhat, 2018). For example, the GLOBE research project (Wernsing, 2014) examined 56,363 sample employees for measurement invariance of the 12-item psychological capital survey across 12 national cultures: Brazil (Latin America), China (Confucian Asia), Germany (Germanic Europe), India (Southern Asia), Italy (Latin Europe), Mexico (Latin America), Poland (Eastern Europe), South Africa (Sub-Saharan Africa), Sweden (Nordic Europe), Turkey (Arab), the United Kingdom (Anglo), and the United States (Anglo), representing a cross-section of all primary world cultures. Reliability confirmations were accepted and high in all cultures(Wernsing, 2014). Confirmatory factor analysis was also conducted in 12 cross-cultural studies to ensure the instrument’s structural validity (Wernsing,

2014). Each country of the various cultures was independently estimated and met a minimally borderline acceptable level of model fit, meaning the latent construct seems appropriate (Wernsing, 2014; Westland, 2019). Notable from this review is criticism and an issue of the PCQ-12 instrument, which needs further investigation in other cultural contexts. However, the PCQ-12 has gained prominence and acceptance globally to measure employees' positive psychological resources. Besides, the PCQ-12 instrument is reported to have achieved an excellent test-retest correlation coefficient in various studies. Test-retest reliability measures how consistent the results across different cultures are over time(Cheung & Chan, 2009). In the present study, no existing instrument has been used in the Ethiopian context.

2.2.3. Work Task Motivation

The third primary construct of this study is work task motivation (WTM). Motivation is essential for teachers' and educational institutions' performance since even the best and most well-trained staff members will not perform well unless motivated (Addison & Brundrett, 2008). Addison and Brundrett (2008) also noted that intrinsic motivator teachers are more efficient than extrinsic motivators. Besides, the authors identified three major motivational factors of teachers' hierarchy: intrinsic, school-based, and extrinsic.

The most widely used and dominant influential theory investigated by scholars is Self-Determination Theory (SDT). Self-determined kinds of motivation have positive and negative consequences or outcomes. According to the SDT, intrinsic motivation enables individuals to develop internal psychological growth, integrate their personalities, develop psychological stability, and foster positive life processes (Ryan & Deci, 2000). Ryan et al. (2008) showed that intrinsic motivation and internalization are the most positive determinants of personal and higher levels of well-being. SDT focuses on the extreme ends of the continuum, focusing on extrinsic versus intrinsic motivation (Deci and Ryan, 2000, Deci and Gagne, 2005). Ryan and Deci (2000) differentiate several motivation types based on various goals or reasons that give rise to an act. Fernet et al. (2008), also define three known motivations based on SDT from low to high: amotivation, extrinsic motivation, and intrinsic motivation. For example, intrinsic motivation and identified regulation result in positive effects, whereas external regulation, introjected regulation, and amotivation lead to negative results (Fernet et al., 2008). As a result, self-determined types of motivation in the workplace are associated with higher job satisfaction (Fernet et al., 2008) and better PsyCap (Ferraro et al., 2018). Besides, Collie et al. (2015) noted that teachers are well and

feel motivated to teach; they are more successful in their teaching, less often leave the profession, and promote motivation and achievement among their students.

Assessment of Work Task Motivation

Studies recently have shown that teachers, more than any other professionals, suffer from a lack of WTM (Fernet et al., 2008; Jesus & Lens, 2005). In the modern era, researchers have agreed that SDT is used to assess teachers' motivation (Dybowski & Harendza, 2015; Fernet et al., 2008; Ryan & Deci, 2000). However, there are various instruments developed to assess teachers' motivation. For example, Vallerand et al. (1992) developed the Academic Motivation Scale (AMS) based on SDT to assess the regulation of motivation. AMS was a psychometrically validated instrument with several populations across various cultures (Alivernini & Lucidi, 2008; Cokley et al., 2001; Grouzet et al., 2006). In addition, Gagné et al. (2010) developed the Motivation At Work Scale (MAWS), a four-dimensional measure including intrinsic motivation, external regulation, introjected regulation, and identified regulation, and later the Multi-dimensional Work Motivation Scale (MWMS) (Gagné et al., 2015) to assess employees' motivational levels.

Other measures are used to measure teachers, such as the Scale of Motivation for Teachers (SMT; Akdemir & Arslan, 2013); the Motivation and Demotivation Scale for Teachers (MDST) (Addison & Brundrett, 2008). However, these measures were developed for the general population rather than teachers. Based on Hertzberg's two-factor motivation theory: motivation and retention, Akdemir and Arslan (2013) introduced a new motivation measure known as the Motivation Scale for Teachers (MST). The MST consisted of four main factors (communication, progress in profession, institutions, and expectations) with twenty-sex items.

Another measure developed by Obunadike (2013) for assessing universities' quality assurance is the Teacher Motivation Assessment Scale (TMAS). TMAS is a 22 items measure focusing on five main dimensions: attitude, reward, commitment, punishment, and interest. Initially, the authors developed a 50-item; later, due to low factor loadings, 28 items were discarded. In addition, based on SDT, Fernet et al. (2008) developed an integrated and teacher-task motivation measure designed to assess five motivational constructs (intrinsic motivation, external regulation, identified regulation, introjected regulation, and motivation) for six work tasks (teaching, evaluation of students, class preparation, classroom management, administrative tasks, and complementary tasks). Later Wahab et al. (2020) adapted the Work

Tasks Motivation Scale for Teachers (WTMST), which includes intrinsic motivation, identified regulation, external regulation, introjected regulation, and amotivation based on six teacher tasks. However, most measures studied by different authors to examine teacher work task motivation based on self-determined motivation have been more general than teacher-domain specific. Besides, exploring teachers' work task motivation regarding several teacher tasks is essential for the student's motivation, teaching quality, and working behaviour (Fernet et al., 2008). In support of this argument, Neves et al. (2018) assess teachers' motivation from a stance of SDT of a multi-dimensional concept of motivation allowing the evaluation of the quality of teachers' motivation. However, the above instruments have several gaps in addressing the teachers' true nature of work-life and have limitations psychometrically. For instance, in this dissertation, we used the most suitable measure that addresses teachers' actual work-life and tasks, known as WTMST, developed by Fernet et al. (2008) in the Canadian cultural context.

2.2.4. Coping with Stress

This dissertation's last and fourth key construct is coping with stress (CWS). Coping with stress refers to a constantly changing behavioral and cognitive effort to deal with challenges, irrespective of the success of these efforts (Lazarus & Folkman, 1984; Rabenu et al., 2016). The empirical and theoretical grounded classification by Lazarus & Folkman, 1984 defined coping with stress as emotion-focused coping and problem-focused coping. The emotion-focused coping aims to change the emotions associated with a stressful event. It is directed at lessening emotional distress and includes strategies such as avoidance, minimization, distancing, selective attention, favorable comparisons, and wresting positive value from adverse events(Lazarus & Folkman, 1984). Problem-focused coping is often directed at defining the problem, generating alternative solutions, weighing the alternatives in terms of their costs and benefits, choosing among them, and acting (Lazarus & Folkman, 1984). Based on Lazarus & Folkman (1984), three types of coping strategies were classified by Rabenu et al. (2016): Coping through change corresponds to the problem-focused coping of Lazarus and Folkman (1984), which is aimed at handling stressors and refers to how individuals manage stressors, actively solve problems they face in their daily lives, and focus on managing the problem itself. Coping through acceptance corresponds to the emotion-focused coping of Lazarus and Folkman (1984), which involves having an orientation to the problems because stressors as a fact that cannot be changed. Finally, coping with withdrawal corresponds to Lazarus and Folkman's (1984)

emotion-focused coping, which involves individuals withdrawing psychologically by distancing themselves mentally from the stressful work environment (Rabenu et al., 2016; Rabenu & Yaniv, 2017; Zewude & Hercz, 2021). These coping strategies are basic types used to categorize how people react to or handle Stress (Rabenu & Yaniv, 2015; Rabenu et al., 2016). Pakarinen et al. (2021) noted that teachers with low-coping strategies reported less stress and fewer depressive symptoms than problem-focused and emotion-focused coping users. Therefore, efficient coping strategies, specifically problem-focused and emotion-focused, might benefit teachers' well-being(Pakarinen et al., 2021). Inaddition, Zewude and Hercz (2021) noted that coping through change (problem-focused), coping through acceptance (emotion-focused) and coping through withdrawal (emotion-focused) have a potential role in enhancing teachers' well-being.

Assessment of Coping with stress

Stress experienced by teachers has been a topic of research interest in recent years due to the nature of the teaching profession (Antoniou et al., 2013). There are various factors have been identified associated with teachers' work-related stress. As a result, different coping strategies have been proposed in the literature to cope with stress. For example, the COPE questionnaire, a multi-dimensional coping inventory, was developed by Carver et al. (1989) to assess how people respond to stress. The COPE is a self-report measure of 14 theoretically based subscales with 52 statements to evaluate coping skills. The inventory includes planning, denial, suppression of competing activities, active coping, restraint coping, emotional support, behavioural disengagement, instrumental support, acceptance, positive reinterpretation, religion, venting emotions, alcohol-drug disengagement and mental disengagement (Carver et al., 1989; Federkeil et al., 2020).

Austin et al. (2005) developed a coping strategies questionnaire to assess stress levels. They identified four major coping strategies, of which three of them are negative coping (accepting responsibility, escape avoidance, uncontrolled aggression) and exercise as a positive coping strategy. The authors reported that the more highly stressed teachers used accepting responsibility and escape avoidance and uncontrolled aggression used by only the teachers with a high-stress level. However, teachers with lower levels of stress used exercise strategies. However, this instrument has several criticisms, including reliability and validity issues, and correlation is difficult to interpret(Austin et al., 2005).

Furthermore, Antoniou et al. (2013) also developed the Stress Coping Strategies Scale (SCSS). This instrument consists of 28 items that stem from 4 main factors: positive approach, avoidance, action strategies and logical problem-solving(Antoniou et al., 2013). However, the measure has a drawback in terms of reliability and validity.

In response to this anomaly, researchers began to develop open-ended questionnaires in the form of semi-structured interviews that allowed them to examine experience-based coping strategies among Norwegian teachers (Skaalvik & Skaalvik, 2015). However, the authors did not identify different coping strategies; instead, they focused on teachers' experiences coping with stress during their work.

Later, Rabenu et al. (2016) developed a new assessment instrument to determine whether employees used problem-focused or emotion-focused coping. The Coping With Stress Questionnaire (CWS-Q) was developed based on the known theory of Lazarus and Folkman's (1984) stress, appraisal and coping theory in response to criticism of how coping items in validated questionnaires were derived from theory or somewhat arbitrarily or defined simply through a critical analysis of coping checklists. Rabenu et al. (2016) identified three main coping strategies: change, acceptance and withdrawal. The CWS-Q is reported to have a problem of a reliability correlation coefficient of coping through acceptance $\alpha = 0.53$, and the total CWS-Q reliability of ten items was $\alpha = 0.65$ (Rabenu et al., 2016). The CWS-Q was also confirmed by Rabenu and Yaniv (2017), which has good psychometric properties. Rabenu et al. (2016) highly influenced the present study in instrument choice ideas due to good psychometric issues and time-saving. Besides, no existing coping with stress instrument has been used in the Ethiopian context, whether as a whole or in an adapted or modified form.

2.3 The Relationships Among the Study Variables

2.3.1 Psychological capital to teacher well-being, work task motivation and coping with stress

It was stated that the earlier scientific studies vastly focused on the significant impact of PsyCap on various industrial and organizational settings (e.g. Annida et al., 2019; Avey et al., 2010; Avey et al., 2011; Baluku et al., 2018; Bockorny et al., 2019; Gautam et al., 2019; Hwang & Han, 2019; Li et al., 2019; Luthans, 2009; Luthans, Avey, & Patera, 2008; Luthans & Avolio, 2014; Luthans, Avolio, & Norman, 2007; Luthans et al., 2004; Luthans et al., 2006' Luthans & Youssef, 2004a; Luthans & Youssef-Morgan, 2017; Selvaraj & Bhat, 2018; Youssef

& Luthans, 2006; Youssef & Luthans, 2015; Youssef-Morgan & Luthans, 2013; Yu et al., 2019). Furthermore, several accumulating evidence suggests that PsyCap has positive impacts on vocational well-being, modifying motivational processes, boosting self-esteem, encouraging positive attitudes, and is positively associated with subjective well-being and academic motivation (Afzal et al., 2016; Avey et al., 2011; Bissessar, 2014; Gibson & Hicks, 2018, Jafri 2017; Mangundjaya, 2012; Siu et al., 2015; Youssef-Morgan & Luthans, 2015; Zhao and You, 2019; 2021)). Nowadays, studies increasingly recognize the role and function of psychological capital and are believed to have the potential to attain optimal workplace flourishing (Luthans et al., 2007b). However, few studies have focused on teachers, especially from a positive psychological perspective (e.g. Bissessar, 2014; Ferradás et al., 2019; Kun & Gadanecz, 2022; Clarence et al., 2021; Freire et al., 2020; Ganotice et al., 2016; Guo et al., 2022; Kun & Gadanecz, 2022; Li, 2018; Soykan et al., 2019).

PsyCap contains positive personal resources that could play a protective role in TWB (Zewude & Hercz, 2021; Zewude & Hercz M., 2022). It improves teachers' behavioural, attitudinal, and performance outcomes and enhances the challenges of the loaded tasks (Avey et al., 2010; Rabenu et al., 2016). A study by Soykan et al. (2019) also found that teachers with more PsyCap reported better well-being, less stress and better-coping strategies. Besides, Soykan et al. (2019) added that higher PsyCap levels were associated with higher teacher well-being levels and lower stress levels. This implies that PsyCap significance to teachers' well-being and coping with stress is enormous. Furthermore, PsyCap (i.e., hope, efficacy, resilience and optimism) is positively and significantly associated with and substantially influences TWB (Chen et al., 2019). PsyCap is an influential predictor of teachers' well-being, motivation, improved coping skills, and lower level of stress (Zewude & Hercz, 2021a). Several studies argue that PsyCap has various advantages, such as boosted teacher well-being and job performance, improved teacher performance, reduced level of burnout and is highly associated with TWB and happiness (Chen et al., 2019; Clarence et al., 2021; Ganotice et al., 2016; Guo et al., 2022; Li, 2018, Ferradás et al., 2019; Freire et al., 2020, Kun & Gadanecz, 2022).

Further, Li (2018) emphasized that PsyCap and meaning in life positively predict teacher well-being. Another study indicated that PsyCap should also be an essential predictor of positive work-related well-being, such as health and job satisfaction (Seggelen & Dam, 2016). Avey et al.'s (2010) research show significant relationships between PsyCap and employee well-being, where employees who have high levels of well-being achieve high performance (ŞEN & Basım, 2018).

The second considerable construct predicted by PsyCap is WTM. From the positive psychology perspective, PsyCap can predict work task motivation (Ferraro et al., 2018; Fermiano Fidelis et al., 2021; Rodríguez-Cifuentes et al., 2020; Skhirtladze et al.,2019) and teachers' well-being (Collie et al., 2015; Ryan & Deci, 2000; Zewude & Hercz, 2021). WTM is the most potential positive personal resource for overcoming teachers with stress and a vital strategy to enhance teacher well-being (Zewude & Hercz, 2021a). One of the best fundamental practical theories connecting PsyCap, WTM and TWB is SDT. SDT targets the social environment with which one interacts in one's individual internal resources and that nurtures individuals and enables them to develop specific behaviours, inner states, situations, and motivations (Liu et al., 2021). In SDT, individual prosperity describes a positive psychological state that incorporates the intrinsic motivation that enables individuals to show internal psychological growth, integrates their personalities, sustains psychological stability, fosters positive life processes and determines personal and individual well-being (Ryan & Deci, 2000).

Several studies have shown a connection between PsyCap and WTM. For instance, Ferraro et al. (2018) and Jafri (2017) found that PsyCap incorporates a significant positive relationship with work motivation and includes a positive effect on TWB, although it is a stressful profession (Van Dick & Wagner, 2001). Jafri (2017) found that PsyCap is one of the most potent predictors of students' motivation. It substantially supports the development of well-being in people functioning in severe stress situations (Izydorczyk et al., 2019). PsyCap was closely related to higher intrinsic motivation and identified regulation, but it was also associated with lower levels of amotivation (Datu et al., 2018). Furthermore, motivation mediated the connection between PsyCap and engagement across time (Datu et al., 2018). There is a strong relationship between PsyCap and intrinsic motivation, favouring teacher well-being (Ryan & Deci, 2017). Additionally, motivation mediates between the satisfaction of needs and well-being (Milyavskaya & Koestner, 2011); intrinsic motivation mediates the relationship between PsyCap and well-being (Siu et al., 2014b). Hence, teachers with high levels of PsyCap tend to have high motivation, are more intrinsically motivated, and have highly integrated regulation; they also tend to show less external regulation, introjected motivation, or amotivation. Thus, motivation mediates the relationship between PsyCap and TWB (Ryan & Deci, 2017).

Another considerable coping resource for overcoming teachers' well-being is coping with stress (CWS). An array of empirical findings support the link between PsyCap and coping with stress. For example, several correlational studies suggest a significant positive relationship between PsyCap (hope, efficacy, resilience, and optimism) and well-being. Rabenu et al. (2016) argued that the more PsyCap (hope, self-efficacy, resilience, and optimism) an individual has, the more he or she will use coping through acceptance or change and less through withdrawal.

The latest studies, such as Luthans et al., 2015); Rabenu et al., 2016; Rabenu & Yaniv, 2017), the higher the PsyCap will be, the higher coping skills, the better motivation and set clear goals for their future life, self-solution-centred in challenging situations, thrive and welcome challenges, low levels of stress, and better overall well-being. PsyCap also is a positive force for combating stress(Ganotice et al., 2016). There is a positive association between PsyCap and CWS (Rabenu & Yaniv, 2017; Zewude & Hercz, 2021). A positive relationship was found between CWS and TWB(Rabenu & Yaniv, 2017; Zewude & Hercz, 2021). Furthermore, WTM and CWS mediate the relationship between PsyCap and TWB and found that it was predicted and played a potential mediating role (Rabenu & Yaniv, 2017; Zewude & Hercz, 2021). In a study by Prasath et al. (2021), coping strategies were mediating between PsyCap and university teacher well-being. Besides, Ann Masten (2001) and Masten and Reed (2002) developed the concept of resilience that involves inner resources and everyday skills that can be recognized, assessed, applicable, maintained, and cultivated in all age groups and are essential for all psychological situations. Also, Masten (2001) found that resilience plays a significant, decisive role in individuals' recovery from adversity, looking optimistically at difficulty and developing the capacity to respond to pressure effectively. Specifically, Rabenu and Yaniv (2017) found the highest correlation between self-efficacy and coping through change. Furthermore, optimism was positively correlated with positive reappraisal and acceptance and inversely associated with withdrawal and avoidance coping (Efklides & Moraitou, 2013). Thus, optimists expect positives from life and are confident about their future; they feel happy and satisfied with their experiences and tolerate the most challenging life events (Luthans et al., 2015). These results indicate that PsyCap's core constructs are crucial in coping with teachers' work-life stress.

Furthermore, Rabenu and Yaniv (2017) found that hope has a significant negative relationship with coping through withdrawal. In contrast, optimism was found to have close to

no ties with withdrawal and was mainly related to acceptance. In sum, PsyCap is a potential predictor of coping with stress. Furthermore, the dimension of coping strategies, such as coping through change, mediated PsyCap and well-being, whereas coping through acceptance and withdrawal did not(Rabenu et al., 2017). In contrast, Zewude & Hercz (2021) found that coping through acceptance and change was fully mediated by PsyCap and TWB dimensions while coping through withdrawal was not. Therefore, based on the above literature, this study considered CWS an essential strategy to improve teacher well-being and played a mediator role between PsyCap and teacher well-being(Zewude & Hercz, 2021a).

2.3.2 Work task motivation, coping with stress and teacher well-being

A study conducted by Ferraro et al. (2018) and Rabenu et al. (2016) found that WTM and coping with stress, hereafter called CWS, are the best potential personal resources to increase teacher well-being. Their significance to TWB is also enormous. WTM and CWS are the most critical psychological constructs that substantially improve teacher well-being of individual functioning in a stressful working environment(Zewude et al., 2022; Zewude & Hercz, 2021). The relationship between WTM and CWS is discussed in detail as follows. First, WTM played a positive and decisive role in enhancing TWB. Second, WTM plays a significant role in teachers' well-being by increasing job satisfaction and lowering stress levels (Nie et al., 2015). Third, several studies argue that WTM has several advantages, such as potentially improving teachers' well-being and productivity(Ferraro et al., 2018); and better psychological adjustment and well-being(Ryan et al., 2008). Besides, few studies on teachers' motivation (e.g., Gobena, 2018; Katz & Shahar, 2015; Liu & Onwuegbuzie, 2014) noted that teachers' motivation determines quality education, increases job satisfaction, is desirable for students' learning, encourages teachers to use innovation.

In addition, self-determination theory is the most noticeable and applicable theoretical model that links teachers' well-being and work task motivation. According to Ryan & Deci (2000), self-determination theory (SDT) motivation has innumerable benefits in acting toward fruitful results, such as parents, health care providers, religious leaders, managers, coaches, and teachers. SDT differentiates several types of motivation based on various goals or reasons that give rise to an act (Ryan & Deci, 2000). According to Fernet et al. (2008), SDT has three broadly known motivations from low to high: amotivation, extrinsic motivation, and intrinsic motivation. Self-determined kinds of motivation have positive and negative consequences or outcomes. For example, intrinsic motivation and

identified regulation result in positive effects, whereas external regulation, introjected regulation, and amotivation lead to negative results (Fernet et al., 2008). In addition, self-determined types of motivation in the workplace are associated with higher job satisfaction (Fernet et al., 2008).

As found in the scientific literature, the-SDT, intrinsic motivation enables individuals to develop internal psychological growth, integrate their personality, allow psychological stability, and foster positive life processes (Ryan & Deci, 2000). Furthermore, Ryan, Huta, and Deci (2008) found that intrinsic motivation and identified regulation are the most positive determinants of a personal and higher level of well-being. Thus, teachers with high psychological capital tend to have high work task motivation, are more intrinsically motivated, and have highly integrated regulation. Therefore, motivation will mediate the relationship between psychological capital and teacher well-being.

Second, CWS positively and significantly predicts teacher well-being. Many scholars investigated the relationship between coping with stress and well-being. A study conducted by Prasath et al. (2021) states that coping strategies positively predict teacher wellbeing. There was also a positive and significant association between well-being and coping through change (Rabenu et al., 2016); however, no important relationship was found between well-being and coping through acceptance and withdrawal. Researchers have evidence that coping style has contributed to physical and psychological health (Park & Adler, 2003).

In contrast to Rabenu et al. (2016), Zewude & Hercz (2021) found that coping through acceptance negatively affected organizational well-being and student interaction well-being. However, it has no relationship with workload well-being. Coping through change also had a negative direct effect on the workload and student interaction well-being. However, it has no significant direct effect on organizational well-being. Coping through withdrawal positively and significantly affects the well-being of workload, organizational, and student interaction (Zewude & Hercz, 2021a).

2.3.3 Coping With Stress and Work Task Motivation

Coping resources are essential to modify people's reactions to stress (Rabenu & Yaniv, 2017). Coping is also much more effective than problem-solving, has positive relationships with motivation, and serves other healthy functions in life (Lazarus & Folkman, 1984b). In addition, studies have found a significant correlation between coping strategies and motivation.

For example, Amiot et al. (2004) have studied the relationship between coping and the self-determination theory of motivation. Similarly, Knee et al. (2002) found that self-determined motivation positively and significantly correlated with coping through acceptance and positive reappraisals.

2.4 Socio-demographic Factors on Teacher Well-being

Socio-demographic characteristics can influence constructs of teacher well-being (Collie et al., 2015). A meta-analysis study shows that income, education, and socio-economic status were more impactful on men's well-being than women's (Pinquart & Martin, 2001). Although female teachers tend to report higher stress and older, more experienced teachers, report a higher level of well-being (Gloria, Faulk, & Steinhardt, 2013; Collie et al., 2015). However, ethnic background, school, and education were not related to well-being constructs among teachers (McInerney et al., 2015). Collie et al. (2015) also reported higher teacher well-being among male teachers, older and more experienced teachers, and those working as resource and generalist classroom teachers. Furthermore, there are grounds relevant to gender, age, teaching experience, education qualification, and monthly income for examining teacher characteristics concerning well-being (Collie et al., 2015).

2.5. The Ethiopia Educational System and Challenges of Higher Education

Ethiopia is the second-largest country in Africa by population, and it has recently undergone a rapid university expansion that has led to several challenges. A trend has been observed of university teachers leaving the profession and showing no further interest in teaching (Ministry of Education, 2018). However, Ethiopia's higher education was initiated in the 1950s, founding the university college of Addis Ababa for 64 million population (World Bank, 2003). Besides, before 1974, Ethiopia had a quite 90% illiteracy rate. It had been poor compared with the remaining African countries in schools, colleges and universities (Ministry of Education, 2015). After the Ethiopian Revolution, an emphasis was placed on increasing literacy in rural areas. As a result, by 2015, the literacy rate had risen to 49.1%, though this can often be still poor compared to most African countries (Ministry of Education, 2010). After the fall of socialism in 1993, Ethiopia revised the curriculum twice (Ministry of Education, 2010; 2018). The educational reforms are reshaping the structure of the higher education system and, therefore, the base for establishing 33 education training colleges and 50 universities. The new curriculum launched by the Ministry of Education in Ethiopia (2018) could be a suitable model of European education, especially in teaching and learning and inspiring global

competitiveness by benchmarking different developed and developing nations (Ministry of Education, 2018).

Therefore, secondary general education covers twelve years of schooling, and it is divided into primary (grades 1-6), junior secondary (grades 7 to 8), and senior secondary: grades 9-12 (Ministry of Education, 2018). Subsequently, a new curriculum offered 13 years of general education. The new structure consists of eight years of primary education (divided into two four-year cycles: essential primary and general primary), resulting in the first school certificate and four years of general education (Grades 9 to 12). Students will take the ultimate leaving examination in the final phase of grade 12. After that, they will prepare to continue their studies at the higher education level or join a vocational education college (Ministry of Education, 2018).

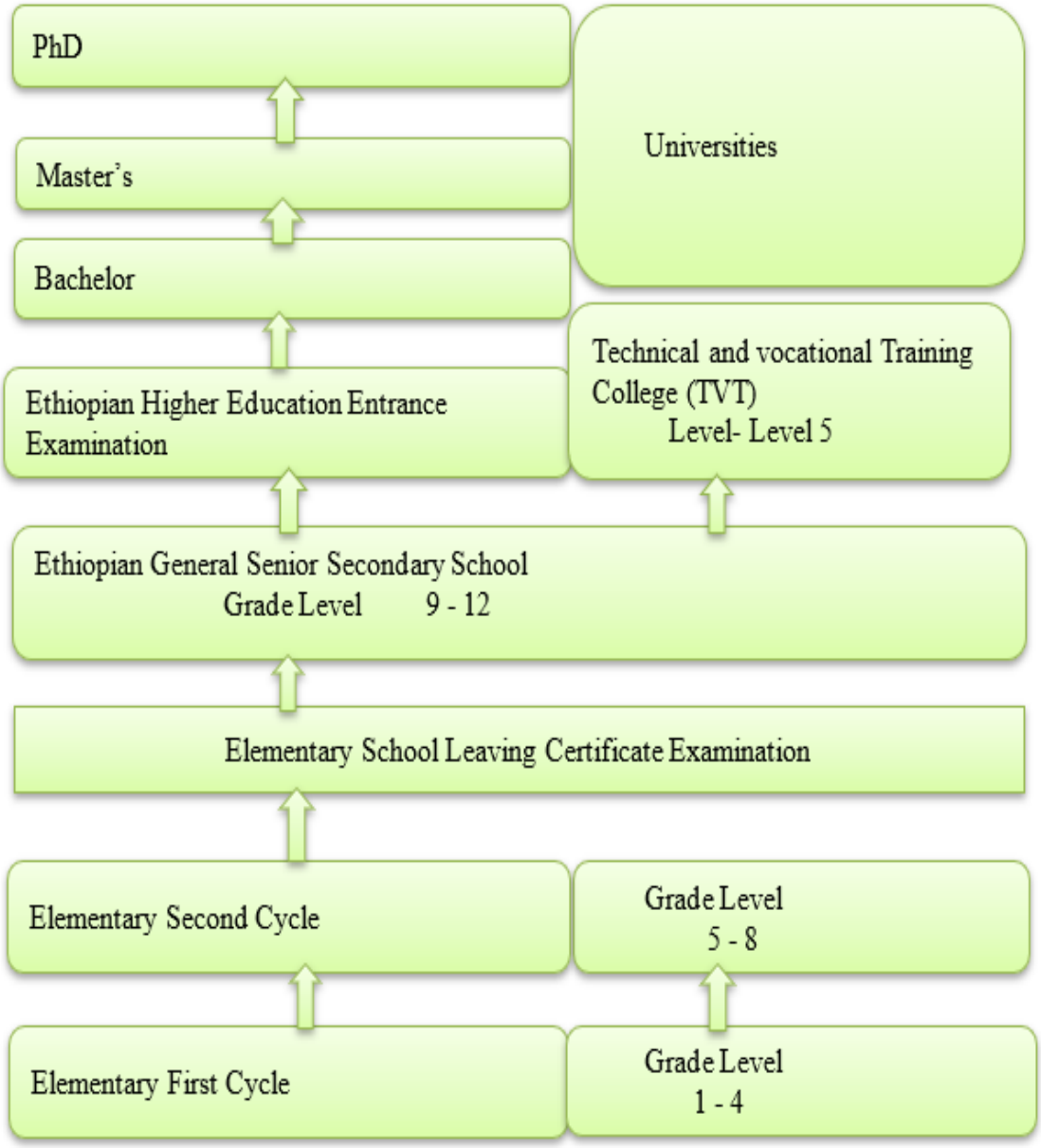
Addis Ababa University and other teaching institutions strived to fulfil global standards with considerable early success (World Bank, 2003;2017). However, Ethiopia's higher education system faces many challenges with leadership, large class size, lack of academic freedom, few qualified academic staff, declining educational quality, lack of best research outputs, and poor linkage with the international scientific community (World Bank, 2017). Recognizing these shortcomings, Ethiopia is currently engaged in an exceedingly highly ambitious effort to realign its educational system to contribute to its national strategy for economic process and poverty reduction (World Bank, 2017). For instance, in June 2003, the Ethiopian Parliament ratified a new Higher Education Proclamation known as Institutional and Academic Reform (IER). At the institutional level, level, the recent proclamation awards substantial autonomy has been awarded to universities. University Boards and staff will choose their institutional leaders, and non-academic staff have been de-linked from the civil service. In addition, strategic planning, income diversification, and information and communications technology (ICT) development are encouraged to meet the fiscal, space and instructional requirements of the ongoing and planned expansion in enrollment (World Bank, 2017).

According to World Bank (2003), tertiary education in Ethiopia is aimed at and plays a vital role in poverty reduction, and it has four primary goals. First, it alleviates poverty through direct economic growth. Second, it reduces poverty through empowerment and redistribution. Thirdly, it strengthens the education sector; fourth, it contributes significantly to research and innovative technology transfer and improves rural incomes and food supply. However, during the 1990s, over 50 per cent of estimated academic staff were lost to drain brain (World Bank,

2003). In this context, capacity building in Ethiopia has been a double-edged sword: large numbers of well-educated Ethiopians still leave the teaching profession and the country to pursue better pay and attractive jobs in the region (World Bank, 2017).

Figure 1.

The General Educational Structure of Ethiopia (Source: Ethiopian Federal Ministry of Education, 2018)



2.6. Adaption, Translation, and Validation of the measure

Cross-cultural validation is a method for selection, adaptation, and validation of instruments designed in one culture for use in research in another country with culturally different populations, using the following priorities (Flaherty, 1988): (a) Instruments that have been extensively tested and found psychometrically sound in one culture but have not been tested and determining meaningfully applicable for use in another culture; (b) Instruments that have high face validity but require further psychometric testing in the other culture. It has often been applied in social science research in which self-reporting measures or measurement tools, usually questionnaires adapted for use in other languages other than the original (Flaherty, 1988; Tyupa, 2011).

The instruments used in this study were initially developed for other cultures; namely, the *Psychological Capital Questionnaire (PCQ-12)* developed by Luthans et al. (2012) for the US culture and *Teacher Well-Being Scale (TWBS)* and the *Work Task Motivation Scale for Teachers (WTMST)* instruments were developed for English-speaking teacher samples for the Canadian cultural context (Collie et al., 2015; Fernet et al., 2008). The *Coping With Stress Questionnaire (CWS-Q)* measure was developed for Israel's cultural context (Rabenu et al., 2015; Rabenu et al., 2016). Crucially, the portability of the PCQ-12, TWBS, CWS-Q and WTMST to a culturally diverse and predominantly non-Western and non-North American environment should be investigated before inferences derived from the measures are used with confidence in the Ethiopian context. Therefore, cross-cultural validation is necessary (Davidov et al., 2018).

As a result, this study followed the proposed guideline of Beaton et al. (2000). Hence, we performed the following stages based on the proposed guideline of Beaton et al. (2000) regarding cross-cultural validation. *Stage 1: Initial translation/ Forward Translation*. The first stage in the adaptation process is the forward translation method. The forward translation of the English version of the PCQ-12, TWBS, CWS-Q and WTMST was performed by two experienced bi-lingual translators, one of whom was an English Language Training expert and the other a psychologist. *Stage 2: Synthesis of the translation*: In this stage, we have selected two translators; one is a bi-lingual language expert but unformed, and the other is a psychology professor who is informed about the purpose of a questionnaire. *Stage 3: Back Translation*. The translator then translates the instruments back into English. *Stage VI: Expert Review*. In

this stage, both translators meet and check the cross-cultural equivalence of the instrument. There was no discrepancy between the original and the translated version found. *Stage 5. Administration of the instrument/ Validation*. The final stage of the adaptation process is the pretest and validation processes.

In addition, the validation of the instrument was done based on the recommendation of Davidov et al. (2018) and Hair et al. (2019) through four processes: (i) evidence of reliability, (ii) confirmation of construct validity through convergent, divergent, discriminant validity and Pearson correlation (iii) confirmatory factor analysis and model comparison, and (iv) measurement invariance. These are discussed in chapter four, the method section, in detail. After ensuring the validation process, the next step was the mediation analysis was carried out.

2.7. Mediation Analysis

Mediation analysis is defined as the process in which an indirect effect, where the effect of the independent variable on the dependent variable goes through a mediator (Cheung & Lau, 2008). Mediation analysis is needed because the relations may be modified or informed by adding a third variable in the research design. In addition, the relationships between psychological variables are often more complicated to make inferences in simple bi-variate correlation (Fairchild & MacKinnon, 2009).

Hair et al. (2019) also noted that the mediation model must be addressed three main questions at the end of the study: (a) Is the indirect effect significant? (b) Is the mediated main effect significant? and (c) If both mediated main effect and indirect effect are significant, what is their relative strength and significant? As a result, in the second study, even though the direct and indirect effect of psychological capital and the direct effect of work task motivation on teacher well-being were significant, their effect was not strong enough. For instance, we added another influential factor mediating the relationship between PsyCap and teacher well-being: coping with stress. Evidence indicated that in psychological studies and due to the complexity of the problem, more than one mediator's variable is needed to enhance a more profound understanding of a causal link between an independent and a dependent variable (Hayes, 2022).

Studies in psychological outcomes are often solely based on more than one mediator variable to know the interrelated effect (Wu & Zumbo, 2008). However, teacher well-being is affected by several internal and external factors. Therefore, PsyCap was designed to change two mediators, WTM, and CWS, to enhance TWB. Rabenu et al. (2016) outlined the three

coping strategies as a mediator most targeted teacher stress management: coping through change, acceptance, and withdrawal. All three coping strategies target all teacher well-being dimensions: workload, organizational and student interaction well-being, and separately mediated the relationship between PsyCap and the dimensions of TWB (Zewude & Hercz, 2021a). In psychological studies, the multiple mediator models (dimensions of coping strategies and dimensions of work task motivation) are the theoretical basis of several interventional and associational studies (Rabenu et al., 2016; Milyavskaya & Koestner, 2011; Zewude & Hercz, 2021). As a result, the single (work task motivation and coping with stress) and multiple mediator models (dimensions) employed in this dissertation is the correct model for enhancing teacher well-being. To test mediation analysis, four processes were carried out: (i) confirmatory factor analysis, (ii) examination of measurement and structural model test, (iii) Path analysis, (iv) structural equation modelling (iv) Annova. These are discussed in chapter four, the method section, in detail.

2.8 Implications

2.81. Educational Implications

Based on the above review, we propose educational impacts on teachers' well-being for students, schools, and government policymakers. Unfortunately, there are few empirical and theoretical pieces of evidence on the role of positive psychological capital on teachers' well-being (e.g., Ross et al., 2012, Eurofound 2013, Kern et al., 2014, Mccallum et al., 2017, Kaur and Singh, 2019, Malureanu and Enachi-Vasluianu 2019).

Literature often describes teacher well-being negatively, like how low mental health of teachers increases teacher stress, frustrations, and problems related to retention at the workplace, anxiety, mental health, and burnout (Kaur and Singh 2019). Based on the above studies and the existing literature included in this dissertation, we propose the following implications and intervention strategies that help to enhance teachers' well-being using positive psychological capital.

2.82. Implications for Teachers

Positive functioning is not merely extant stress; it conjointly entails thriving physically, mentally, socially, and professionally (Kern et al., 2014). Scholars conduct a few critical studies to promote teacher well-being. School factors and their well-being are deeply connected to the quality of their work and individual lives (Collie et al., 2015, Mccallum et al., 2017). Therefore, teacher well-being is critical for the future of education.

Teachers' Initiatives Strategy: Recreation sessions, reading a book, having time with family and friends, critical thinking approaches, management of emotions, mindfulness techniques, participation in sports activity, meditation and spending some time alone help to reduce stress levels and to support teachers in maintaining their well-being (Kaur and Singh 2019).

Professional learning activities strategy: Career development and professional learning activities enable professional growth and life satisfaction through professional collaboration. Development focus includes teachers' specific needs, and professional learning programs focus more on teachers' holistic development, pleasure, happiness, and well-being, then we will be able to produce competent teachers (Kaur and Singh 2019).

Individual teacher well-being strategies: The Meta-analysis study evidenced that teachers' personal qualities and abilities have contributed to promoting teacher well-being like aptitudes, beliefs, decision making, self-understanding, resilience, and flexibility (McCallum et al., 2017). According to Mccallum et al. 2017, the most flourishing teacher well-being interventions are reflection strategies for approaching expert practice; mindfulness training to handle stress, training psychology to build learning communities, increasing mindset approach to resolving problems, and self-care practices to restore when needed, celebrate achievements and success to feel valued.

Positive psychology approaches or strategies: Seligman's work on positive psychology has been well documented and promoted across the schooling and education sector (Mccallum et al., 2017). Concerning this, Kern et al. (2014) identified the associations between multiple aspects of employee wellbeing and three primary outcomes, including physical health, life satisfaction, and professional thriving, using the positive psychology model. In addition, Kern et al. (2014) found that "when lecturers do well across multiple successfulness domains, they are conjointly a lot of committed to the varsity, and a lot of happy with their health, life, and jobs".

Resilience strategies: Enhancement initiatives to advance teacher resilience have addressed the complex nature of teachers' work and interactions and equipped teachers with the adaptability to respond successfully to difficult experiences (Mccallum et al., 2017).

2.8.3. Implications for Universities

There are a limited number of theoretical and empirical pieces of evidence in which teachers' well-being impacts the school or universities (Ross et al. 2012, Kern et al. 2014, Kaur and Singh 2019, Malureanu and Enachi-Vasluianu 2019). However, teacher well-being has been overlooked in different studies, especially the positive aspect. Therefore, on the basis studies mentioned above and of the present literature included in this dissertation, we propose the following intervention strategies for those schools that want to enhance teachers' well-being:

School-wide positive behaviour intervention supports: Research evidence indicated that interactive school activities as a means of instruction to harmonize students' involvement with group work improve teachers' well-being (Malureanu and Enachi-Vasluianu 2019). Besides, a safe learning environment is supported by promoting tolerance and cooperation in school. Therefore, teachers should provide care and support to ensure healthy relationships among students and create a learning environment where everyone feels comfortable and safe, which leads to well-being (Malureanu and Enachi-Vasluianu 2019).

- Providing simple, efficient, and valuable skills, staff in School-wide positive behavior interventions and a cooperative learning environment in the school creates a positive, supportive culture (Ross et al., 2012). Besides, a significant impact of school-wide positive behaviour intervention and supports on teacher well-being occurs through the development of team skills, collaboration, and positive relationships. In addition, effective practices lead to teachers' feelings and support (Ross et al., 2012).
- The university context needs to be changed and improved to meet students' needs, foster students' psychological well-being, and impact teachers (Kibret & Tareke, 2017).

Institutional Initiatives: Teachers believed in streamlining planning and managing the pressures of teaching with the support of leaders. They emphasized that organizational strategies should improve over time. They feel that new professional entrants need help to manage the workflow and pressures during their training and early career and stay committed to the job (Kaur and Singh 2019). Furthermore, teachers identified that the institution should:

- provide a supportive work culture;
- provide facilities to teachers to manage their well-being and personal growth;
- develop a problem-solving culture at the workplace;
- facilitate the development of teachers at vulnerable times; and
- provide a means of sharing best practices across schools (Kaur and Singh 2019).

2.8.4. Implications for Students

Teachers' well-being and positive psychological capital are played a pivotal role in students' academic educational intervention and effective coping strategies (e.g., Sharrocks 2014, Selvaraj 2015, Malureanu and Enachi-Vasluianu 2019). Positive psychology intervention also has important implications for students, like designing systems that focus on psychological capital. For example, the leading strategies for student well-being are hope, efficacy, resilience, and optimism (Selvaraj 2015). Inaction, the outcomes of interactive methods of promoting teacher well-being are beneficial for the students: formation of positive identity, proper management of thoughts and emotions, and

the development of efficient learning abilities, all leading in the end to robust social integration and contribution (Malureanu and Enachi-Vasluianu 2019).

2.8.5. The Implication for Policy Makers

Educational policies are rooted in an overemphasis on institutional well-being leading to dangerous imbalances in teaching and teacher education across the globe (Margolis et al. 2014, Negash 2006). As a result, mindfulness-based wellness education programs in teacher education should be restructured, focusing on bringing present awareness to a teacher's well-being. This program also supports teachers in developing their ability to regulate emotions and improve motivation and stress levels (Margolis et al., 2014). Regarding this, Mccallum et al. (2017) depicted that mindfulness-based wellness education will help promote resilience, energy, motivation, and teacher self-efficacy, producing positive outcomes for the individual teachers and the individual teachers at the community level.

There are different programs across the globe greatly value-enhancing teachers' well-being. For example, Margolis et al. (2014) suggested linking institutional concepts with the realities of the classrooms, supporting teaching as a clinical profession and encouraging teachers to reflect on areas of resistance to facilitate more immediate improvements to teacher well-being and quality. Besides, Eurofound (2013) noted a policy recommendation to enhance teacher well-being through policy interventions targeting employees' health, well-being, safety, employment quality, the average relationship between work and well-being, and conducive working conditions.

Finally, the following section emphasizes the aim of the four empirical studies, research questions and proposed hypothesis.

2.9. Summary

In this chapter, I have discussed the multi-dimension concepts and significance of well-being for understanding teacher well-being. Also, I have summarized concerns with major theories that link TWB, PsyCap, WTM, and CWS to help us develop testable hypothetical models. Besides, the meanings, dimensions, significance and assessment of TWB construct and its associated factors such as PsyCap, WTM, CWS and socio-demographic factors are clearly explained. Furthermore, I have also reviewed research concerned with the assessment of PsyCap, WTM and CWS concerning teachers. Psychological constructs such as PsyCap, TWB, WTM and CWs are often multi-faceted and measuring well-being may be complex and debatable. For instance, Collie et al. (2015), Ryan and Deci (2017) and Diener (2009) have called examining well-being in numerous contexts, especially in work. As a result, these

constructs are work-related and have relied almost exclusively on self-report assessment measures to handle teachers' work activities and professional development. Self-report assessment of the scale appears to possess adequate psychometric properties because "what we measure affects what we do in the future" (Embse & Mankin, 2020). However, studies on teacher well-being and their association with PsyCap, WTM and CWS were scarcely found in the Ethiopian cultural context when this study was formulated. This constitutes a research gap that the present study attempts to fill. The relationship between these variables warrants further examination in new cultural settings, such as Africa (Ethiopia). In addition, I have put much energy into understanding the various models of teacher well-being and assessment methods that reflect the actual work-life of teachers.

Last but not least, I have discussed the importance of the literature review and its implication for teachers, students, universities and policymakers. Even though the previous literature has made these efforts, the teachers' well-being, its associated factors, such as PsyCap, WTM, CWS and socio-demographic factors, and cross-cultural validation of their respective assessments, are rarely researched. Therefore, the current chapter has laid a substantial base for my dissertation study and provided a strong theoretical background and convincing empirical evidence for my project. Specifically, it has clarified the research niche and relevant research hypothetical model for my work and given rational justification and references for the research hypotheses and research methodologies, such as adapting, developing and validating instruments for assessing the four focus areas using Ethiopian University teachers.

3. RESEARCH AIMS AND HYPOTHESES OF EMPIRICAL STUDIES

3.0 Introduction

This chapter focuses on describing the research aims and research hypotheses. It is grouped into two parts; the validation study and the main study following the research hypotheses and proposed conceptual models.

3.1 Aim of the Research

Based on the problem stated in Chapter one and established theoretical and empirical studies in Chapter two, this research study's overall goal was to examine the mediation role of Work Task Motivation (WTM) and Coping With Stress (CWS) in the relationship between Psychological Capital (PsyCap), and Teacher Well-Being (TWB) and to adapt, develop, validate and ensure the suitability of the Psychological Capital Questionnaire (PCQ-12), Coping With Stress Questionnaire (CWS-Q), Work Task Motivation Scale For Teachers (WTMST) and Teacher Well-Being Scale (TWBS) instruments in an Ethiopian context. The hypothesized models presented in this chapter are derived from previously well-established theoretical frameworks and empirical studies briefly explained in Chapter two. Towards this goal, the study developed six research aims. First, to adapt, develop and validate tools that match teachers' work nature of PsyCap, WTM, CWS and TWB. Second, to determine the association between PsyCap, WTM and TWB of university teachers in Ethiopia. Third, to examine the direct effect of PsyCap and WTM on the TWB of university teachers. Fourth, to determine the association between PsyCap, CWS and TWB of university teachers in Ethiopia. Fifth, to examine the mediating role of CWS in the relationship between PsyCap and TWB of university teachers. Six, to explore the group differences in PsyCap, WTM, CWS and TWB. This research had four different studies. First, we collected evidence on the theoretical framework; then, we identified the suitable measures to assess PsyCap, WTM, CWS and TWB of university teachers. In study one, we conducted a validation study to ensure the suitability and psychometric evidence of the measures with a specific focus on the PCQ-12, CWS-Q, WTMST and TWBS of university instructors.

This study was very instrumental in testing the psychometric properties of the Amharic version of these instruments. Besides, in Study 3, we adopted and validated the newly translated CWS-Q (Rabenu et al., 2016) to the Amharic language to suit the Ethiopian educational context. These four instruments are enormously valuable for assessing teachers' overall

functioning in their work life and can complement the direct assessments of psychological capital, work task motivation, coping with stress and teacher well-being. Study 2 explored the psychological capital's direct and indirect effect on teacher well-being through work task motivation. This study also sought to determine the direct effect and mediator role of work task motivation (total and dimension) between psychological capital and teacher well-being (total and dimensions) in the Ethiopian sample. Study three determined the mediating role of coping with stress (total and dimensions) in the link between psychological capital and teacher well-being (total and dimensions). It is a very useful construct to enhance teacher well-being of university teachers in Ethiopia. Finally, study four explored the mediating role of work task motivation and CWS in the association between PsyCap and TWB. Besides, in this study, we examined the group differences in the four study constructs in the Ethiopian context. Based on the above-stated aims, this research is conducted in search of answers to the following research hypotheses by dividing them into two phases; the Validation study (three research hypotheses) and the main study (ten research hypotheses).

3.2. The Validation Study

Research Hypotheses for Study 1

The validation study aimed to examine the psychometric properties of the PCQ-12, the WTMST, the TWBS in Study 1, and the CWS-Q in Study 3 of the university teachers. To ensure the cross-cultural adaptation and validation of the measures, we employed various recommended analyses such as reliability, convergent validity, discriminant validity, divergent validity, construct validity with model comparison and measurement invariance. Therefore, this study hypothesized that PCQ-12, WTMST, TWBS and CWS-Q measures be expected to be psychometrically suitable and applicable for assessing higher education teachers in Ethiopia. Therefore, we hypothesized as follows.

RH_1: The instruments PCQ-12, WTMST, TWBS (Study one) and CWS-Q (Study three) measures used in this study are: (a) expected to be reliable and (b) convergent, divergent, and discriminant validity confirmed together construct validity in the Ethiopian context (Collie et al., 2015; Fernet et al., 2008; Luthans et al., 2012; Rabenu et al., 2016; Zewude et al., 2022; Zewude & Hercz, 2022).

RH_2: The TWBS, WTMST, PsyCap and CWS-Q will show good model fit using single-factor, correlated factor, bifactor, and higher-order CFA models with a group of university teachers (Collie et al., 2015; Fernet et al., 2008; Zewude et al., 2022; Zewude & Hercz, 2022b).

RH_3**:** The TWBS, WTMST, PCQ-12 and CWS-Q will be invariant across gender and university type (Zewude et al., 2022; Zewude & Hercz, 2022b).

3.3. Main Study

We conducted three studies on the relationship between PsyCap and TWB mediated through WTM (total and dimensions) in *Study 2,* CWS (total and dimensions) in *Study 3*, and WTM and CWS together in *Study 4*, under the framework of Positive Psychology Theory (PPT; Seligman, 2011), the Broaden-and-Build theory of Positive Emotions (BBPE; Fredrickson, 2004), Conservation of Resources Theory (CRT; Hobfoll, 1989; 2002), and Self-Determination Theory of motivation(SDT; Ryan & Deci, 2017). Evidence indicated that psychological studies needed more than one mediator variable to develop a deeper understanding of a causal link between an independent and dependent variable (Hayes, 2022). Thus, the main study of the mediation was divided into three parts, including testing the mediating role of WTM and CWS in the relationship between PsyCap and TWB. Therefore, in the main study the following research hypotheses (RH) were tested by separating them into three sub-parts.

Research Hypotheses (RH) for Study Two

Study two inferred that WTM (i.e., intrinsic motivation, identified regulation, external regulation, introjected regulation, and amotivation) could be the best strategy for PsyCap to impact TWB. The hypothesized mediating role of WTM on the link between PsyCap and TWB is derived from two theoretical perspectives. First, the SDT (Ryan & Deci, 2017) argues that using several motivation strategies enables instructors to use their maximum energy to their work effectively and to show positive psychological makeup toward the teaching profession. Thus, teachers with high PsyCap tend to have high WTM, are more intrinsically motivated, and have highly integrated regulation. SDT has also been associated with the relationship between PsyCap, WTM and TWB (Ryan & Deci, 2017). Second, PPT (Seligman, 2011) noted that focusing on well-being using positive psychology help to understand and build the factors that allow individuals, communities, and societies to flourish. Besides, motivation strategies and positive psychology as personal resources promote better TWB when a teacher's work is stressful.

Therefore, we operationalized PsyCap as an essential personal resource in the present research. In turn, instructors with high levels of PsyCap will likely experience greater intrinsic motivation and identified regulation and lower levels of external regulation, introjected regulation and amotivation. Besides, teachers may realize a better level of teacher well-being (workload, organizational and student interaction). Hence, we examined the mediator role of work task motivation between psychological capital and teachers' well-being. It also explored the direct effect of psychological capital and work task motivation (total and dimensions) on teachers' well-being (total and dimensions). Five hypothetical models (see Figures 2-6) were proposed and tested in congruence with scientific literature. Regarding PsyCap, WTM and TWB, the theorized relationships are displayed in Figures 2 and 3. Thus we proposed the following research hypotheses:

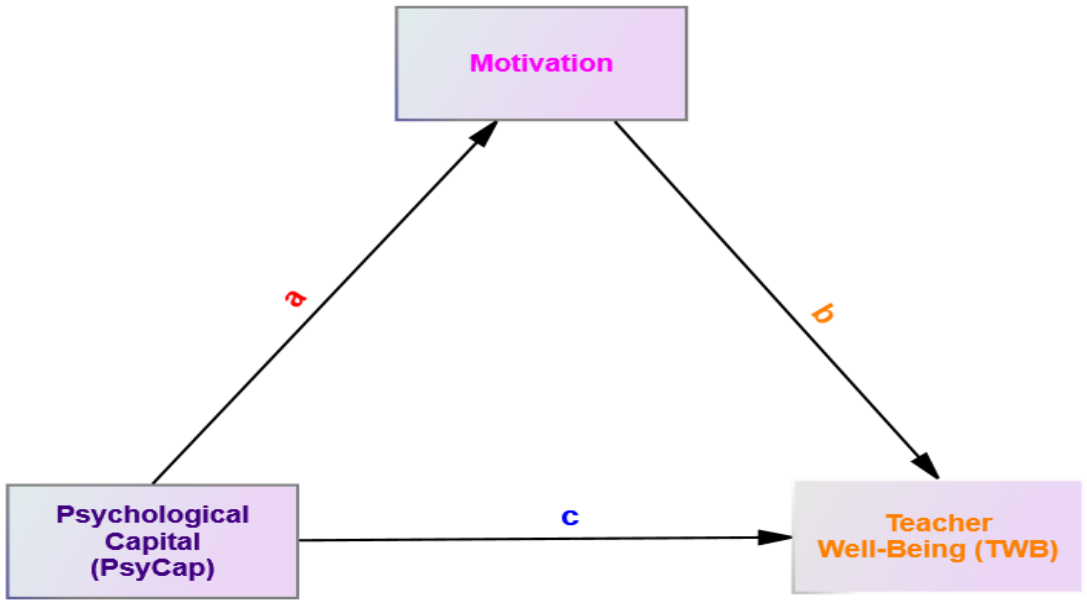
RH_4: (a) Psychological capital will be positively associated with work task motivation (total and dimension; Ferraro et al., 2018) and teacher well-being (total and dimension; Kun & Gadanecz, 2022; Zewude & Hercz, 2021); and (b) work task motivation (total and dimension) positively associated with teacher well-being (total and dimension; Zhao & You, 2019; 2021).

RH_5: (a) PsyCap has a direct effect on teacher well-being (total and dimension) and work task motivation (total and dimension; Li, 2018; Soykan et al., 2019; Zewude & Hercz M., 2022); and (b) Intrinsic motivation, identified regulation, introjected regulation, external regulation and amotivation is a predictor of workload well-being, organizational well-being and student interaction well-being (Zewude & Hercz, 2022; Zhao & You, 2019; 2021).

RH_6: (a) WTM mediates the positive relationship between PsyCap and TWB (Soykan et al., 2019; Zewude & Hercz, 2022) (see Figure 2).; and (b) Intrinsic motivation, identified regulation, introjected regulation, external regulation, and amotivation mediate the relationship between PsyCap and workload well-being, organizational well-being, and student interaction well-being (Bernard et al., 2014; Ferraro et al., 2018; Ryan & Deci, 2017; Siu et al., 2014; Zewude & Hercz, 2021; 2022)(see Figure 3).

Figure 2

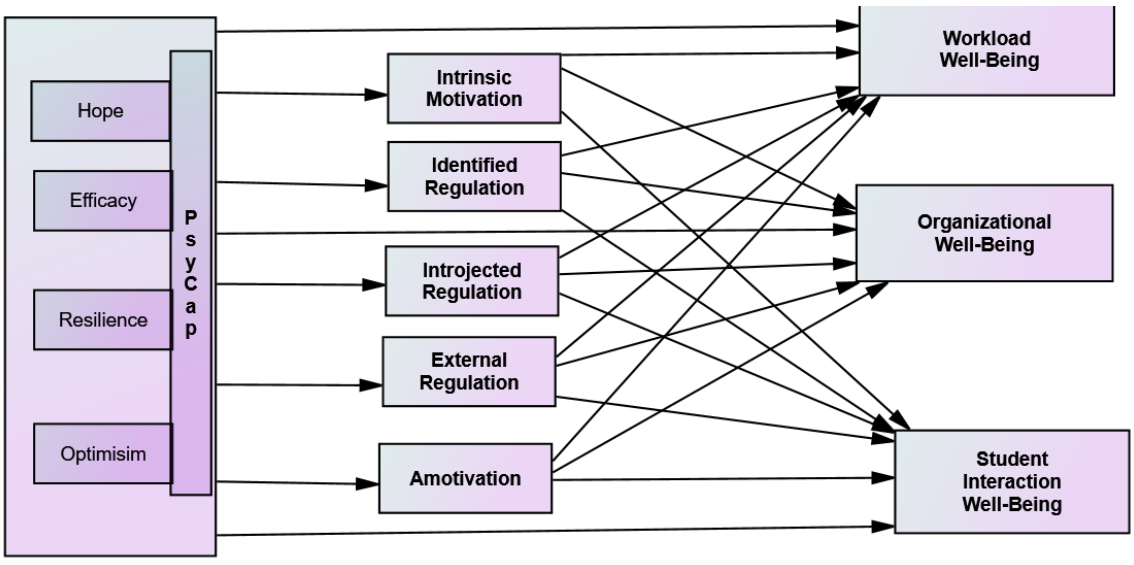
The mediation role of WTM between PsyCap and TWB



Note: The Conceptual mediation model of PsyCap, WTM and TWB

Figure 3

The mediation role of dimensions of WTM in the relationship between PsyCap and TWB dimensions



Note: The conceptual mediation model of PsyCap, dimensions of WTM and TWB

Research Hypotheses (RH) for Study 3

Study three examined the mediation role of CWS (total and dimensions) in the relationship between the PsyCap and TWB (total and dimensions) in Ethiopian university teachers. Moreover, this study was also tested to determine the psychometric properties of the CWS-Q in the Ethiopian context. However, the CWS-Q is presented in the sub-section of the validation study to avoid redundancy. We proposed a testable research hypothesis based on the latest scientific literature and theoretical framework constructed in Figures 4 and 5. Therefore, we hypothesized:

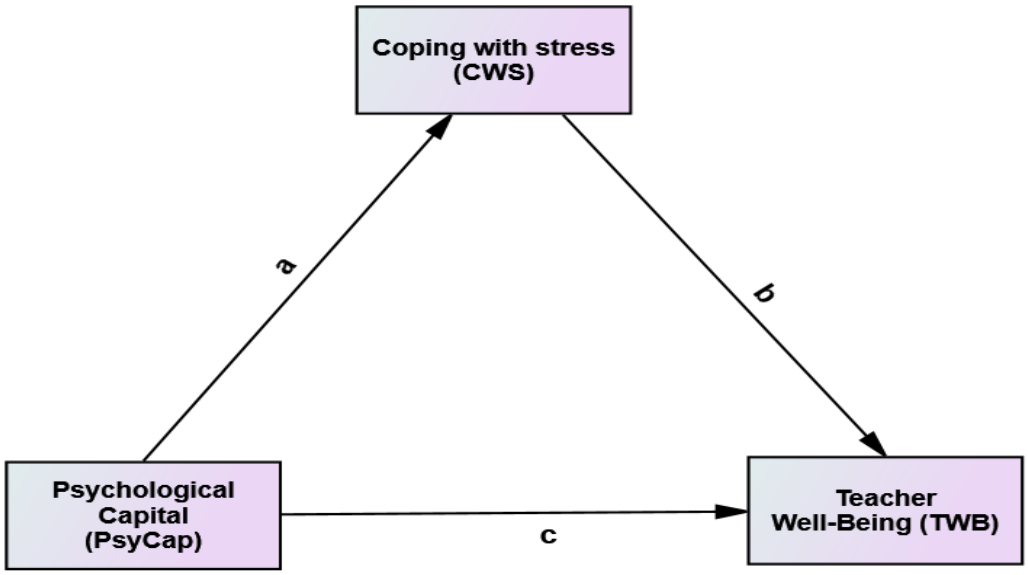
RH_7: (a) PsyCap will be positively associated with the total and dimension of CWS and TWB, and (b) total and dimension of CWS will be positively associated with the total and dimension of TWB (Rabenu et al., 2016; Zewude & Hercz, 2021).

RH_8: a) PsyCap predicted CWS and TWB, and (b) CWS as a positive predictor of TWB and mediated the relationship between PsyCap and TWB (Rabenu et al., 2016; Zewude & Hercz, 2021).

RH_9**:** (a) PsyCap would predict Coping through acceptance, coping through change positively and coping through withdrawal negatively, (b) positively predicted the dimensions of TWB positively, (c)Coping through acceptance and coping through change positively, and (d) coping through withdrawal would negatively affect and mediate the relationship between PsyCap with workload well-being, student interaction well-being and organizational well-being (Mikus & Teoh, 2022; Rabenu et al., 2016; Zewude & Hercz, 2021).

Figure 4.

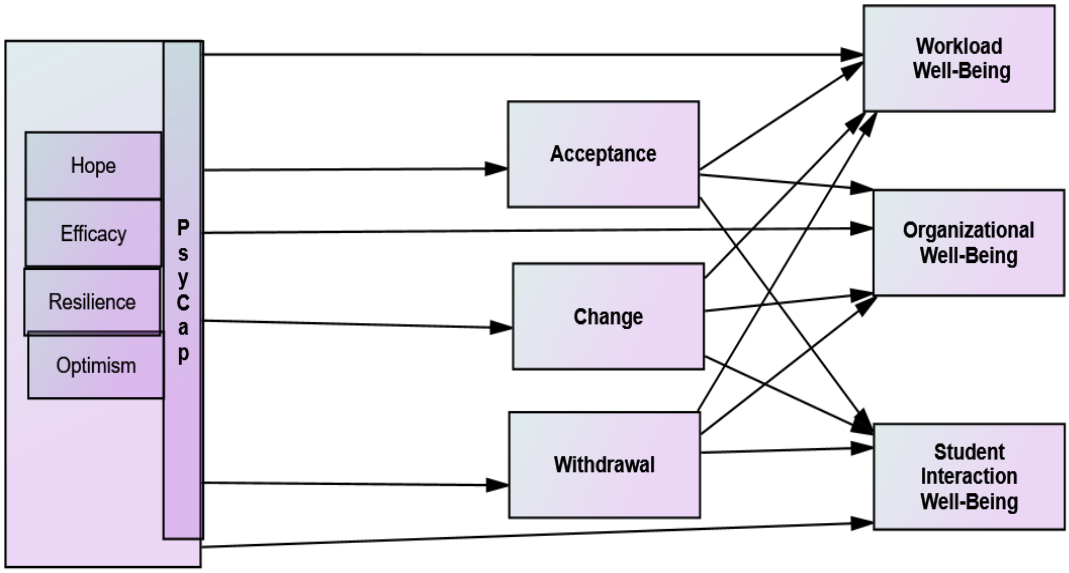
Conceptual mediation model: The mediating role of CWS on the relationship between PsyCap and TWB



Adapted from Zewude & Hercz (2021a, p. 1230)

Figure 5.

Conceptual Mediation Model: The Mediation Role of CWS on the Relationship between PsyCap and TWB



Adapted from Zewude & Hercz (2021a, p. 1231)

Research Hypotheses (RH) for Study Four

Study 4 examined the mediation role of WTM and CWS between PsyCap and TWB, the direct effect of PsyCap, WTM and CWS on TWB, and the direct effect of PsyCap on WTM and CWS in an Ethiopian higher education setting. This comprehensive mediation examination is essential for understanding the direct and indirect impact of PsyCap on TWB through WTM and CWS. Compared with other professions, teachers are obligated to fulfil enormous tasks such as teaching, student assessment, parental responsibilities, extracurricular activities, research, and community service, leading to their workload stress and affecting their individual and work life. Although the scientific literature has shed light on the association and the potential benefits of PsyCap, TWB, WTM and CWS to organizational and educational settings (Ferraro et al., 2018; Zewude & Hercz, 2021). Therefore, the present study has provided important theoretical and empirical implications to enhance teachers' well-being, explored the interrelationships among these variables, and examined the direct and indirect effects PsyCap on TWB through WTM and CWS. Figure 6 demonstrates the conceptual model of the interrelationship among the study variables in Study 4. To this end, the following research hypotheses were tested:

RH_{10}: PsyCap positively correlates with WTM, CWS, TWB and socio-demographic factors (Ferraro et al., 2018; Zewude et al., 2021, 2022).

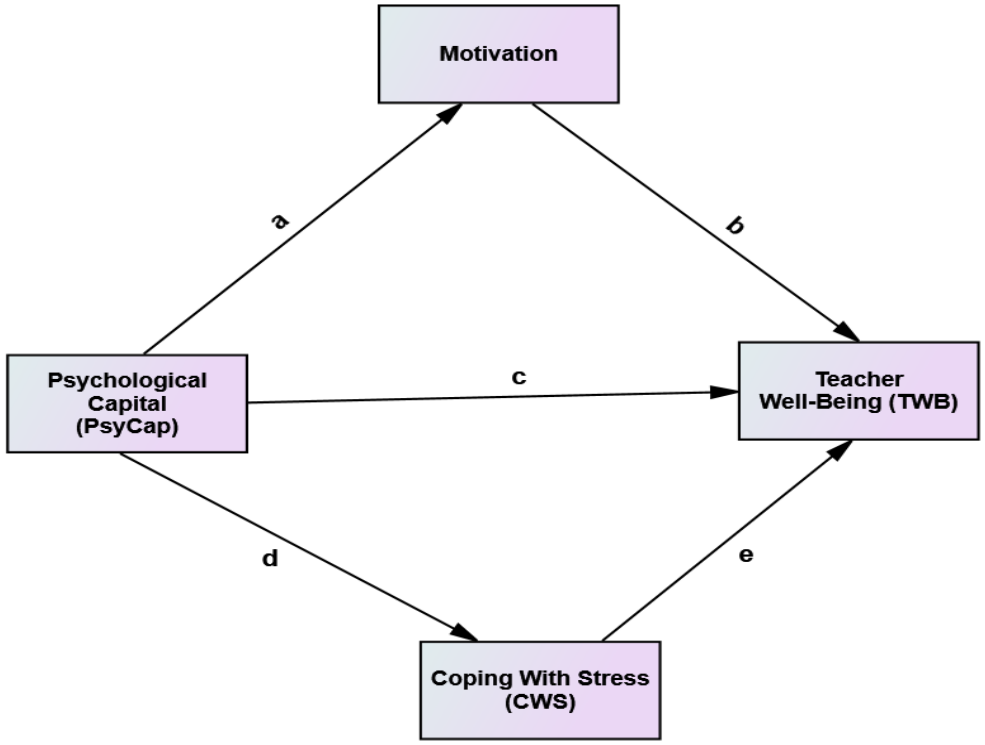
RH_{11}: There is a significant difference among socio-demographic factors (age groups, education, university type, and experience in teaching) on PsyCap, WTM, CWS and TWB (Zewude et al., 2022a; 2022b).

RH_{12}: PsyCap directly affects WTM (Foy & Mann, 2013; Cartwright, 2012; Kolkman et al., 2013; (b) TWB (Avey et al., 2010; Culbertson et al., 2010; Kun & Gadanecz, 2022; Zewude et al., 2021, 2022).

RH_{13}: WTM and CWS mediate the relationship between PsyCap TWB (Mikus & Teoh, 2022; Zewude & Hercz M., 2021, 2022) (See Figure 6).

Figure 6.

Conceptual Mediation Model: The Mediation Role of WTM and CWS in the Relationship between PsyCap and TWB



METHODS OF THE STUDIES

4.1 Research design

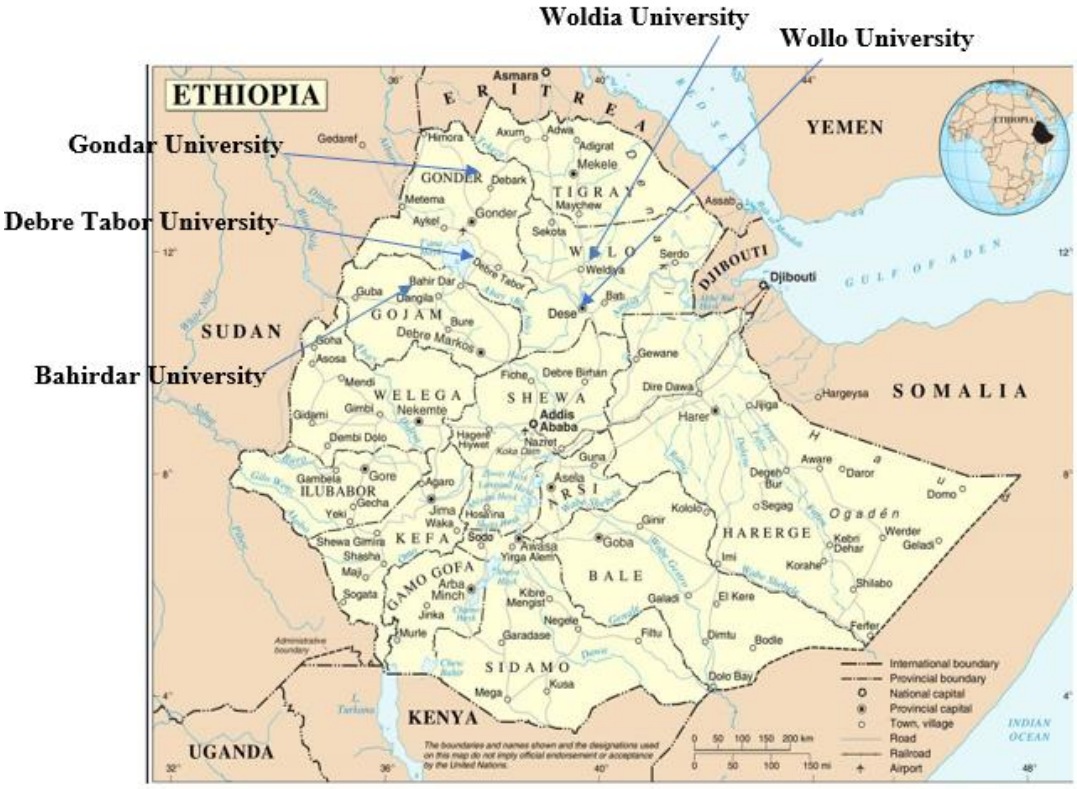
This study aims to explore the mediating role of Work Task Motivation (WTM) and Coping With Stress (CWS) on the relationship between Psychological Capital (PsyCap) and Teacher Well-Being (TWB) and examines the direct effect of PsyCap, WTM (main construct and dimension), and CWS (main construct and dimensions) in TWB. Moreover, the study intends to test the psychometric properties of Psychological Capital Questionnaire (PCQ-12), Work Task Motivation Scale for Teachers (WTMST), Coping With Stress Questionnaire (CWS-Q), and Teacher Well-Being Scale (TWBS) in the Ethiopian Amharic language. The participants are universities located in the Amhara Regional State. In general, a cross-sectional design with quantitative and associational approaches is employed to achieve the objectives. Toward this end, the study conducts several advanced analyses. This section provides the details of the methodological analysis, which includes the study settings/areas, samples and sampling techniques, instruments, procedures of data collection, statistical data analysis, and a summary of the methodology. Finally, the Methods section can be grouped into two main themes, namely, psychometric properties of the instrument (Studies 1 and 3) and mediating roles of CWS and WTM in the relationship between PsyCap and TWB (Studies 2, 3, and 4).

4.2 Study settings

The samples were selected from Public universities in the Amhara Regional State of Ethiopia (see Figure 7). Fifty universities are currently located in Ethiopia, eight of which are in the Amhara Regional State. The state was purposively selected using the following criteria: (a) fora from universities in the Amhara Regional State facilitated and encouraged researchers to access data and access transportation, and (b) the researchers worked around the area for the previous 13 years. Moreover, the study area is the place of work of the prospective researcher; as such, obtaining accurate and efficient data will be convenient for the researcher. Figure 7 demonstrates Ethiopia's selected regions from the sample universities.

Figure 7.

Map of Ethiopia and Universities in the Sample



Adapted from https://en.wikipedia.org/Map of Ethiopia

4.3 Sample and sampling

The study applied a stratified random sampling method to select the universities. Ethiopia is home to 50. Thus, the Ministry of Education grouped universities as centres of excellence based on the establishment age, research and community service contribution, international competition and collaboration, efficiency, infrastructure, and research publication (Ministry of Education, 2018). Universities in the study area were classified as Research (Bahirdar and Gondar), Applied (Wollo, Debre Berhan, and Debre Markos), and General (Debre Tabor, Mekidela amba Woldia, and Injibara) universities. Out of them, one from each classification was considered from studies 1 to 4. All the universities are located in the Amhara Regional State of Ethiopia. Therefore, the study employed proportionate stratified sampling by taking a proportional representative number of samples from each cluster university. Moreover, the

samples obtained from these universities were representative of the country because the Federal Ministry of Education assigned university teachers from different regions.

Following scientific procedures and to substantially validate the instruments, the study collected data from large samples using three tools, namely, PCQ-12, TWBS, and WTMST. In the large data sample, study 1, as a part of validation and measurement equivalence, the questionnaires were collected from three universities, namely Gonder University (research university), Wollo (applied university and Woldia (general university). Instructors who agreed to participate completed paper-and-pencil questionnaires. In studies 2, 3 and 4, the sample university teachers from the research cluster (Bahirdar University), the applied cluster (Wollo University), and the general university (Debre-Tabor University) were drawn. The detail of the sample and sampling techniques are presented below.

In the study of this dissertation, 1,117 participants completed the PCQ-12, WTMST, and TWBS. Also, the respondents completed related measures (the satisfaction with life scale and patient health questionnaire of depression and anxiety) in a cross-sectional survey from three prominent clustered public universities. Forty-seven questionnaires were excluded from incomplete data before analysis; thus, its response rate was 95.3%. The completed data of the sample comprised 1,117 (835, 75 % men and 282, 25% women) Ethiopian university teachers with a mean age of Mage = 31.1 years, SD = 6.1 years) participated in study one to test the psychometric properties of the TWBS, PCQ-12, and WTMST. Several multi-modal analyses were carried out in this study to make the studies more accurate and reliable. Reliability, measurement invariance, CFA (single and multi-factor analysis), validity (divergent, convergent, discriminant), and structural equation modelling (mediation, path analysis) were employed (Davidov et al., 2018; Hair et al., 2019; Kline, 2016).

Four hundred thirty-one (38.6%) of the participants were from the Gondar University (Research University), followed by 353 (31.6%) from the University of Woldia (General University), and 333 (29.8%) from Wollo University of (Applied University), which are found in the Amhara Regional State of Ethiopia. Table 2 below illustrates the general socio-demographic information of all participants in study one.

Table 2

Socio-demographic characteristics of the participants of study 1 (N=1,117)

Variables	Categories	Study 1 samples	
		N	Per cent
Gender	Male	835	75%
	Female	282	25%
Age	25–35 Years	695	62.2
	36–45 Years	365	32.7
	46 Years or above	57	5.1
University Type	Research University	431	38.6
	Applied University	333	29.8
	General University	353	31.6
Experience in teaching	Below 5 Years	411	36.8
	6–10 Years	293	26.2
	11 Years or above	413	37.0

Adapted from Zewude et al. (2022b. p.2245)

In the second study, 614 sample instructors completed the questionnaires. However, eight questionnaires were excluded due to incomplete data before analysis, and the response rate was 97%. Therefore, 447 (75%) men and 149 (25%) women with a *Mage* of 32.81 and *SD* of 6.42 from public university teachers participated. Regarding their educational qualification, two hundred eleven participants were bachelors (35.4%), three hundred twenty-five were masters (54.5%), and sixty were PhD and above (10.1 %) university instructors. This study, involving structural equation modelling and confirmatory factorial analysis, was based on the proposed general guideline about absolute sample size: (1) small ($n < 100$); (2) medium, n = approximately 150; and (3) large ($n > 200$) (Strang, 2015). Thus, to attain statistically stable estimates and fewer sampling errors, it is often recommended that researchers have 200 cases or more for their study sample (Strang, 2015).

In the third study of this dissertation, a total of 836 instructors from three clustered universities in Ethiopia (Research Universities, Applied Universities, and General Universities) (male 74, 8% and female 25, 2%) participated in the study. The mean age of

teachers was 34.00, and the standard deviation was 6.55. The sampling technique was stratified because Ethiopia's ministry of education grouped universities into three clusters. Therefore, age and experience, university type, monthly income and educational qualification categories are based on the Ministry of Education and the Ministry of Labor and Social Affairs of the Federal Democratic Republic of Ethiopia (Zewude & Hercz, 2021a, 2022b; 2022c).

Table 3

General demographic characteristics of the respondents of study 3 (N=836)

	Variables	Gender			
		Female		Male	
		Freq.	%	Freq.	%
Age	25–35	131	15.7	379	45.3
	36–45	59	7.1	218	26.1
	46 and above	16	1.9	33	3.9
	Total	206	24.6	630	75.4
University	Research university	95	11.4	214	25.6
	Applied university	40	4.8	210	25.1
	General university	71	8.5	206	24.6
	Total	206	24.6	630	75.4
Educational qualifications	Bachelor	93	11.1	178	21.3
	Master	86	10.3	380	45.5
	PhD and above	27	3.2	72	8.6
	Total	206	24.6	630	75.4
Teaching experience	Less than five years	89	10.6	173	20.7
	6–10 years	45	5.4	189	22.6
	11 years and above	72	8.6	268	32.1
	Total	206	24.6	630	75.4
Monthly income	4520 ETB (119 $)	93	11.1	178	21.3
	11000 ETB (290 $)	84	10.0	372	44.5
	17,200 ETB (453 $)	29	3.5	80	9.6
	Total	206	24.6	630	75.4

Note: ETB= Ethiopian Birr or Currency, Adapted from Zewude & Hercz (2021a, p.1232)

In study four, the sample of university teachers belonged to Bahirdar University (research university), Wollo University (applied), and Debre-Tabor University (general university). Finally, the study recruited 985 university teachers from the northwestern parts of Ethiopia, where 17 (1.72%) were excluded from analyses due to missing responses. The sample included 729 males (75.3%) and 239 females (24.7%). Specifically, 361 (37.3%), 299 (30.9%), and 308 (31.8%) teachers belong to Bahirdar University, Wollo University, and Debretabour University, respectively. 651 (67.3%), 258 (267%), and 59 (6.1%) teachers were aged between 25 and 35 years, 36 and 45 years, and older than 46 years. Participants from the selected universities in the four consecutive studies are shown in Table 4.

Table 4

Summary of Samples and instruments used in the studies

Studies	Samples	Instruments
Study one	N = 1117	Adapted: • PCQ-12 (Luthans et al., 2007) – required a permission letter for both use of the instrument usage and translation • The TWBS (Collie et al., 2015) – get permission via email • WTMST (Fernet et al., 2008) – no need for permission
Study two	N = 596	• PCQ-12 • TWBS • WTMST
Study three	N = 836	• Adapted CWS-Q (Rabenu et al., 2016) – no need for permission • PsyCap, TWBS, WTMST (Zewude & Hercz, 2021a)
Study four	N = 968	• CWSQ , PsyCap, TWBS, WTMST (Zewude & Hercz, 2021)

4.4 Instruments

The main purpose of this dissertation study is to examine the mediation role of CWS and WTM in the relationship between PsyCap and TWB in Ethiopian higher educational settings. *First,* the initial and crucial stage is to test the instrument's psychometric properties for assessing teachers' well-being, psychological capital, work task motivation, and coping

with stress measures before testing the mediation models. Therefore, the four instruments were adapted for the study and translated into Amharic (*see Appendix 1 to 8,* the original and the translated version).

Second, the mediation role of WTM (total and dimensions) in the relationship between PsyCap and TWB (total and dimensions) was tested in study 2.

Third, the scientific literature showed that CWS (Rabenu et al., 2016) was linked to motivation, teacher well-being and positive PsyCap and was included in Study 3 as an essential component (Nafees & Jahan, 2017; Ryan & Deci, 2017; Zewude & Hercz, 2021). The reason behind incorporating the issue of coping with stress was due to the complex nature of the teaching profession and the relevance of coping strategies to enhance TWB and increase teachers' motivation (Rabenu et al., 2016; Rabenu & Yaniv, 2017; Zewude & Hercz, 2021). As a result, Study 3 included the total and dimensions of CWS as a mediator variable in the relationship between PsyCap and TWB. Besides, construct reliability, validities, and measurement invariance of the CWS-Q were tested based on Rabenu et al.'s (2016) recommendation.

Study 4 covered the mediation role of CWS and WTMn in mediating the relationship between PsyCap and TWB in Ethiopian higher education settings. The questionnaires used in each study were clearly described in each section. In addition, the four instrument descriptions were clearly explained in each study section, and the data were collected using paper and pencil tests.

4.4.1 Measures of the Study One

The target measure for validation (see Appendix 6) was the PCQ-12 (Luthans et al., 2007), the WTMST (Fernet et al., 2008) and the TWBS (Collie et al., 2015). In addition, the researchers utilised related measures for the convergent and divergent validity assessment: the satisfaction with life scale (SWLS) of Diener et al. (1985) and the patient health questionnaire of anxiety and depression (PHQ-4) of Kroenke et al. (2009).

Target measure

The PCQ-12

The concept of PsyCap, derived from positive psychology, is a widely used tool and relatively novel construct used to measure the positive psychological states of teachers. The PsyCap is a multidimensional 12-item scale scored on a six-point Likert scale, ranging from 1 (strongly disagree) to 6 (strongly agree). It contains hope, efficacy, resilience, and optimism

sub-dimensions, shortened to HERO (Scheier & Carver, 1985; Wagnild & Young, 1993). For this study, we used the short version of PCQ-12 (see Appendix 1) with four items for hope, three for self-efficacy, three for resilience, and two for optimism (Luthans et al., 2007; Luthans, Youssef, & Avolio, 2007; Çetin & Bas, 2012; Djourova et al., 2018). Luthans et al. (2007) found the scale to have high factorial and discriminant validity. Furthermore, the content, face, and discriminant validity of the PsyCap instrument fit the workplace and educational settings (Luthans & Youssef, 2004; Luthans, Avolio, Avey, & Norman, 2007; Luthans, 2012; Selvaraj & Bhat, 2018). PCQ-12 measure was studied abroad across the globe, and no single study was found in the Ethiopian cultural context. The PCQ-12 was used, drawn from the www.mindgarden.com permission process (Luthans, 2007), which provided a permission letter to use and translate the PsyCap instrument for this study (see Appendices 9 and 10).

WTMST

Teachers' WTM levels were measured using the Work Task Motivation Scale for Teachers (WTMST), which was developed by Fernet et al. (2008) was used in this study (see Appendix 2) and measured the question "why are you teaching?" The WTMST is based on Ryan and Deci's (2000) SDT. The scale consists of five subscales, each with three items, intrinsic, identified, external, introjected regulation, and amotivation (Fernet et al. 2008). The WTMST construct included 15 self-reported items on a 7-point scale, from 1 = "does not correspond at all" to 7 = "corresponds completely. It is a standardised, validated instrument for measuring teachers' motivation in the teaching context in study one. The reliability of the five components of WTM was evaluated, and Cronbach's alpha values in the previous study ranged from r = .77 to .92 for all constructs. Finally, WTMST results provide excellent support for its psychometric properties(Fernet et al., 2008), and the scale was published by Fernet et al. (2008) in *the Journal of Career Assessment*.

TWBS

The original version of the TWBS consisting of 16 items can be found in Collie et al. (2015), published in the *Journal of Psycho-educational Assessment*. It is used to assess aspects of teaching work that influence teachers' lives. It is a seven-point Likert scale, assessed with a 16-item adapted scale comprising workload well-being, organisational well-being, and student interaction well-being. This study also used the Amharic version of TWBS (Zewude & Hercz, 2022d). In a previous study, Collie et al. (2015) performed various analyses to ensure the

psychometric properties of the TWBS in the Canadian cultural context. Besides that, Collie et al. (2015) showed that the teacher well-being construct has excellent internal and external validity and reliability (Collie, 2014; Collie et al., 2015). In addition, confirmatory factor analysis (CFA) of external factors and TWB have adequate external validity Collie et al. (2015).

Collie et al. (2015) also suggested the need for a more comprehensive study of teachers' well-being incorporating variables across different cultures. Hence, we tested the psychometric properties of the Amharic TWBS measure, which had a well-established psychometric property in the Ethiopian context (see the translation of the instrument in Appendix 3).

Convergent and divergent validity measures

Satisfaction with life

The Amharic version of SWLS is a five-item global life satisfaction scale (Zewude & Hercz, 2022b, 2022c). Each item is rated between 1 = strongly disagree and 7 = strongly agree. The SWLS is a reliable instrument in Africa (Vosloo et al., 2009) and Ethiopia (Zewude & Hercz, 2022d). In the present study, scores from the SWLS achieved a Cronbach's alpha reliability of 0.84.

Depression and anxiety

The 'Patient Health Questionnaire-4' (PHQ-4) comprises four items, of which two items measure anxiety (e.g., of the items "feeling nervous, anxious, or on edge," $\alpha = 0.78$), whereas the other two items measure depression (e.g., "feeling down, depressed, or hopeless," $\alpha = 0.75$) (Kroenke et al., 2009; Löwe et al., 2010). All items are rated on scales that range between 0 = Not at all and 3 = Nearly every day. In this study, overall Cronbach's alpha for scores from the PHQ-4 was 0.88 (anxiety: $\alpha = 0.84$; depression: $\alpha = 0.80$). This study used the Amharic version of PHQ-4 (Zewude & Hercz, 2022d).

Socio-demographic information

The university teachers self-reported their gender, age, university, and educational qualification. Regarding this, gender and university type were considered in measurement invariance for many reasons. Gender equality in higher institutions is an agenda of the ministry of education due to the lack of a proportional number of female university staff (Egne, 2015;

Ministry of Education, 2018). Universities are also clustered into three main groups. Two universities are currently called exceptional science universities as a fourth group. The main criteria used to make such classification are their age-long years' contributions to the problem-focused research to the community, international collaboration and competition, research and publication, students' competency, and gender equality (Ministry of Education, 2018). As a result, this study considered gender and university types for testing measurement equivalence.

4.4.2 Measures of Study Two (see Appendix 5 and 6)

The PCQ-12

The psychometric properties of the Amharic version of the PCQ-12 scale were tested in study one. However, in this study the construct validity was tested using the confirmatory factor analysis (CFA) model in an Amharic version, the language spoken by our respondents, and the path model showed a good model fit with the sample data: χ^2 (48) = 185.77, $p < 0.001$, TLI = 0.951, CFI = 0.964, SRMR = 0.047, RMSEA = 0.69 (0.059-0.080) in Amharic. The data was acceptable according to the recommended criteria: GFI, CFI, TLI, and RFI $\geq$ 0.90 and SRMR and RMSEA < 0.10 (see Table 12). The construct reliability, internal consistency, and the composite reliability (CR) of the PsyCap instrument for each of the HERO dimensions were examined, with the following results: hope (α = 0.87; CR = 0.87), efficacy (α = 0.88; CR = 0.86), resilience (α = 0.82; CR = 0.89), and optimism (α = 0.78; CR = 0.87). The Cronbach's alpha and CR scale values for PsyCap were tested (α = 0.8; CR = 0.87) (see Table 11).

The TWBS

The Amharic version of TWBS construct validity and reliability were tested in study two to get accurate information (Zewude & Hercz, 2022d). The CFA examined the model fit of the TWBS scale using a robust maximum likelihood estimation method. Thus, the construct validity of the scale of this study confirmed the goodness of fit of the model: χ^2 (101) = 219.68, $p < 0.001$, TLI = 0.970, CFI = 0.974, SRMR = 0.045, RMSEA = 0.044 (0.036–0.052) (see Table 12). Moreover, the TWBS's reliability for each dimension had a Cronbach's alpha (α) and CR of workload well-being (α = 0.89; CR = 0.81), organizational well-being (α = 0.87; CR = 0.86), and student interaction well-being (α = 0.92; CR = 0.88). Finally, a reliability coefficient was assessed for the total TWB score measured by the sum of all items (α = 0.87; CR = 0.85), which indicated acceptable internal consistency (see Table 11).

The WTMST

The Amharic version of WTMST is a standardised, validated instrument for measuring teachers' work task motivation in the teaching context(Zewude et al., 2022b). The CFA model produced a good model fit to this study data: χ^2 (80) = 375.47, TLI = 0.947, CFI = 0.960, SRMR = 0.068, and RMSEA = 0.079 (0.071–0.087) (see Table 12). As shown in Table 12, the CR for all WTM constructs ranged from 0.88 to 0.94, and Cronbach's alpha ranged from 0.87 to 0.93, indicating that the reliability of the constructs was good and acceptable. The Cronbach's alpha and CR values for WTM of teachers were intrinsic motivation (α = 0.93; CR = 0.94), identified regulation (α = 0.87; CR = 0.88), external regulation (α = 0.92; CR = 0.92), introjected regulation (α = 0.92; CR = 0.93), and amotivation (α = 0.90; CR = 0.91) (see Table 11).

Socio-demographic characteristics: This study consisted of demographic factors such as gender, age, university and educational qualification as general information.

4.4.3 Measures of Study Three

This study used standard, psychometrically sound, and well-established scales across various cultural contexts in psychological and educational research areas and substantially validated our studies one and three.

The PCQ-12

We used the Amharic version of the PCQ-12 measure to assess university teachers' positive psychological resources. Using the maximum likelihood estimation method, the CFA results of this study as shown in Table 16 confirmed the best model fit: $\chi2(48) = 264.8$, $\chi2/df = 4.91$, GFI=0.952, AGFI=0.943, RFI=0.929, TLI=0.941, CFI=0.957, SRMR=0.047, RMSEA=0.074 (0.065, 0.082. The PsyCap construct had excellent Cronbachs alpha(α), and composite reliability (CR) for all constructs was (α = 0.87; CR = 0.84), and for each of the HERO dimensions were as follows: hope (α = 0.88; CR = 0.88); efficacy (α = 0.84; CR = 0.85); resilience (α= 0.82; CR = 0.82); and optimism (α = 0.79; CR = 0.79), respectively (see table 15).

The TWBS

In study three, we also performed the construct validity and reliability to ensure the internal consistencies and what to measure in the data. Consequently, this study also confirmed the CFA of the TWBS scale measurement model has a good fit: $\chi 2$ (101) =296.7, $p < 0.001$, $\chi 2/df$=2.9, GFI=0.958, AGFI=0.943, RFI=0.945, TLI=0.963, CFI=0.969, SRMR=0.039, RMSEA=0.048 (0.042, 0.082) (see Table 16). The Cronbach's alpha(α) and composite reliability (CR) for the dimensions of TWB in this study were: workload well-being (α = 0.87; CR = 0.79); organisational well-being (α = 0.85; CR = 0.87); and student interaction well-being (α = 0.88; CR = 0.88). The total scale reliability was (α=0.83; CR = 0.85) (see Table 15). The TWBS's internal consistency for each dimension had a Cronbach's alpha of workload well-being (α = 0.86; CR = 0.87), Organizational well-being (α = 0.84; CR = 0.85), and Student Interaction well-being (α = 0.75; CR = 0.77). Finally, the total TWB score measured by the sum of all items had a reliability coefficient of (α = 0.84; CR = 0.83), which indicated acceptable internal consistency. Overall, the present study result shows that internal consistency values met the criterion of 0.70 proposed (Cronbach, 1951; Hair et al., 2019).

The CWS-Q

The CWS-Q developed by Rabenu et al. (2016) was used in this study to assess teachers' coping strategies (see Appendix 4). The questionnaire is composed of three dimensions, including change (three items), acceptance (three items), and withdrawal (four items). We rated each item on a six-point Likert scale ranging from 1 (very infrequently) to 6 (very frequently), with acceptable reliability (α=0.65). Sample items are, for change, "During stressful situations at work, I work to reduce stress"; for accept, "During stressful situations at work, I re-evaluate the situation as positive"; and for withdrawal, "During stressful situations at work I feel comfortable looking for another job". The construct was highly reliable and valid (Rabenu et al., 2016). The reliability and validity issues are explained in Table 15. However, one item from withdrawal was discarded due to poor factorial loadings in the validation study.

4.4.4 Measures of Study Four (see Appendix 7 and 8)

The TWBS

The Amharic version of the TWBS confirmed that confirmatory factor analysis (CFA) measurement model has a good fit: $\chi 2(101) = 342.16$, $p < 0.001$, $\chi 2/df = 3.39$, TLI = 0.965, comparative fit index (CFI) = 0.970, SRMR = 0.040, root mean square error of approximation (RMSEA) = 0.050 (0.044–0.056; Table 20). Previous studies confirmed the instrument's psychometric properties, similar to the current study's result.

The PCQ-12

The study used the adapted and translated short version of the PCQ-12 instrument. In this study, we conducted construct reliability, whereas Study 1 provides the tool's psychometric validity. In this study, we confirmed the best model fit according to CFA results (Table 20): $\chi^2(48) = 272.87$, $\chi^2/df = 5.68$, TLI = 0.947, CFI = 0.962, SRMR = 0.044, RMSEA = 0.070 (0.062–0.078).

The CWS-Q

The Amharic version of the CWS-Q is a nine-item scale used to assess the coping strategies of teachers using three subscales. Our previous study discarded one item due to poor factor loadings using the Modification of Indices method (MI). The questionnaire is composed of three dimensions, namely, change (three items), acceptance (three items), and withdrawal (four items). Items are rated using a six-point Likert-type scale ranging from 1 = *very infrequently* to 6 = *very frequently*. The study used the adapted and translated instruments, which were psychometrically proven by Study 3. However, we verified the reliability (Table 19) and validity to determine whether or not the instruments fit the existing data (Table 20) to ensure confidence in this study's existing data.

The WTMST-15

The WTMST-15 was developed by Fernet et al. (2008) for measuring levels of WTM. It is based on SDT (Ryan & Deci, 2000). The scale consists of five subscales, intrinsic, identified, external, introjected regulation, and motivation, with three items per subscale (Fernet et al., 2008). The current study confirmed construct reliability (Table 20) and validity

(Table 21), which is in line with those of previous studies (the last three consecutive studies). The current study used the Amharic-translated version (see Appendix 8).

Socio-demographic characteristics

This study used demographic factors such as gender, age, university type and level of education. Table 5 summarises the instruments used in the four empirical studies.

Table 5

Instruments used in the four empirical studies

Empirical Studies	Measures	Number of Items	
		Original	Adapted
Study 1 (N= 1117)	Adapted: PsyCapQ-12 (Luthans et al., 2015)	12	12
	TWBS (Collie et al., 2015)	16	16
	WTMST(Fernet et al., 2008)	15	15
Study 2 **(**N= 596)	Adapted: PsyCapQ-12 (Luthans et al., 2015)	12	12
	TWBS (Collie et al., 2015)	16	16
	WTMST(Fernet et al., 2008)	15	15
Study 3 **(**N=836)	Adapted: CWSQ (Rabenu et al., 2016)	10	9
	PsyCapQ-12 (Luthans et al., 2015)	12	12
	TWBS (Collie et al., 2015)	16	16
	WTMST(Fernet et al., 2008)	15	15
Study 4 (N= 968)	CWSQ (Zewude & Hercz, 2021a)	9	9
	PsyCapQ-12 (Zewude & Hercz, 2021a)	12	12
	TWBS (Zewude & Hercz, 2021a)	16	16
	WTMST (Fernet et al., 2008)	15	15

4.5. Procedures of the Studies

The participants responded to the questionnaires using the paper-and-pencil method. The data collection procedure was conducted in compliance with the University of Szeged, Internal Review Board, Doctoral School of Education and the ethical principles and standards of the American Psychological Association. Participation was voluntary. The study followed all ethical procedures and followed *the 1964 Helsinki declaration: 21 CFR 50 (Protection of Human Subjects) and 21 CFR 56 (Institutional Review Boards)*. As a result, the studies obtained research clearance from the Internal Review Board of the University of Szeged, Doctoral School of Education ethical approval letter (certificate number: Ref. 26/2019). (Appendix 11). In addition, Studies 1 to 4 were approved by the Amhara Regional State Universities Forum, and the certificate number for the studies was Ref. No. ARSUF.1,1712/2022 (Appendix 12). Finally, the researchers assured the participants of their participation and data anonymity.

Before the data collection procedures, the study received two supporting letters from the Doctoral School of Education concerning the data collection processes. The letter was presented to the department heads and deans of the selected universities to obtain their permission and cooperation in conducting the study. The Amhara Regional State Universities Forum facilitated and encouraged all ongoing research processes. This dissertation allows presenting briefing about the research objectives during an academic staff meeting held on June 29, 2019, before the summer program starts. University Secretariats of two universities also provided briefings through a forum regarding the objective of Studies 1 to 4 to the respective academic deans to obtain data. In addition, on December 20, 2019, and June 2020, I also presented the supporting letter from the Doctoral School of Education at the University of Szeged to the deans of the universities, and I made an appointment for data collection in collaboration with the departments of the two other universities. Discussions were held about the research objectives and the process for obtaining accurate information from the university staff. The next step is the description of the data analysis process.

In addition, we examined the psychometric properties of each construct and employed CFA to ensure the study's validity in each data; we then performed Pearson’s correlation to verify the relationships among the constructs (they have no strong correlation; Table 19. The absence of multicollinearity was confirmed by examining the correlation matrices among the constructs, which should be less than 0.90, and by verifying the normality assumption. Outliers

of the constructs were also examined following the procedures of Hair et al. (2019), Kline (2016), and Tabachnick and Fidell (2018). Values of ≤ 2 or ≤ 4 for skewness or kurtosis, respectively, indicate the normal data distribution (Kim, 2013; Mishra et al., 2019). The skewness values are between 0.077 and 0.170, and kurtosis scores range from −0.079 to 0.50, suggesting the relatively normal distribution of all constructs (Table 19).

4.6 . Statistical data analysis

The study used the Statistical Package for the Social Sciences (International Business Machines Corporation) version 26, Analysis of Moment Structures (AMOS) version 26, and Microsoft Excel 2019.

4.6.1 Exploratory Factorial Data

Before starting the primary data analysis process, we addressed multicollinearity by checking the correlation among the values of the variables, which should be greater than 0.90, and the normality of distributions was examined following Kline's (2016) and Tabachnick and Fidell's (2018) recommendation. In the second step, we conducted the normality of distributions. The values of skewness and kurtosis lie between [-2] and [+2]; this is acceptable to prove the normal distribution of the data (Ryu, 2011). After the necessary criteria were met, the data were analysed.

4.6.2 Reliability

For all four empirical studies, both Cronbach's alpha coefficient(α) and composite reliability (CR) were used to assess each construct's internal consistency and individual response. The reliability coefficient is ranged from 0 to 1.00 (Cronbach & Shavelson, 2004). Evidence indicated that the acceptable reliability value $\alpha \geq 0.9$ = Excellent; the value range from α 0.9 to 0.8 = Good; α 0.8 to 0.7 = acceptable; α 0.7 to 0.6 = Questionable; α 0.6 to 0.5, Poor; and $0.5 > \alpha$ = Unacceptable (Cronbach, 1951; George & Mallery, 2020; Hair et al., 2019.). Thus, the current study assessed reliability scores using Cronbach's alpha and composite reliability coefficients (CR).

Internal consistency: This type of reliability estimates the average correlation among items within a test or the construct (Nunnally & Bernstein, 1994).

Composite reliability (CR): Composite reliability (called construct reliability) measures internal consistency in scale items that may lead to higher estimates of true reliability. It is a preferred measure because of Cronbach's alpha pitfall of underestimating the scale's reliability (George & Mallery, 2020).

4.6.3 Convergent, Discriminant and Divergent Validity

In the first study, we employed different validates to ensure the instrument represents what it is supposed to measure. What is the concept of validity? The idea of validity is the degree to which a measure precisely means what it is supposed to measure (Hair et al., 2019). Three aspects of validity are critical issues for assessing the measurement and structural models (Hair et al., 2019). Hair et al. (2014) and Nunnally and Bernstein (1994) distinguished three types of validity. The first one is construct validity, which refers to items that reflect the latest theoretical construct designed to measure. For construct validity, Hair et al. (2019) suggested that individual standardized factor loadings (regression weights) should be within the minimum range of 0.5, and the best should be 0.7. Second, *convergent validity* is the relationship among the constructs. In contrast, *discriminant validity* is the extent to which a construct is genuinely distinct from other constructs (Hair et al., 2019).

First, convergent and discriminant validity were assessed using the maximum shared variance (MSV) and the average variance extracted (AVE). The AVE values that exceed a threshold limit higher than 0.5 (AVE > 0.05) demonstrate good convergent validity. Moreover, factors whose MSV is lower than AVE are characterized by adequate discriminant validity (Hair et al., 2019). However, the researchers also expected the TWBS to be negatively correlated with the opposite variables (divergent validity) and positively associated with other similar positive variables (convergent validity) (George & Mallery, 2020; Hair et al., 2019). As a result, Pearson's correlation coefficient was used to examine teacher well-being with the other relevant constructs (life satisfaction) to explore the convergent validity and depression and anxiety to explore divergent validity. Schober et al. (2018) suggested the standard cut-points of correlational coefficients, where negligible ranged from 0.00─0.10, weak correlation (0.10─0.39), moderate correlation (0.40─0.69), strong correlation (0.70─0.89) and very strong correlation (0.90─1.00), respectively.

4.6.4 Confirmatory Factorial Analysis (CFA)

We use CFA to test the construct validity of the TWBS (Collie et al., 2015), WTMST (Fernet et al., 2008), PCQ-12 (Luthans et al., 2007), and CWS-Q (Rabenu et al., 2016). In addition, we compare the single-factor, correlated factor, bifactor, and higher-order factor models. In the first validation study, we use single and multi-group confirmatory factor analyses (SGCFA and MGCFA, respectively). The reason for using four comparative models is that the four types of CFA models serve unique purposes and are recommendable for multi-dimensional models; thus, a comparison is required. For example, the bi-factor model can be beneficial in determining the dimensionality of a scale. In contrast, single-factor models can be used to measure items that are essentially unidimensional and, thus, should not be broken down into subscales. Moreover, a higher-order factor can reduce the number of path model relationships and provide methods for handling collinearity among formative indicators. Lastly, the correlated factor model can provide strong evidence to check the measure's multidimensional nature (Bornovalova et al., 2020; Immekus & Imbrie, 2008; Johnson et al., 2011; Worley et al., 2008).

The study separately tested the CFA models on the subgroups' gender and university type at the initial stage of this study. First, the rationale is that CFA provides evidence of the validity of individual measures based on the model's overall fit and other construct validity (Hair et al., 2019). Second, the study used CFA because the selected variables were previously hypothesized, theory-driven, and empirically confirmed instead of derived from data.

Regarding the model selection and evaluation of the CFA models, the study disregarded the chi-square test (χ^2) due to the oversensitivity of sample size, as suggested by Barrett (2007) and Steiger (2007). Instead, we used the most globally reported goodness-of-fit indices: RMSEA, the Tucker–Lewis index (TLI), CFI, and information criteria such as the Bayesian information criterion (BIC) and Akaike information criterion (AIC). The following cut-off points were used for RMSEA: poor fit = greater than 0.10, mediocre fit = 0.08 to 0.10, good fit = 0.05 to 0.08, close fit = 0.01 to 0.05, and the exact fit = 0.00 (Hu & Bentler, 1999). For groups of 10 to 20, Hu and Bentler suggested the RMSEA cut-off point of ≤ 0.08 for an acceptable fit. For TLI and CFI, the recommended cut-off points are as follows: poor fit > 0.85, mediocre fit = 0.85–0.90, acceptable fit = 0.90–0.95, close fit = 0.95–0.99, and exact fit = 1.00. In addition to goodness-of-fit indices, information criteria, such as AIC and BIC, are the most appropriate for model comparison and are useful for selecting a good model (Byrne & van de Vijver, 2010;

Hooper et al., 2008). Small AIC and BIC values indicate that the model is a good fit, whereas statistics require a sample size of 200 and more to ensure that the use of these instruments is reliable (Hooper et al., 2008). Therefore, an adequate model fit in the existing data, the highest model fit, and lower AIC and BIC values are prerequisites for testing MI.

4.6.5 Structural equation modelling (SEM)

SEM is a set of multivariate statistical estimations and test causality analysis techniques (Wei, 2014). It can serve as a source (exogenous or analogous to an independent variable) and a result (endogenous or analogous to a dependent variable) in a chain of causal hypotheses (Lei & Wu, 2007). This study examined how construct validity explained the study variables (Hamid et al., 2011; Hair et al., 2014). SEM is a powerful analytical tool for validating the plausibility of a theoretically assumed structure of a set of study variables, including exogenous and endogenous variables (Wan, 2002). It has three categories (a) **measurement model**: which indicates the measurement of latent variables, (b) **structural model**: efers to the relationship between latent variables; and (c) **path analysis:** which enables a simultaneous examination of direct effects (which occur when an independent variable influences a dependent variable) and indirect effects (which occur when an independent variable influences a dependent variable through a mediating variable) with multiple independent and dependent variables(Byrne & Vijver, 2010; Devlieger et al., 2019; Hair et al., 2014; Stage et al., 2004). CFA tests a measurement theory by providing evidence of the validity of individual measures based on the model's overall fit and other evidence of construct validity (Hair et al., 2019).

The cut-off values of the goodness-of-fit indices of SEM are as follows: χ^2 = non-significant; TLI and CFI ≥.90 (Kline, 2016; Tabachnick & Fidell, 2018), and SRMR and RMSEA ≤.10, which were considered as the criteria of this research (L. Hu & Bentler, 1999). However, the χ^2 test may be susceptible and introduce the probability of being significant when using a large data sample; thus, drawing an absolute cut-off value for RMSEA is not advisable (Hair et al., 2018). Therefore, before conducting SEM, the study tested the CFA of the scales recommended by Hair et al. In this regard, the measurement model was examined after verifying the results. We then tested the structural or proposed mediation model using the bootstrap method. Moreover, the study employed the three dimensions of analytical mediation methods: predictors of the outcome, mediators, and mediators of an outcome (Hair et al., 2019). CFA and the path analysis method were used because the selected variables were previously hypothesized and empirically confirmed instead of derived from data (Lei & Wu, 2007).

The structural model draws upon theory, the previous literature, and research objectives to differentiate which predictor variables explain each criterion variable. In contrast, the measurement model was used to measure all variables that emerged to represent the theory (Hair et al., 2019).

Finally, the hypothesized mediation models in Studies 2–4 were examined using the maximum likelihood method, which is a standardized estimate-based SEM. The main reasons for using SEM are as follows: (1) the study tests the relationships among latent constructs using various methods (Lei & Wu, 2007); (2) confirming the factor structure of a psychological instrument is recommended (Tomarken & Waller, 2005); (3) the proposed model that examines direct and indirect (mediated) effects, structural factor models (CFA), and other complex relationships among variables (Lei & Wu, 2007) is a complex one; (4) this study uses the bootstrap method for the proposed mediation model for inferences about indirect effects; and, (5) the model is beneficial to the discussion of the theoretical and practical implications of the study.

4.6.6 Measurement invariance

For the measurement invariance (MI), we tested the psychometric equivalence of the variables across various groups using CFA (Putnick & Bornstein, 2016). In this study, the researcher(s) followed well-established scientific procedures using single and multi-group CFA using the four MI stages(Millsap, 2011; Putnick & Bornstein, 2016; Vandenberg & Lance, 2000; Zewude & Hercz, 2022b). *In stage 1*, a configural invariance was conducted to establish a baseline model across groups without restriction, where the tested construct was the same across all groups (Vandenberg & Lance, 2000). *In stage 2*, the metric measurement invariance (MMI) was examined; the same constrained factorial loadings to the different groups responded similarly to indicators. *In stage 3,* scalar measurement invariance or strong invariance (SMI) was performed. In this test, the indicator intercepts and the factor loadings were constrained in the same way across groups. Finally, the residual measurement invariance or the strict invariance (RMI) in the fourth stage was tested. RMI refers to the similarity of item residuals of metric and scalar invariant items (Putnick and Bornstein, 2016).

The present study's MI four-sequential-staged analysis used single and multi-group CFA following Millsap (2011) and Putnick and Bornstein (2016) and arrived at the following

recommendation criteria: ΔTLI, 0 = perfect and ≤ 0.01 = acceptable, ΔRMSEA, 0.015 for metric, scalar, and residual invariance (Chen, 2007; Putnick & Bornstein, 2016).

The researchers tested the CFA models for the subgroups of gender and university type separately in the initial stage of this study. Good model fit is a prerequisite to testing MI (Byrne & van de Vijver, 2010). In summary, in this study, we (1) examined the reliability of the study constructs using both Cronbach alpha and composite reliability and (2) tested the PsyCap, motivation and teacher well-being models of convergent, discriminant, and divergent validity in the study, (3) made the model comparisons of constructs using the single and multi-modal approach of CFA to establish psychometric properties of the measurement scales in the Ethiopian Amharic version, and (4) established measurement invariance across *gender*, and *university type* using the best fit model: bi-factor model for WTMST and TWBS whereas correlated factor model for PCQ-12 and CWS-Q.

4.6.7. One-Way ANOVA

Descriptive statistics (mean and standard deviation) were used to describe the major demographic characteristics of PsyCap, TWB, WTM, and CWS. In the meantime, one-way ANOVA (F-test) was performed to determine the significance of the role of age, level of education, university type, and years of teaching experience. The result of one-way ANOVA was significant (e.g., not all means at each level of the factor were equal). Tukey's post hoc test was selected to analyze the results of one-way ANOVA, which means vary among the factors in the model. Tukey's test tends to be more conservative in rejecting null hypotheses in the event of unequal comparison of group sizes. This concern was anticipated regarding the groupings by the independent variables of the level of (i.e., age, educational qualification, university type, and years of teaching experience) on PsyCap, TWB, WTM and CWS.

4.6.8. The issue of common method bas

Common method bias potentially influences studies in social sciences, especially in the paper-and-pencil instrument, in terms of content, response format, general instructions, and the test's objective (Podsakoff et al., 2003).

Therefore, to overcome such problems, the study implemented the following measures: (a) the content or face validity of each item was evaluated by experts in the field before administering the instrument; (b) informed consent was obtained from all participants, and their

identities were coded to maintain anonymity; (c) the predictor and criterion variables were derived from different sources and cultural contexts; and (d) factor variance was computed to determine measurement error (Zewude & Hercz, 2021a). In addition, following Harman's single-factor test guidelines, the common method bias was performed (Podsakoff et al., 2012; Podsakoff et al., 2003;). Hence, there are no significant common method biases in Studies 2–4, because the computed variance was 19.27%, 28.52%, and 17.18 %, respectively, which is below the threshold of 50%.

4.7 Summary of the Methodology

This dissertation chapter gives a blueprint of the methodological approach and a detailed description of each study. Generally, a cross-sectional design with quantitative and associational approaches was employed to achieve the stated objectives. The sample taken in each study was more than adequate and supported by evidence and based on the proposed general guidelines about absolute sample size: (1) small ($n < 100$); (2) medium, n = approximately 150; and (3) large ($n > 200$) (Strang, 2015). As a result, we: (i) examined the reliability of the study constructs, (ii) tested the convergent, discriminant, and divergent validity in the study, and (iii) performed the model comparisons of variables using the CFA approach, (iv) examined measurement invariance, (v) applying Structural Equation Modeling (SEM), (vi) computed Common Method Bias in study 2, 3 and 4 to avoid the measurement error that is compounded by the sociability of respondents who want to provide positive answers (Chang et al., 2010) and (v) established measurement invariance across gender and university type using the best fit model: bi-factor model for TWBS and WTMST and correlated factor model for PCQ-12 and CWS-Q. Finally, this dissertation's next chapter introduces the results and discussion of the four empirical studies.

5. RESULTS OF EMPIRICAL STUDIES

5.0 Introduction

This chapter has two main parts: the validation study and the main study to answer the stated research hypotheses. As the first step in this chapter, we conducted instrument validation using several sophisticated analyses. This study is needed because the Psychological Capital (PsyCap), Work Task Motivation (WTM), Coping With Stress (CWS) and Teacher Well-Being (TWB) measures are taken from North American, European and Asian cultural contexts. Unfortunately, none of such studies appears to have been conducted in Ethiopia. Therefore, we adapted the Psychological Capital Questionnaire (PCQ-12), Work Task Motivation Scale (WTMST), Coping With Stress Questionnaire (CWS-Q) and Teacher Well-Being Scale (TWBS) and psychometrically tested the suitability of the measures in Ethiopia context. In the second step, we conducted the main study about the mediation role of dimension and total of WTM and CWS in the relationship between PsyCap and total and dimensions of TWB in Ethiopia. While conducting the main study, we devoted three cross-sectional studies: (i) first, the mediation role of the total and dimensions of WTM, (ii) second, the total and dimension of CWS, (iii) the mediation role of both WTM and CWS in the link between PsyCap and TWB in Ethiopia context.

5.1. Validating Instruments: Validation and Measurement Invariance of TWBS, WTMST and PCQ-12, and CWS-Q in Ethiopia Context

This research aims to adapt, develop and psychometrically validate the PCQ-12, WTMST, CWS-Q and TWBS measures for assessing university teachers' in the cultural context of Ethiopia.

5.1.0 Introduction

It is crucial to apply several recommended methods and follow the cross-cultural validation procedure to produce a psychometrically suitable instrument. However, cross-cultural validation is threatened by methodological difficulties, including those stemming from the translation of the questionnaire and other instruments' measurements (Hedrih, 2020). Therefore, in this study, cross-cultural validation was done following the proposed guideline of Beaton et al. (2000): (i) initial translation/ forward translation, (ii) synthesis of the translation, (iii) back translation, (iv) expert/translators review and (v) administration and

validation. In addition, the validation of the instruments was done based on the recommendation of Davidov et al. (2018) and Hair et al. (2019). For this reason, the validation findings were done through five processes: (i) evidence of reliability, (ii) Pearson correlation, (iii) confirmation of construct validity through convergent, divergent, and discriminant validity, (iv) confirmatory factor analysis using multi-group model comparison, and (v) measurement invariance. The results are presented in the following chapter.

5.1.1. Reliability

Addressing RH_1:The instruments PCQ-12, WTMST, TWBS (Study 1) and CWS-Q (Study 3) measure used in this study: (a) are expected to be reliable, and (b) convergent, divergent, and discriminant validity confirm together construct validity in the Ethiopian context.

To confirm the above research hypotheses (RH1a), we confirmed the internal consistency, construct reliability and construct validities of the instruments in Ethiopian higher educational settings. The Cronbach's alpha coefficient(α) and the composite reliability (CR) were used for RH1a. The following label is suggested by Hair et al. (2019). A score above .90 reveals excellent, ranging between 0.80 to 0.90, which shows good internal consistency and scores between 0.70 to 0.80 indicate acceptable reliability. We evaluated the reliability of core components of PsyCap, TWB and WTM scales in study 1. As shown in Table 6, The reliability coefficients of the PsyCap questionnaire for each of the HERO dimensions were as follows (a) hope: α = 0.88; CR = 0.88); (b) efficacy (α = 0.83; CR = 0.83); (c) resilience (α= 0.84; CR = 0.84); and d) optimism (α = 0.80; CR = 0.81). In addition, the Reliability of TWBS was a) workload well-being: α = 0.91., CR = 0.88, (b) organizational well-being: α = 0.92, CR = 0.92, c) student interaction well-being: α = 0.91, CR = 0.92. Furthermore, the composite Reliability (CR) for all teacher motivation constructs ranged from 0.80 to 0.90, and Cronbach's alpha ranged from 0.79 to 0.90, indicating that the reliability of the constructs was good and acceptable. The Cronbach's alpha for teachers' work motivation—intrinsic motivation, identified regulation, external regulation, and introjected regulation—were (α = 0.79; CR = 0.80), (α = 0.84; CR = 0.84), (α = 0.83; CR = 0.83), and (α = 0.89; CR = 0.90), respectively. Amotivation, on the other hand, had reliability of (α = 0.80; CR = 0.81). Finally, the internal consistency of CWS dimensions were: (a) acceptance: α =.91, CR = .91, (b) change: α = 0.88; CR = 0.89, (c) withdrawal: α= 0.95; CR = 0.95, the total CWS scale: α = 0.71; CR = 0.92 (see Table 6).

To sum up, this study showed that the four components of PsyCap, the three main teacher well-being factors, the five dimensions of teachers' motivation and the three main core elements of CWS construct are highly reliable in Ethiopia's educational context. In addition, the other variables used for convergent (life satisfaction) and divergent validity (anxiety and depression) demonstrated acceptable reliability.

Table 6

Reliability and Validity Indices of the Study Variables

Teacher Well-being Scale (TWBS)

Models	α	CR	AVE	MSV	Squared correlation		
	(>.70*)		(>.50*)		WWW	OWB	SIWB
WWB	0.92	0.88	0.65	0.23	1		
OWB	0.92	0.92	0.81	0.31	0.23	1	
SIWB	0.91	0.91	0.73	0.31	0.21	0.31	1

Psychological Capital Questionnaire (PCQ-12)

Models	α	CR	AVE	MSV	Squared correlation			
	(>.70*)		(>.50*)		H	E	R	O
H	0.88	0.88	0.65	0.46	1			
E	0.83	0.83	0.62	0.46	0.46	1		
R	0.84	0.84	0.63	0.28	0.12	0.15	1	
O	0.80	0.81	0.68	0.28	0.16	0.16	0.28	1

Work Task Motivation Scale for Teachers (WTMST)

Models	α	CR	AVE	MSV	Squared correlation				
	(>.70*)		(>.50*)		IM	IR	ER	INTR	AM
IM	0.79	0.80	0.57	0.08	1				
IR	0.83	0.84	0.64	0.23	0.06	1			
ER	0.82	0.83	0.62	0.23	0.08	0.23	1		
ITR	0.90	0.90	0.74	0.16	0.08	0.08	0.16	1	
AM	0.80	0.81	0.58	0.10	0.02	0.05	0.10	0.02	1

Coping With Stress Questionnaire (CWS-Q)							
No.	**Latent Factors**	**α/CR (>.70*)**	**AVE (>.50*)**	**MSV**	**Squared Correlation (r)**		
					1	**2**	**3**
1	Accept	0,91/0,91	0,72	0.42	1		
2	Change	0,88/0,89	0,70	0.42	0,42	1	
3	Withdrawal	0,95/0,95	0,75	0.11	0,11	0,08	1

***Note**: *Indicates a global rule of thumb of an acceptable level of validity and reliability based on the recommendation of Hair et al. (2019) and Kline (2016).α = Cronbach's alpha; AM=amotivation, AVE = average variance extracted; CR composite reliability; E=efficacy; ER=external regulation; H=hope; IM=intrinsic motivation; ITR=introjected regulation=identified regulation; MSV = maximum shared variance; O=optimism; OWB=organizational well-being; R=resilience; SIWB=student interaction well-being. WWB=workload well-being*

5.1.2. Convergent, Divergent, and Discriminant Validity

To examine convergent validity, the AVE should be higher than 0.5. Also, to assess discriminant validity, we compare the AVE with squared inter-item correlations within the construct to see whether the AVE is higher than squared correlations and has a lower maximum shared variance (MSV) than the AVE (Hair et al., 2019; Zewude & Hercz, 2022b). The researcher (s) evaluated the validity of PsyCap, teacher well-being and teachers' motivation sub-factors based on their respective scores in AVE and MSV (see Table 7). This study found that all four PsyCap, the three-teacher well-being, and the five motivation core constructs have good convergent validity (AVE > .05), implying that the corresponding items are composed of the core factors with acceptable correlation. The reason is that each item explains the latent constructs in each factor. Three methods were employed to test the discriminant validity of the PsyCap, WTM and TWB subscale.

First, the constructs were tested since their AVE values were higher than their MSV (Table 7). Hence, the result of this study indicated that the sub-constructs of the PsyCap scale, motivation scale, and the teacher well-being scale AVE were greater than MSV and presented their consecutive result as follows. PsyCap dimensions: a) optimism (AVE=0.68 > MSV=0.28), b) hope (AVE=0.65 > MSV=0.46), c) resilience (AVE=0.63 > MSV=0.28), and d) efficacy (AVE=0.62 > MSV=0.46). Regarding the WTMST scale: a) for introjected

regulation (AVE=0.74 > MSV=0.08), b) identified regulation (AVE=0.64 > MSV=0.23), c) external regulation (AVE=0.62 > MSV=0.23), d) amotivation (AVE=0.58 > MSV=0.02), followed by intrinsic motivation (AVE=0.57 > MSV=0.08). Finally, the teacher well-being subscales: a) for organisational well-being (AVE=0.81 > MSV=0.31) followed by student interaction well-being, (AVE=0.73 > MSV=0.31), and workload well-being (AVE=0.65 > MSV=0.23). Finally, the coping with stress subscales: a) for coping through withdrawal (AVE=0.75 > MSV=0.11) followed by for coping through acceptance, (AVE=0.72 > MSV=0.42), and for coping through change (AVE=0.70 > MSV=0.42) respectively.

Second, we compare the AVE with squared inter-item correlations within the construct (see Table 7) to assess discriminant validity to see whether the AVE is higher than squared correlations (Hair et al., 2019; Zewude & Hercz, 2022b). Thus, based on the suggested criteria, AVE is higher for all the constructs in this study than the squared correlation of each construct, suggesting that each factor's variance is better explained by the corresponding items that mainly load on each factor.

Third, to demonstrate the convergent validity of the PsyCap, teacher motivation and teacher well-being construct, the researchers tested its association with other relevant positive psychology constructs (life satisfaction). The result revealed that the PsyCap, teacher motivation and the teacher well-being construct has a statistically and positively significant relationship with life satisfaction ($r = 0.348$, $p < 0.01$; $r = 0.482$, $p < 0.0$, and $r = 0.274$, $p < 0.01$) respectively. In addition, the researchers tested teacher well-being construct divergent validity by measuring their relationship with negative psychological constructs (anxiety and depression). The result of divergent validity showed that PsyCap, teachers motivation and teacher well-being were negatively and significantly correlated to each of the negative variables: anxiety ($r = –0.086$, $p < 0.01$; $r = –0.064$, $p < 0.05$, and $r = –0.091$, $p < 0.01$) and depression ($r = –0.095$, $p < 0.01$, $r = –0.59$, $p < 0.05$) , and $r = –0.063$, $p < 0.05$) respectively (see Table 7).

Based on the results obtained, we can confidently conclude that the PsyCap, teacher motivation, and teacher well-being constructs in Ethiopian higher educational settings meet the requirements of convergent, discriminant, and divergent validity. The results further suggest that the instruments are applicable.

Table 7

Pearson-correlations of PCQ-12, WTMST, TWBS scores and related measures

Variables	**Convergent validity**		
	Constructs		
	PCQ-12	TWBS	WTMST
Life Satisfaction	0.348**	0.482**	0.274**
	Divergent validity		
Anxiety	–.086**	–.064*	–.091**
Depression	–.095**	–.059*	–.063*

Note. *p < .05. **p < .01. PCQ-12=psychological capital questionnaire, TWBS=teacher well-being scale, WTMST=work task motivation scale for teachers

5.1.3. Confirmatory Factor Analysis: Model Comparison and Evaluation

RH_2: We expect a good measurement model fit from confirmatory factor analysis of the TWBS, WTMST, PsyCap and CWS-Q using single-factor, correlated factor, bifactor, and higher-order CFA models with a group of university teachers (Collie et al., 2015; Fernet et al., 2008; Zewude et al., 2022; Zewude & Hercz, 2022b).

To answer the second research hypothesis, we examined the four competing models (correlated factor, single-factor, bi-factor, and higher-order) factor for the PCQ-12, WTMST,CWS-Q and TWBS measures and chose the most appropriate model fit for further test invariance. The best criteria for selecting the best model are the highest goodness of fit: Tucker-Lewis's index TLI, Comparative Fit Index (CFI) and Root Mean Squared Error of Approximation (RMSEA) and the lowest Akaike information criterion (AIC) and Bayesian information criterion (BIC). As a result, the current study showed the highest TLI, CFI, and RMSEA and the smaller values of AIC and BIC of the correlated factor of PsyCap, the bifactor of work task motivation and teacher well-being (see Table 8), than the other models. Figures 8, 9, 10 and 11 (a ─ d) illustrate the four competitive models (single, correlated, higher-order, and bi-factor) models of the PCQ012, WTMST, TWBS and CWS-Q, respectively.

Table 8

Comparison of fit indices in the four competitive models for PsyCap, WTMST, and TWBS

Psychological capital (PsyCap)						
Models	χ 2 (df)	TLI	CFI	RMSEA (95% CI	AIC	BIC
Single-Order Factor	2661.50 (54) *	0.530	0.616	0.208 [.201, .215]	2709.0	2830
Correlated Factor	304.05 (48) *	0.948	0.962	0.069 [.062, .077]	364.05	514.61
Bi Factor	396.47 (47) *	0.928	0.949	0.082 [.074, .089]	458.47	614.04
Higher-Order Factor	405.94 (50) *	0.931	0.948	0.080 [.073, .087]	461.95	602.46
Models	**Work Task motivation scale for teachers (WTMST)**					
Single-Order Factor	4541.85 (90) *	0.306	0.405	0.211 [.205, .216]	4601.85	4752.40
Correlated Factor	243.181(80) *	0.971	0.978	0.043 [.037, .049]	323.18	523.92
Bi Factor	189.74 (75) *	0.979	0.985	0.037 [.031, .044]	279.74	505.56
Higher-Order Factor	289.17 (85) *	0.966	0.973	0.046 [.041, .052]	359.17	534.81
Models	**Teacher Well-being Scale (TWBS)**					
Single-Order Factor	5470.98 (104) *	0.513	0.578	0.215 [.210, .220]	5534.98	5695.58
Correlated Factor	455.63 (101) *	0.967	0.972	0.056 [.051, .061]	525.63	701.27
Bi Factor	359.75 (88) *	0.971	0.979	0.053 [.047, .058]	455.75	696.63
Higher-Order Factor	455.63 (101) *	0.967	0.972	0.056 [.051, .061]	525.63	701.27

Models	**Coping with Stress *(*CWS-Q; N=836)**					
	χ 2 (df)	TLI	CFI	RMSEA (95% CI	AIC	BIC
Single-Order Factor	3332.15(27) *	0.315	0.486	0.383 [.372, .394]	3368.15	3453.26

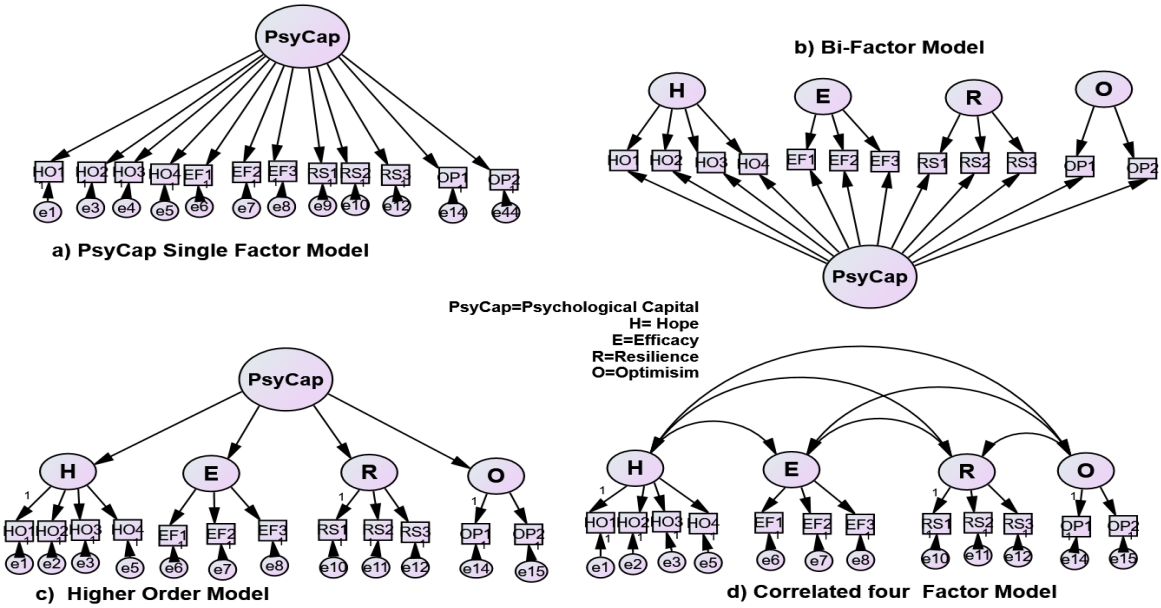
Correlated Factor	104.35(24) *	0.981	0.988	0.063 [.051, .076]	146.35	245.65
Bi Factor	313.33(19) *	0.913	0.954	0.136 [.123, .150]	365.33	488.27
Higher-Order Factor	104.35(24) *	0.981	0.988	0.063 [.051, .076]	146.35	245.65

Notes. N=1117. * $p < 0.001$. AIC = Akaike information criterion. BIC= Bayesian information criterion; CFA=confirmatory factor analysis; df = degree of freedom; FI = comparative fit index RMSEA = root mean squared error of approximation; TKI = Tucker-Lewis's index; $\chi 2$= chi-square.

Table 8 demonstrates that except for a single factor, three of the competing models, namely the correlated factor, the bi-factor, and the higher-order factor models of PsyCap, WTMST and TWBS, showed an excellent model fit. Regarding the best model fit among the four competing models, the PsyCap model showed best in the correlated factor model. In contrast, the WTMST and TWBS were the best fitted in the bi-factor model used for further measurement invariance analysis. The PsyCap four competitive models of this study result found that, $\chi 2$ (80) = 243.18, $p < 0.001$, TLI = 0.948, CFI = 0.962, RMSEA = 0.069, 95% CI [0.062, 0.077], AIC=364.05, BIC=514.61 for correlated factor model; $\chi 2$ (47) = 396.47, $p < 0.001$, TLI = 0.928, CFI = 0.949, RMSEA = 0.082, 95% CI [0.074, 0.089], AIC=458.47, BIC=614.04 for bi factor model; and $\chi 2$ (50) = 405.95, $p < 0.001$, TLI = 0.931, CFI = 0.948, RMSEA = 0.080, 95% CI [0.073, 0.087], AIC=461.95, BIC=602.46 for higher-order factor model.

Figure 8.

The Four Competing PCQ-12 Models of Confirmatory Factor Analysis (CFA)

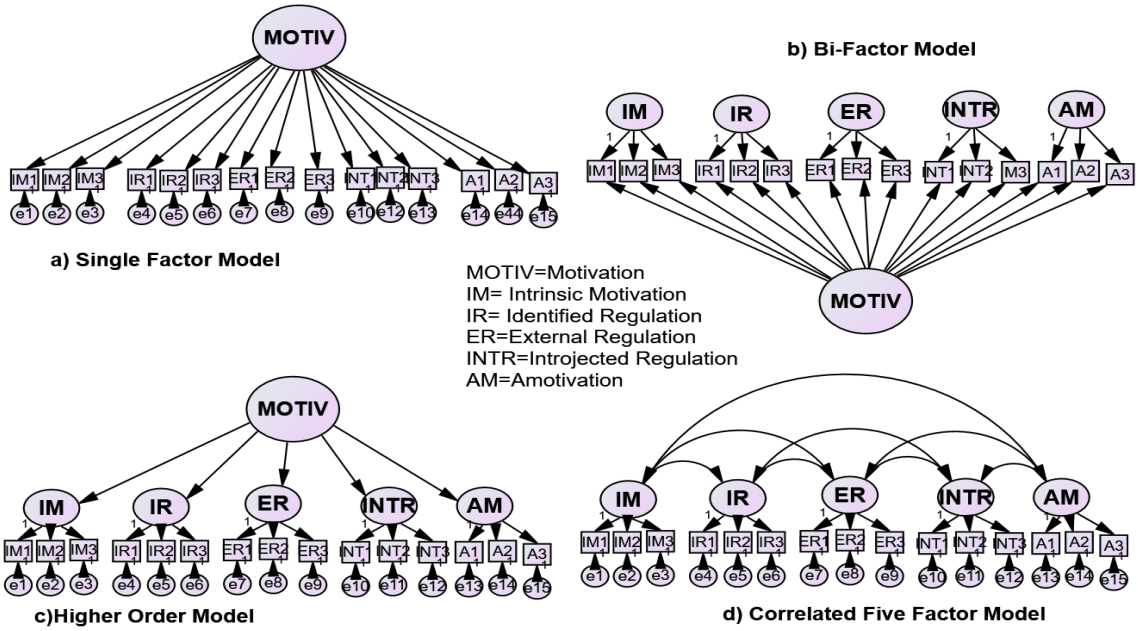


Note. Figure 8 presents the four competing models of PsyCap confirmatory factor analysis (Zewude & Hercz, 2022b).: (a) Single-factor model, (b) Bi-factor model, (c) Higher-order factor Model, and (d) Four-factor correlated model and shows that all models compared by the model fit indices TLI, CFI >.90, and RMSEA < 0.08, meaning that all models except single factor model are significant and met the global fit requirement.

The correlated factor, the bi-factor, and the higher order model results of WTMST found that, $\chi 2$ (75) = 189.74, $p < 0.001$, TLI = 0.979, CFI = 0.985, RMSEA = 0.037, 95% CI [0.031, 0.044], AIC=279.74, BIC=505.56; $\chi 2$ (80) = 243.18, $p < 0.001$, TLI = 0.971, CFI = 0.978, RMSEA = 0.043, 95% CI [0.037, 0.049], AIC=323.18, BIC=523.92; and $\chi 2$ (85) = 289.17, $p < 0.001$, TLI = 0.966, CFI = 0.973, RMSEA = 0.046, 95% CI [0.041, 0.052], AIC=359.17, BIC=534.81respectively. Figure 9 illustrates the four competing models of WTMST presented below.

Figure 9.

The four Competing work task motivation scales for teachers (WTMST) using CFA



Adapted from Zewude et al. (2022b.p. 2252)

Finally, the TWBS results, the bi-factor: (χ2 (88) = 359.748, p < 0.001, TLI = 0.971, CFI = 0.979, RMSEA = 0.053, 95% CI [0.047, 0.058], AIC=455.75, BIC=696.63;the correlated factor model: (χ2 (101) = 455.63, p < 0.001, TLI = 0.967, CFI = 0.972, RMSEA = 0.056, 95% CI [0.051, 0.061], AIC=525.63, BIC=701.27; and the higher order model: (χ2 (101) = 455.63, p < 0.001, TLI = 0.967, CFI = 0.972, RMSEA = 0.056, 95% CI [0.051, 0.061], AIC=525.63, BIC=701.27 showed the best fitness of indices.

The bi-factor model of the WTMST and TWBS, while the correlated factor model of the PCQ-12 and the CWS-Q measures, showed the highest global fitness indices (TLI, CFI, and RMSEA) and the lowest in AIC and BIC compared to the other three comparison CFA models. On the other hand, higher-order and correlated factor models showed congruent results, and the single-factor model showed the worst fitness of indices. The poor fitness of indices of the single-factor model implies that the PCQ-12, WTMST, CWS-Q and TWBS constructs are multi-dimensional constructs. As a result, the single-factor model was rejected due to its poor standard global cut-off points. Hence, the PCQ-12, the WTMST, CWS-Q and the TWBS show

the best fit in this study in the three model comparisons: the bi-factor model, the correlated-factor model, and the higher-order factor model.

Table 9

Standardised factor loadings for the four computing models on the PCQ-12, TWBS, and WTMST

Teacher well-being Scale (TWBS) (N=1117)									
Sub Dimension	Items	Single-factor model	Bi-Factor	Higher-order Factor	Correlated Factor Model				
					WWB	OWB		SIWB	
Workload well-being	W1	0.57	.45	0.77	.77				
	W2	0.62	.51	0.82	.82				
	W3	0.56	.43	0.79	.79				
	W4	0.63	.52	0.83	.83				
	W5	0.59	.47	0.83	.83				
	W6	0.63	.54	0.80	.80				
Organisational well-being	O1	0.67	.58	0.74		.74			
	O2	0.74	.67	0.85		.85			
	O3	0.75	.62	0.85		.85			
	O4	0.71	.60	0.81		.81			
	O5	0.70	.56	0.80		.80			
	O6	0.76	.74	0.80		.79			
Student interaction well-being	S1	0.66	.66	0.88				.88	
	S2	0.63	.62	0.87				.87	
	S3	0.58	.55	0.81				.81	
	S4	0.68	.67	0.86				.86	
Work task motivation scale for teachers (WTMST; N=1117)									
Sub Dimension	Items	Single actor Model	Bi-Factor Model	Higher-order Factor	Correlated Factor Model				
					IM	IR	ER	ITR	AM
Intrinisic	IM1	0.33	0.82	0.84	0.84				

Motivation	IM2	0.43	0.53	0.66	0.66				
	IM3	0.29	0.71	0.74	0.75				
Identified Regulation	IR1	0.59	0.55	0.76		0.76			
	1R2	0.56	0.71	0.85		0.85			
	IR3	0.51	0.66	0.78		0.78			
External Regulation	ER1	0.60	0.45	0.72			0.72		
	ER2	0.71	0.47	0.85			0.85		
	ER3	0.67	0.42	0.79			0.79		
Introjected Regulation	ITR1	0.59	0.69	0.84				0.84	
	ITR2	0.56	0.80	0.89				0.89	
	ITR3	0.57	0.74	0.85				0.85	
Amotivation	AM1	0.24	0.63	0.66					0.66
	AM2	0.31	0.79	0.85					0.84
	AM3	0.26	0.73	0.77					0.77

Psychological Capital Questionnaire (PCQ-12;N=1117)

Sub Dimension	Items	Single Factor Model	Bi-Factor Model	Higher-order Factor	Correlated Factor Model			
					Hope	Efficacy	Resilience	Optimism
Hope	H1	0.81	0.63	0.86	0.86			
	H2	0.78	0.59	0.82	0.82			
	H3	0.75	0.58	0.80	0.80			
	H4	0.71	0.47	0.73	0.72			

Efficacy	EF1	0.55	0.40	0.71	0.71		
	EF2	0.65	0.42	0.78	0.78		
	EF3	0.69	0.55	0.87	0.87		
Resilience	RE1	0.43	0.59	0.78		0.77	
	RE2	0.42	0.63	0.81		0.81	
	RE3	0.41	0.64	0.79		0.81	
Optimism	OP1	0.42	0.56	0.79			0.78
	OP2	0.45	0.65	0.86			0.87

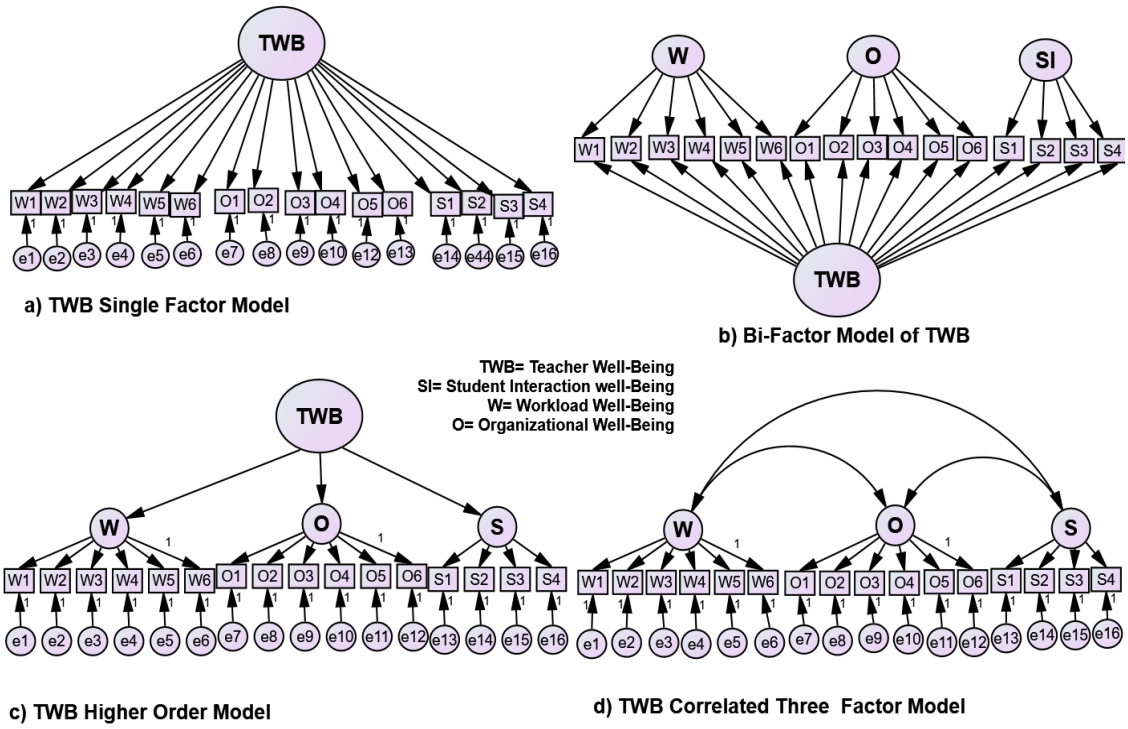
Coping with Stress Questionnaire (CWS-Q; N=836)

Sub-dimensions	Items	Single Factor Model	Bi-Factor Model	Higher-order Factor Model	Correlated Factor		
					Acceptance	Change	Withdrawal
Acceptance	Ac1	0.88	0.77	0.91	0.81		
	Ac2	0.88	0.87	0.93	0.93		
	Ac3	0.82	0.57	0.81	0.91		
Change	Ch1	0.66	0.79	0.88		0.88	
	Ch2	0.68	0.63	0.82		0.82	
	Ch3	0.62	0.75	0.86		0.86	
Withdrawal	WD1	-0.43	0.84	0.90			0.90
	WD2	-0.41	0.92	0.95			0.95
	WD3	-0.37	0.93	0.96			0.96

Note: The factor loadings of each latent variable of the PCQ-12, WTMST, TWBS and CWS-Q

Figure 10.

The Four Competing Teacher Well-being Models Using Confirmatory Factor Analysis



Adapted from Zewude & Hercz (2022c, p. 256)

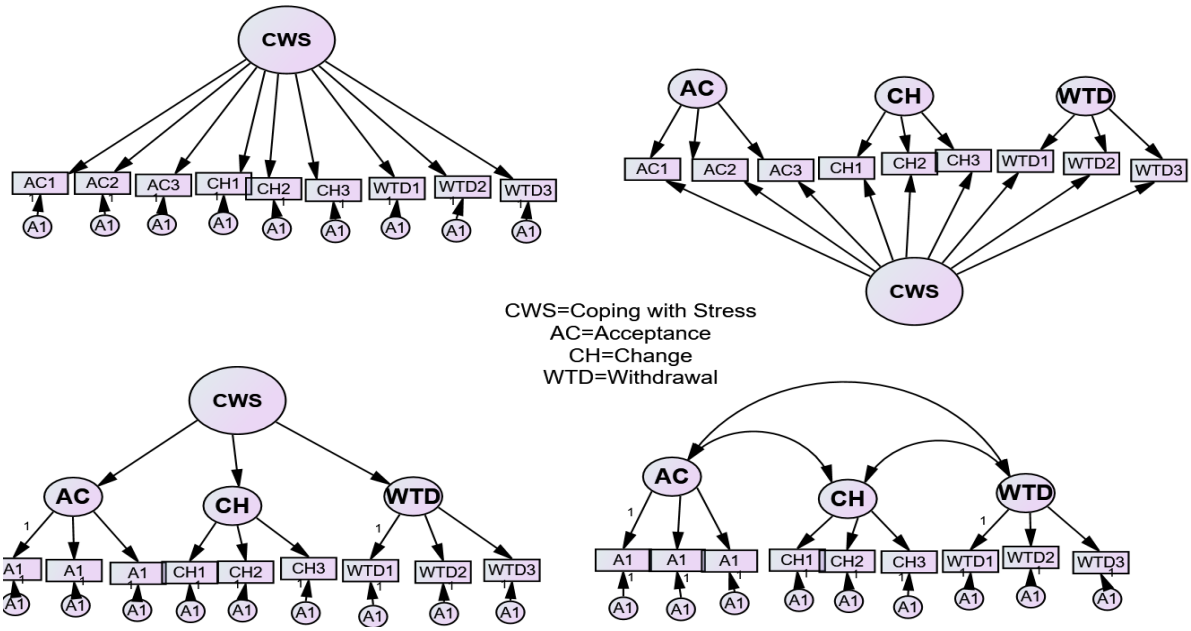
As proposed in hypothesis 2, a correlated factor model of PCQ-12 and CWS-Q and the bi-factor model of WTMST and TWBS were determined to be the best fitting model using TLI, CFI, and RMSEA and the lowest score in AIC and BIC compared with the other three comparison CFA models and used for further invariance tests. On the other hand, higher-order and correlated factor models showed congruent results, and the single-factor model showed the worst fitness of indices. Due to this, the correlated factor model for PCQ-12 and CWS-Q and the bi-factor model of WTMST and TWBS were used for further measurement invariance tests (see Table 8).

Additionally, the correlated factor model in inter-factor relationships showed moderate following Schober et al.'s (2018) cut-points. However, the factor loadings were high and significant in all four dimensions ($p < 0.001$) (see Table 10). All the 12 items of the PCQ-12, the 16 items of TWBS, the 15 items of the WTMST, and the nine (9) items of CWS-Q of the four competing models' factor loadings higher than 0.40 showed a significant value (see Table 9).

To summarise, this study's model comparison values for these goodness-of-fit indices (TLI and CFI > .90, and RMSEA < .08) and AIC and BIC lowest scores indicate the best-fitted model used for further measurement invariance analysis to ensure and give a complete picture of cross-cultural validation. The results are shown in Table 8).

Figure 11.

The Four Competing CWS Models of Confirmatory Factor Analysis (CFA)



Note. Figure 11 represents the four competing models of CWS-Q confirmatory factor analysis; (a) Single-Factor Model, (b) Bi-Factor Model, (c) Higher-Order Factor Model, and (d) Four-Factor Correlated Model, and shows that all models compared by the model fit indices TLI, CFI >.90, and RMSEA < 0.08, meaning that all models except single factor model are significant and met the global fit requirement.

5.1.4 Measurement Invariance

RH_3: The TWBS, WTMST, PCQ-12 and CWS-Q will be invariant across gender and university type (Zewude et al., 2022; Zewude & Hercz, 2022b).

To test research hypothesis 3, we employed measurement invariance (MI) to check whether the instruments are invariant across groups or not. MI is the four stages of

measurement invariance across gender and university-type groups on the constructs; (a) the configural MI (the same reference), (b) the metric MI (the same factor loadings), (c) the scalar MI: the equivalence of intercepts, and (d) the residual MI (equality or similarity of errors).

For the above research hypothesis, we guided by the following cut-points as the most fitting: MI: ΔCFI = 0.02 and ΔRMSEA = 0.03 for the metric invariance test and ΔCFI = 0.01 and ΔRMSEA ≤ 0.015 for the scalar and residual tests (Putnick & Bornstein, 2016). The PCQ-12, WTMST, CWS-Q and TWBS were constructed independently across groups, and the model fit single CFA was performed before testing MI (see Table 10). Figures (8, 9, 10 and 11) below clearly illustrate the measurement invariance across groups of the PsyCap, teacher motivation and teacher well-being models, respectively.

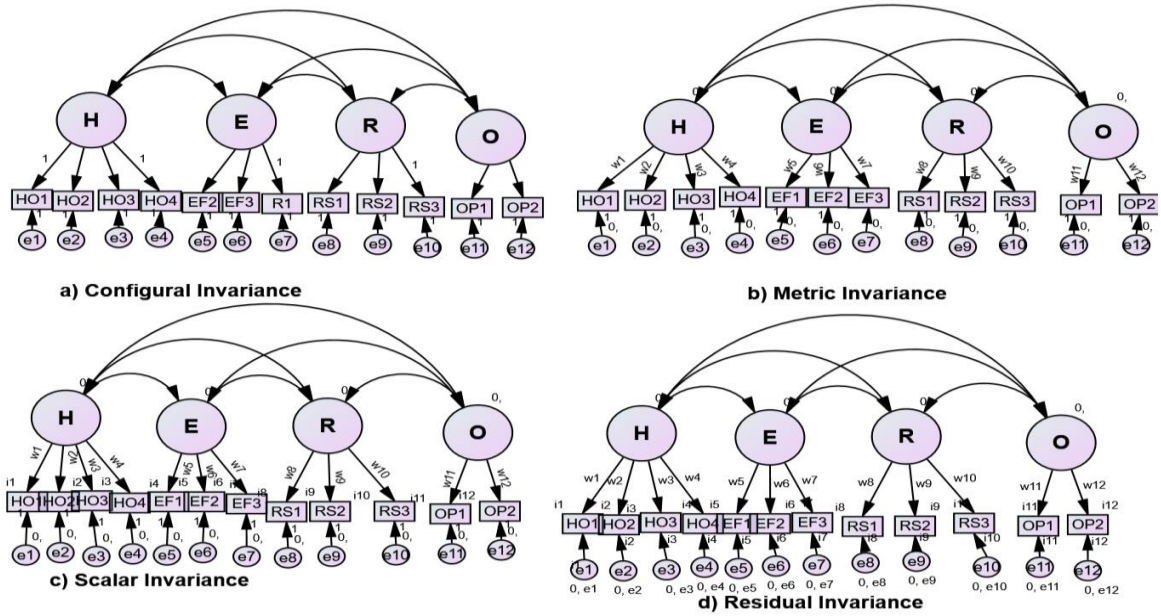
Measurement Invariance (MI) of Psychological Capital Questionnaire (PCQ-12)

Gender: The single-level PsyCap measurement model showed an acceptable model fit for both women ($\chi^2(48) = 95.105$, P < .001, TLI = .962, CFI = .972, RMSEA = 0.059, 95% CI [0.041, 0.079], and men ($\chi^2(48) = 259.28$, P < 0.001, TLI = 943, CFI = 0.958, RMSEA = 0.073, 95% CI [0.061, 0.081]. After checking the independent fitness of the model, we performed the MI following the steps we outline below (see Table 10 and Figure 12).

Step 1: The PsyCap of configural measurement invariance (CMI) fit the data across gender, and the results were as follows: ($\chi^2(96) = 354.0$, P < .001, TLI = .948, CFI = .962, RMSEA = .049 [.044–.055] for the PsyCap model. In the second step, we determined metric measurement invariance (MMI) using the maximum likelihood test result showed: $\Delta\chi^2(8) = 9$, ΔTLI = −.004, ΔCFI = −.000, ΔRMSEA = .002, 95% CI [0.002, 0.002]. The third step of MI is the scalar measurement invariance (SMI), which is: $\Delta\chi^2$ (4) = 19.437, ΔTLI = .003, ΔCFI = .001, ΔRMSEA = −.002, 95% CI [0.002, 0.003]. The constrained factor loadings and the items intercept were equal for the two sexes. Based on the scalar variance result, we tested the residual measurement invariance in the fourth step and found: $\Delta\chi^2$ (12) = 18.56, ΔTLI = −.003, ΔCFI = −.001, ΔRMSEA = .001, 95% CI [0.001, −.001]. Therefore, we can conclude that the PsyCap positive psychology constructs measured all variables equally, irrespective of gender.

Figure 12.

Measurement Invariance of the PsyCap Model



Adapted from Zewude et al. (2022b.p. 2252)

University Type: Research university, applied university, and general university types yielded an excellent fit to the data at the PsyCap correlated four factor model, $\chi 2$ (48) = 135.47, $p < 0.001$, TLI=0.954, CFI=0.966, ΔRMSEA = .065, 95% CI [0.052, 0.078]; $\chi 2$ (48) =155.07, $p < 0.001$, TLI=0.932, CFI=0.950, RMSEA = .082, 95% CI [0.068, 0.097]; and $\chi 2$ (48) =143.29, $p < 0.001$, TLI=0.940, CFI=0.956, ΔRMSEA = .075, 95% CI [0.061, 0.089], respectively (see Table 10).

As displayed in Table 10, as for the university types for the PsyCap model, all four stages of measurement invariances (configural, metric, scalar, and residual) showed an excellent model fit. Changes in the goodness of fit indices were below the conventional cut-off points: ΔCFI ≤ 0.01 (Chen, 2007; Putnick & Bornstein, 2016) and ΔRMSEA of 0.015 for metric, scalar and residual invariance (Chen, 2007; Putnick & Bornstein, 2016). The metric invariance test revealed only ΔCFI= 0.02 and ΔRMSEA= 0.03 for scalar and residual tests when ΔCFI should be 0.01 and RMSEA ≤ 0.015 (Putnick & Bornstein, 2016).

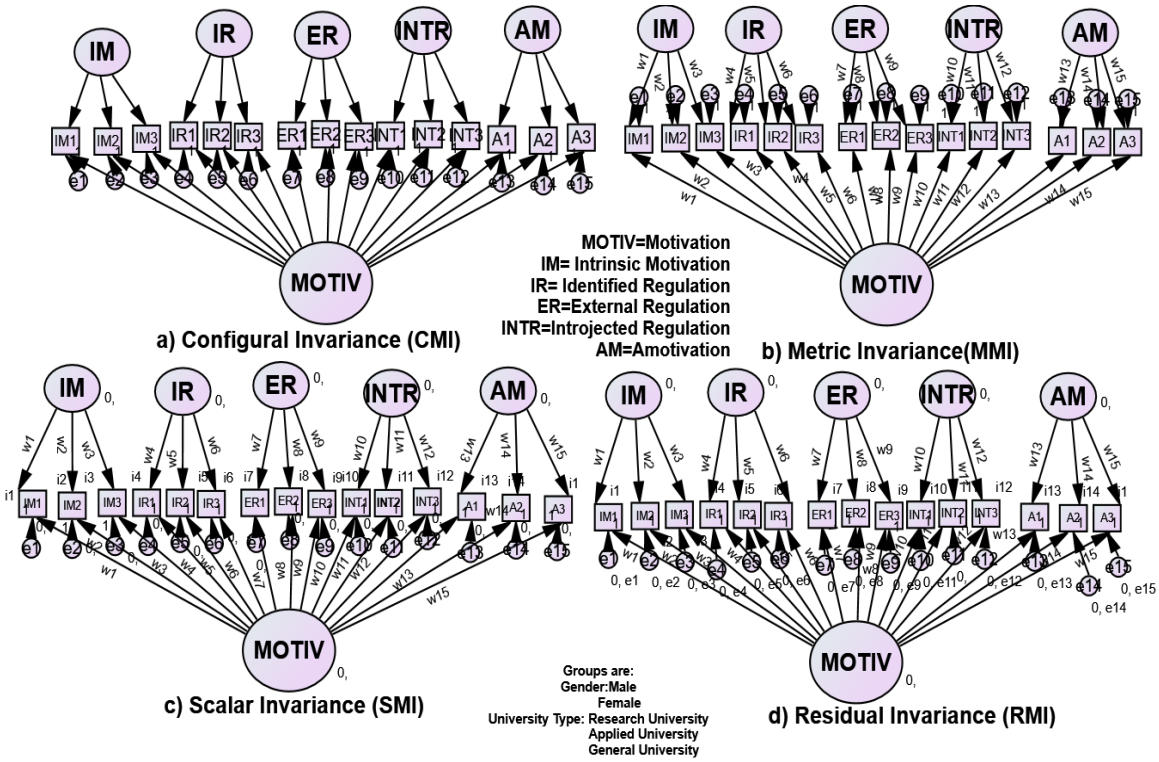
Measurement Invariance (MI) of Teacher's Work Task Motivation

Gender: As the result of single level measurement with respect, to work task motivation scale, men showed an excellent model fit, $\chi 2$ (75) = 170.551, $p < 0.001$, TLI = 0.976, CFI = 0.983, RMSEA = 0.039, 95% CI (0.031, 0.047). Women also showed an excellent model fit, $\chi 2$ (75) = 114.064, $p < 0.001$, TLI = 0.971, CFI = 0.980, RMSEA = 0.043, 95% CI (0.026, 0.058) (see Table 10, Figure 13). The following four measurement invariances methods were tested, and the work task motivation scale results are as follows.

The first method, the configural measurement invariance (CMI) model across genders, showed the best model fit, $\chi 2$ (150) = 284.71, $p < 0.001$, TLI = 0.975, CFI = 0.982, RMSEA = 0.028, 95% CI (0.023, 0.033), while the second method, metric measurement invariance (MMI) test showed that, $\Delta\chi^2(10) = 8.257$, ΔTLI = ─0.002, ΔCFI = 0.000, ΔRMSEA = 0.001, 95% CI [─0.001, 0.001] (see Table 9). The third method of MI is, called the SMI, compares metric and scalar measurement invariance. The SMI using the maximum likelihood test found that $\Delta\chi^2(15) = 26.29$, ΔTLI= 0.000, ΔCFI = ─0.001, ΔRMSEA = 0.000, 95% CI (0.000–0.000). This implies that the constrained factor loadings and the items intercept are equal in the case of gender. The researchers performed the final stage, residual measurement invariance (RMI) based on the scalar variance result. The RMI revealed that $\Delta\chi^2(15) = 33.751$, ΔTLI = 0.001, ΔCFI = 0.003, ΔRMSEA = ─0.001, 95% CI (─0.001–0.000). Therefore, it can be concluded that the teachers' motivation model was equivalent in measurement across gender.

Figure 13.

Measurement invariance model of the bifactor work task motivation of teacher's



Adapted from Zewude et al. (2022b.p. 2255)

University Type: University teachers working in the research, applied, and general universities showed excellent fit to the data (see Table 10), as did MI on the configural, metric, scalar, and residual tests. The strict model (residual) was achieved, and all factor loadings of each item, intercepts, and residual variances were equal across the three university clusters (groups).

Measurement Invariance (MI) of Teacher Well-being

Gender: Regarding to gender of university teachers with respect to teacher well-being model, men as compared women showed the best model fit to the data, ($\chi2(88) = 282.20$, $P < .001$, TLI=0.972, CFI=0.979, RMSEA = 0.051, 95% CI [.045– .058], and ($\chi2(88) = 206.57$ $P < .001$, TLI=0.952, CFI= .965, RMSEA = 0.069, 95% CI [.057– 0.082] respectively. Following the single CFA analysis, the MI result is presented as follows. For teacher well-being the CMI test yielded sufficient fit to the data at the bi-factor model regarding to the gender, $\chi2\ (176) =$

488.96, p < 0.001, TLI = 0.967, CFI = 0.977, RMSEA = 0.040 (0.035, 0.043) for teacher well-being model (see Figure 14 and Table 10).

As displayed in Table 10, for the metric measurement invariance result revealed: $\Delta\chi^2(15) = 27.46$, ΔTLI = 0.000, ΔCFI = 0.002, ΔRMSEA = 0.001, 95% CI [.001– 0.000]. This result indicates that the metric invariance test scores across gender were invariant. The items used to estimate the factorial loadings were the same for the two groups of the TWB model. The SMI was performed based on comparing metric and scalar measurement invariance. After computing the MMI, the more restrictive model constrained the item intercepts. The SMI factor loadings were calculated, which showed an acceptable fit for the TWB well-being model data: $\Delta\chi^2(16) = 12.74$**,** ΔTLI= –0.003, ΔCFI= –0.001, ΔRMSEA = 0.001, 95% CI [.001– 0.002]. It can be deduced that the item intercept and the factorial loadings are the same for the three age categories on the TWB model. The fitness indices of residual invariance (constrained item intercept, factor loadings and strict measurement invariance) were assessed to check the TWB model across gender. The RMI found that, $\Delta\chi^2(20) = 39.77$**,** ΔTLI= –0.001, ΔCFI= 0.002, ΔRMSEA = 0.001, 95% CI [.001– 0.001].

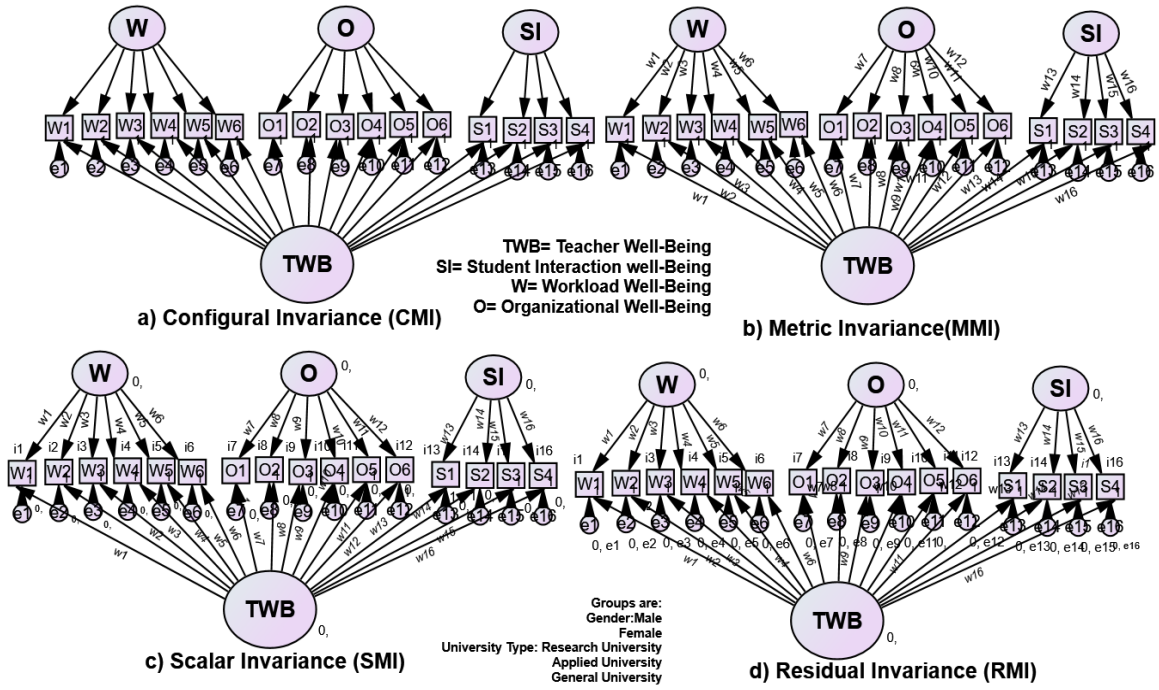
University Type: The Bi-factor, teacher well-being model, showed excellent fit to the data regarding university type (research, applied, or general) at single factor level, ($\chi2(88)$ =235.99, P< .001, TLI=.960, CFI=0.970, RMSEA=.061[0.052─ .071], ($\chi2(88)$ =261.43, P< .001, TLI=.950, CFI=.962, RMSEA=.076[.065─ .087], and ($\chi2(88)$ =209.78, P< .001, TLI=.952, CFI=.964, RMSEA=.061[.051─ .072] respectively. The TWB bi-factor model also showed an excellent fit to the data regarding university type at all four MI stages and presented the result as follows (see Table 10 and Figure 10). configural= $\Delta\chi^2(270) = 707.23$, ΔTLI= 0.954, ΔCFI= 0.966, ΔRMSEA = 0.038, 95% CI [.035– 0.042], metric = $\Delta\chi^2(20) = 20.7$**,** ΔTLI= –0.003, ΔCFI= 0.001, ΔRMSEA = –0.001, 95% CI [–0.002– 0.002], scalar = $\Delta\chi^2(32) = 91.71$**,** ΔTLI= 0.008, ΔCFI= 0.009, ΔRMSEA = –.002, 95% CI [–.003– –.003], and residual = $\Delta\chi^2(16)$ **=** 12.74**,** ΔTLI= 0.008, ΔCFI= 0.010, ΔRMSEA = –.003, 95% CI [–.003– –.002].

To sum up and shows that all groups in all the four stages have the best fit of indices, meaning that the teacher well-being construct is the same across all groups, the same constrained factorial loadings to the different groups responded in the same way to indicators, intercepts and the factor loadings were constrained in the same way across groups, and the similarity of item residuals of metric and scalar invariant items based on the recommended

values of Putnick & Bornstein (2016) and Vandenberg & Lance (2000). Table 10 demonstrates the model fit of the teacher well-being scale across the groups.

Figure 14.

Measurement Invariance of the Bi-factor Model of Teacher Well-being



Adapted from Zewude & Hercz (2022c, p. 258)

Measurement Invariance (MI) of Coping with Stress Questionnaire (CWS_Q)

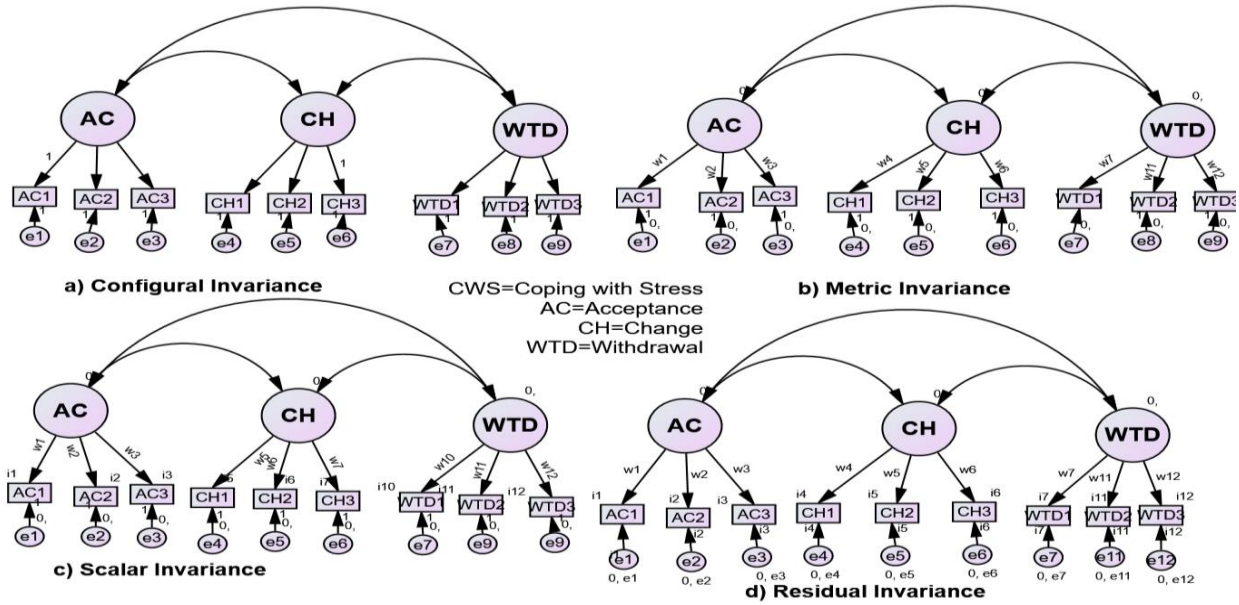
Gender: The single-level CWS measurement model showed an acceptable model fit for both men ($\chi^2(88) = 282.20$, $P < .001$, TLI = .972, CFI = .979, RMSEA = 0.051, 95% CI [0.045, 0.058], and women ($\chi^2(88) = 206.56$, $P < 0.001$, TLI = 952, CFI = 0.965, RMSEA = 0.069, 95% CI [0.057, 0.082].

University Type: Research university, applied university, and general university types yielded an excellent fit to the data at the CWS correlated three factor model, $\chi 2$ (90) = 235.99, $p < 0.001$, TLI=0.960, CFI=0.970, ΔRMSEA = .061, 95% CI [0.052, 0.071]; $\chi 2$ (90) =155.07, $p < 0.001$, TLI=0.950, CFI=0.962, RMSEA = .076, 95% CI [0.065, 0.087]; and $\chi 2$ (90) =209.78, $p < 0.001$, TLI=0.952, CFI=0.964, ΔRMSEA = .061, 95% CI [0.055, 0.072],

respectively After checking the independent fitness of the model, we performed the MI (see Table 10, Figure 15).

Figure 15.

Measurement Invariance of the Coping with Stress Questionnaire (CWS-Q) or CWS Model



Note. Figure 15 represents the four stages of measurement invariance across gender and university-type groups on the CWS model; (a) the configural MI (the same reference), (b) the metric MI (the same factor loadings), (c) the scalar MI: the equivalence of intercepts, and (d) the residual MI (equality or similarity of errors).

The correlated factor model of the CWS-Q focuses on three independent dimensions of coping strategies and examines measurement invariance across gender and university groups. International convention cutoff points supported our findings regarding gender: Δ TLI and ΔCFI ≤ 0.01 (Chen, 2007; Putnick & Bornstein, 2016) and ΔRMSEA of 0.015 for metric, scalar and residual invariance (Chen, 2007; Putnick & Bornstein, 2016). The metric invariance test revealed only ΔCFI= 0.02 and ΔRMSEA= 0.03 for scalar and residual tests when ΔCFI should be 0.01 and RMSEA ≤ 0.015 (Putnick & Bornstein, 2016). However, university type was not supported by scalar and residual invariance.

Table 10

Single-factor solution and measurement invariance of the PCQ-12, WTMST, CWS-Q and TWBS across gender and university type

Psychological Capital (PsyCap; N=1117)										
Model	Steps of MI	χ 2 (df)	χ2/df	TLI	CFI	RMSEA 95 % CI	Comparison	ΔTLI	ΔCFI	ΔRMSEA (95 % CI)
Gender	Male (n=835)	259.28 (48)*	5.40	.943	.958	.073 [.064, .081]	—	—	—	—
	Female (n=282)	95.10 (48)*	1.98	.962	.972	.059 [.041, .076]	—	—	—	—
MI	M1: Configural	354.40 (96)*	3.70	.948	.962	.049 [.044, .045]	—	—	—	—
	M2: Metric	363.37 (104)*	3.50	.952	.962	.047 [.042, .053]	M1	–.004	.000	.002 [.002, .008]
	M3: Scalar	382.58 (116)*	3.30	.955	.961	.045 [.040, .050]	M2	–.003	–.001	.002 [–.002, .003]
	M4: Residual	401.14 (128)*	3.13	.959	.960	.044 [.039, .049]	M3	–.004	.001	.001 [.001, .001]
University Type	Research University (n=431)	135.47 (48)*	2.82	.954	.966	.065 [.052, .078]	—	—	—	—
	Applied University (n=333)	155.07 (48)*	3.23	.932	.950	.082 [.068, .097]	—	—	—	—
	General University (n=353)	143.29 (48)*	2.98	.940	.956	.075 [.061, .089]	—	—	—	—
MI	M1: Configural	433.86 (114)*	3.01	.943	.958	.043 [.038, .047]	—	—	—	—
	M2: Metric	461.39 (160)*	2.88	.946	.957	.041[.037, .046]	M1	–.003	.001	.002 [.001, .001]
	M3: Scalar	507.60 (184)*	2.76	.950	.953	.040[.036, .044]	M2	–.004	004	.001 [.001, .002]
	M4: Residual	616.63 (208)*	2.95	.944	.941	.042[.038, .046]	M3	.006	.012	–.002 [–.002, –.002]

Work Tasks Motivation Scale for Teachers (WTMST; N=117)										
Gender	Male (n=835)	170.55(75) *	2.27	.976	.983	.039 [.031, .047]	—	—	—	—
	Female (n=282)	114.06(75) *	1.52	.971	.980	.043 [.026, .058]	—	—	—	—
MI	M1: Configural	284.71(150) *	1.90	.975	.982	.028 [.023, .033]	—	—	—	—
	M2: Metric	292.97 (160) *	1.83	.977	.982	.027 [.022, .032]	M1	-.002	.000	.001 [.001, .001]
	M3: Scalar	319.26 (175) *	1.82	.977	.981	.027 [.022, .032]	M2	-.000	.001	.000 [.000, .000]
	M4: Residual	353.01(190) *	1.86	.976	.978	.028 [.023, .032]	M3	.001	.003	-.001 [-.000, .000]
University Type	Research University (n=431)	150.42(75) *	2.00	.965	.975	.048 [.037, .060]	—	—	—	—
	Applied University (n=333)	96.03(75) *	1.28	.987	.991	.029 [.000, .045]	—	—	—	—
	General University (n=353)	128.58(75) *	1.71	.966	.976	.045 [.031, .058]	—	—	—	—
MI	M1: Configural	375.03 (225) *	1.67	.972	.980	.024 [.020, .029]	—	—	—	—
	M2: Metric	413.84 (1.69) *	1.69	.971	.978	.025 [.021, .029]	M1	.001	.002	–.001 [–.001, .000]
	M3: Scalar	480.06 (275) *	1.74	.969	.973	.026 [.022, .030]	M2	.002	.005	–.001 [–.001, –.001]
	M4: Residual	533.51 (305) *	1.75	.969	.970	.026 [.022, .030]	M3	.001	.003	.003 [.000, – .000]
Teacher Well-being Scale (TWBS;N=117)										
Gender	Male (n=835)	282.20(88) *	3.21	.972	.979	.051 [.045, .058]	—	—	—	—

	Female (n=282)	206.57(88) *	2.35	.952	.965	.069 [.057, .082]	—	—	—	—
MI	M1: Configural	488.96 (176)*	2.78	.967	.977	.040 [.035, .043]	—	—	—	—
	M2: Metric	516.42 (189)*	2.73	.967	.974	.039 [.035, .044]	M1	.000	.003	.001 [.000, –.001]
	M3: Scalar	529.16 (205)*	2.58	.970	.975	.038 [.034, .042]	M2	–.003	–.001	.001 [.001, .002]
	M4: Residual	568.83 (225)*	2.53	.971	.973	.037 [.032, .041]	M3	–.001	.002	.002 [.002, .001]
University Type	Research University (n=431)	235.99(88)*	2.62	.960	.970	.061 [.052, .071]	—	—	—	—
	Applied University (n=333)	261.43(88)*	2.90	.950	.962	.076 [.065, .087]	—	—	—	—
	General University (n=353)	209.78(88)*	2.33	.952	.964	.061 [.051, .072]	—	—	—	—
MI	M1: Configural	707.23 (270)*	2.62	.954	.966	.038 [.035, .042]	—	—	—	—
	M2: Metric	727.93(290)*	2.51	.957	.965	.037 [.033, .040]	M1	–.003	.001	.001 [.002, .002]
	M3: Scalar	879.64(345)*	2.73	.951	.956	.0039 [.036, .043]	M2	.008	.009	–.002 [–.003, –.003]
	M4: Residual	1034.38(345)*	3.00	.943	.946	.042 [.039, .045]	M3	.008	.010	–.003 [–.003, –.002]

	Coping with stress Questionnaire (CWS-Q)									
Model	Steps of MI	χ 2 (df)	χ2/df	TLI	CFI	RMSEA 95 % CI	Comparison	ΔTLI	ΔCFI	ΔRMSEA (95 % CI)
Gender	Male (n=630)	88.56(24) *	3.69	.980	.986	.065 [.051, .080]	—	—	—	—
	Female (n=206)	79.43(24) *	3.31	.952	.968	.106 [.081, .132]	—	—	—	—
MI	M1: Configural	168.17 (48) *	3.50	.972	.981	.055 [.046, .064]	—	—	—	—
	M2: Metric	174.69(54) *	3.23	.975	.981	.052 [.043, .060]	M1	–.003	.000	.003 [.003, .004]
	M3: Scalar	185.52 (63) *	2.94	.978	.981	.048 [.040, .056]	M2	–.003	.000	.004 [.003, .004]
	M4: Residual	200.99(72) *	2.79	.980	.980	.046 [.039, .054]	M3	–.002	.001	.002 [.001, .002]
University Type	Research University (n=309)	47.05 (24) *	1.96	.987	.991	.056 [.032, .079]	—	—	—	—
	Applied University (n=250)	66.70 (24) *	2.78	.967	.978	.084 [.084, .109]	—	—	—	—
	General University (n=272)	77.17 (24) *	3.21	.954	.969	.090 [.068, .112]	—	—	—	—
MI	M1: Configural	190.88 (72) *	2.65	.972	.981	.045 [.037, .052]	—	—	—	—
	M2: Metric	235.13 (84) *	2.80	.969	.976	.046[.040, .054]	M1	.003	.005	–.001 [–.003, –.002]
	M3: Scalar	389.56 (99) *	3.93	.950	.954	.059[.053, .066]	M2	.019	022	–.013 [–.013,–.012]
	M4: Residual	235.13 (117) *	4.46	.940	.936	.063[.058, .069]	M3	.010	.018	–.004 [–.005, –.003]

Note. PCQ-12, WTMST, and TWBS are studied in study 1; CWS-Q is a part of study 3.

5.1.5 Discussion

Despite the importance of cross-cultural validation and to check the suitability of the measures in the Ethiopian cultural context, in this sub-study, we tested the psychometric properties of Psychological Capital (PsyCap), Work Task Motivation (WTM), Coping With Stress (CWS) and Teacher Well-Being (TWB). This validation process was passed through several steps by using different recommended analyses. Besides, the measures are derived from grand theories such as Positive Psychology Theory (PPT), Self-Determination Theory (SDT), Broaden and Build of Positive Emotion Theory (BBPE), Conservation Resource Theory (COR) and the teacher well-being Theory(TWBT). These theories greatly interest practitioners and the scientific community owing to their innumerable benefits to individuals and organizations (Luthans et al., 2015; Li, 2018; Mayo et al., 2019; Ryan & Deci, 2017). Research on PsyCap, TWB, CWS and WTM will bring the academic success of students, foster a positive and healthy relationship with the school administrators and students, and help teachers to manage work stress (Collie et al., 2015; von der Embse & Mankin, 2020.; Zewude & Hercz, 2021; Zewude & Hercz, 2022b). To support teachers, students, and the educational institution's researchers and practitioners, emphasize psychometrically sound and context-based measures (Collie et al., 2015; Davidov et al., 2018; von der Embse & Mankin, 2020). For that reason, the measurement of PsyCap, WTM, CWS, and TWB is central to understanding positive human flourishing and optimal functioning (Fernet et al., 2008; Luthans et al., 2015; Gable & Haidt, 2005; Zewude & Hercz, 2021).

The first research construct investigated in this study was teacher well-being in Ethiopia's higher education context. Teachers spend most of their lives in university settings. Their collective experiences, institutional support, freedom of the institution and other rules affect their social development and powerfully influence their well-being and physical development (Singh et al., 2015). In the context of education, healthy teacher functioning and positive self-evaluation consist of three domains: workload, organizational, and student-related well-being (Collie et al., 2015; Van Horn et al., 2004). TWBS was developed by Collie et al. (2015) by including three well-being domains and noted a need for further psychometric evaluation across various cross-cultural settings.

The second crucial construct examined in this study was psychological capital (PsyCap), derived from positive psychology (Seligman, 2011) is a relatively novel construct and assessed by PCQ-12. The PCQ-12 measure was developed abroad in the United States, and the

instrument stemming from a single Western cultural background is called a mono-centred tool (Görgens-Ekermans & Herbert, 2013). Therefore it is vital to examine Ethiopia's cultural context.

The third construct explored in this study was WTM. To assess WTM, we tested the WTMST in the Ethiopian cultural context, derived from the self-determination theory applicable in the workplace and used to enhance well-being (Gagné & Deci, 2005; Ryan & Deci, 2008, 2017).

The last construct tested in this dissertation was CWS. CWS was assessed by the newly constructed tool known as CWS-Q. This tool is the most suitable for assessing university teachers' work experience. All in all, the TWBS, PCQ-12 and WTMST instruments were steemed from North America and Western cultural roots (Collie et al., 2015; Fernet et al., 2008; Fred Luthans et al., 2007); whereas CWS_Q (Rabenu et al., 2016) steemed from Asian cultural context.

Initially, we established the four competing models using AMOS and selected the best fit for the data to provide the best psychometric evaluation in Ethiopian higher education settings. Next, we did various statistical analyses in detail below in parallel with each hypothesis.

In the first research hypothesis ($RH_{1a)}$, we tested whether or not the four constructs are reliable in Ethiopian higher educational settings. In this regard, the result was found that the PCQ-12, WTMST, CWS-Q and TWBS proved excellent reliability using Cronbach alpha and composite reliability across the subscales. Therefore, this study found that the PCQ-12, WTMST, CWS-Q and TWBS proved excellent reliability using both Cronbach alpha and composite reliability across the subscales. This finding is congruent with that of the previous studies. For example, the PCQ-12 with (e.g. Lee et al., 2016; Martínez et al., 2021; Timo et al., 2016, Zewude & Hercz, 2021a), the TWBS with (e.g. Collie et al., 2015; Zewude & Hercz, 2021a; Zewude & Hercz, 2022b), the WTMST with (e.g., Fernet et al., 2008; Zewude et al., 2022b), and the CWS-Q with (e.g., Rabenu et al., 2016; Zewude & Hercz, 2021a; 2021b).

In the first research hypothesis ($RH_{1b)}$, we examined the PCQ-12, WTMST, CWS-Q and TWBS measures of convergent, discriminant and divergent validity following Hair et al. standardised guidelines (2019). Besides, the expected convergent and divergent validity have been assessed through the relationships between PsyCap, WTMST, TWBS and life

satisfaction, anxiety, and depression to strengthen the evidence. Therefore, this study supports the stated hypothesis (RH_{1b}), which met the best criteria of convergent validity, discriminant, and divergent validity with these data and is consistent with the recommendation of George & Mallery (2020) and Hair et al. (2019). This implies that the sub-constructs in each study variable are genuinely distinct from other constructs; the constructs correlated with the opposite variables (divergent validity) and positively associated with other similar positive variables (convergent validity). Consistent with our findings, several works of literature, such as Kamei et al. (2018), found a significant positive correlation between life satisfaction and PsyCap. In contrast, a moderate and negative relation was found between PsyCap and depression and stress. Djourova et al. (2018) also argued that PCQ-12 had a good convergent and discriminant validity in Spain's cultural context. Besides, some studies found the PCQ-12 had good convergent and discriminant validity (e.g., Görgens-Ekermans & Herbert, 2013; Grobler & Joubert, 2018; Martínez et al., 2021; Santana-Cárdenas et al., 2018). Furthermore, the TWBS and WTMST measures were mono-thetic instruments culturally developed and validated in Canadian cultural settings only. As a result, the TWBS done by Collie and her colleagues(2015) found that the measure had good reliability, construct and discriminant validity in Canadian cultural settings. Regarding convergent and divergent validity, the WTMST of Fernet et al. (2008) was associated with the various task. Well-being with life satisfaction as a positive construct, anxiety and depression as negative measures (Pezirkianidis et al., 2019; Wammerl et al., 2019; Zewude & Hercz, 2022b). In conclusion, in this study, the convergent and divergent validity of the PCQ–12, TWBS, WTMST and CWS-Q were positively related to life satisfaction and negatively associated with depression and anxiety, which is congruent with the previous studies (Zewude et al., 2022; Zewude & Hercz, 2021b; Zewude & Hercz, 2022b).

The second proposed research hypothesis (RH_2) was to test whether the PCQ-12, WTMST, CWS-Q and TWBS measures in the four competing CFA models (the correlated factor, bi-factor, single factor, and higher-order model) indicated a good fit for the data in this study or not. Hence, this study found that the single-factor model was unfitted with the existing data, indicating the measurement's multi-dimensionality. However, the bi-factor model showed better-fit indices for all subgroups from the four competing models (see TLI, CFI, RMSEA, AIC and BIC in Table 9); it partially supported hypothesis 2. The findings of this study are consistent with other studies reported in the scientific literature (Zewude & Herz, 2020; Zewude et al., 2022; Zewude & Hercz, 2022b). These results indicated that all models, except the single-factor model, were significant and met the global fit requirement.

Our third hypothesis (RH_3), is to test whether the PCQ-12, WTMST, CWS-Q, and TWBS measures are invariant across genders and university types or not. Regarding this, the model fit evaluations and invariance tests were conducted for the best-fitted models, i.e., the bi-factor model for TWBS and WTMST and the correlated factor model for the PCQ-12 and CWS-Q measures were tested across genders and university types. Concerning MI, in single facto, CFA and the four stages of invariance were satisfied in the four constructs, PCQ-12, WTMST, CWS-Q and TWBS and fulfilled in all groups. The existing literature supported the present study's findings and indicated that the measurement invariance would be indispensable to proving the psychometric properties of the measures (Millsap, 2011; Putnick & Bornstein, 2016; Vandenberg & Lance, 2000; Zewude et al., 2022; Zewude & Hercz, 2022a; Zewude & Hercz, 2022b).

5.1.6. Conclusion

The adaptation, development and validation of the PCQ-12, WTMST, CWS-Q and TWBS have shown it is valid and reliable in the Ethiopian context to assess university teachers' positive personal resources, work task motivation, coping skills and overall evaluation of their work. In addition, the instruments were invariant across groups. However, the university type was not achieved the global cutoff points in scalar and residual invariance to CWS-Q. Overall, we can conclude that the CWS was a psychometrically acceptable measure of teachers coping skills in Ethiopian higher education. The availability of such psychometrically suited instruments in the Amharic language will fill a large void in Ethiopia and Africa since over 130 million people speak Amharic.

5.2 Main Studies

5.2.1. Psychological Capital and Teacher Well-being among University Teachers: The Mediation Role of Work Task Motivation

5.2.1.0 Introduction

This sub-study is the first part of the main study to investigate the mediating role of Work Task Motivation (WTM) in the relationship between Psychological Capital (PsyCap) and Teacher Well-Being (TWB) in the Ethiopian cultural context. Besides, in this study, we examined the mediating role of intrinsic motivation, identified regulation, external regulation, introjected regulation and amotivation in the relationship between PsyCap and workload, organizational and student interaction well-being. Also, the reliability, measurement and structural model of each variable were evaluated and tested based on the recommendation of Hair et al. (2019), Kline (2016) and Tabachnick & Fidell (2018). In addition, the proportion of the variance explained (R^2) was performed to examine the accuracy of the prediction power of independent variables on dependent variables of the structured model obtained from the data. Finally, the findings are discussed in contrast with the latest published literature in the last session of this sub-study.

5.2.1.1. Descriptive Statistics

Addressing RH4: (a) PsyCap will be positively associated with WTM (total and dimension) and TWB (total and dimensions), and (b) WTM (total and dimension) will be positively associated with TWB (total and dimension).

Table 11 presents the internal consistency of the constructs, the descriptive statistics (means and standard deviations), the normality of distribution using kurtosis and skewness, and the correlations of all the main constructs.

Before examining the relationships of the variables, it is crucial to check the normality distribution of the variables in this data. To do so, first, we checked and examined the assumptions of the normality of the data. As a result, assessing the data normality is an underlying assumption and prerequisite of normal data (Mishra et al., 2019). However, the central limit theorem states that when the sample size has 100 or more, violation of the normality distribution is not a significant issue (Kim, 2013; Mishra et al., 2019). Therefore, a large sample size of ≥ 300 of the data depends on the absolute values of skewness and kurtosis,

and the value of skewness value ≤ 2 or kurtosis ≤4 may be used as reference values for determining considerable normality and the sample size increases, the standard error decreases (Kim, 2013; Mishra et al., 2019). The values of skewness and kurtosis lie between [-2] and [+2]; this is acceptable to prove the normal distribution of the data (Kline, 2016; Tabachnick & Fidell, 2018). Hence, following the above recommendation, the assumption of normality was met in this study.

A correlation matrix was performed and presented in the stated research hypotheses (RH4). The findings of this study confirmed a significant positive correlation between PsyCap and intrinsic motivation ($r = 0.207$, $p < 0.01$), identified regulation ($r = 0.254$, $p < 0.01$), workload well-being ($r = 0.214$, $p < 0.01$), organizational well-being ($r = 0.115$, $p < 0.01$), student interaction well-being ($r = 0.277$, $p < 0.01$), and TWB ($r = 0.266$, $p < 0.01$), which supports the stated hypothesis (5 and 6). However, PsyCap had a significant and negative relationship with external regulation ($r = -0.224$, $p < 0.01$), and amotivation ($r = -0.141$, $p < 0.01$), as well as a negative but nonsignificant relationship with introjected regulation (see Table 11).

Finally, intrinsic motivation had a positive and significant correlation with identified regulation ($r = 0.507$, $p < 0.01$) and was negatively correlated with external regulation ($r = -0.207$, $p < 0.01$), introjected regulation ($r = -0.272$, $p < 0.01$), and amotivation ($r = -0.270$, $p < 0.01$). Additionally, identified regulation had a negative and statistically significant relationship with external regulation ($r = -0.226$, $p < 0.01$) and amotivation ($r = -0.229$, $p < 0.01$) but not with introjected regulation ($r = -0.015$, $p > 0.05$). External regulation was positively significant with introjected regulation ($r = 0.269$, $p < 0.01$) and amotivation ($r = 0.408$, $p < 0.01$). The correlation of introjected regulation with amotivation was also positive and significant ($r = 0.441$, $p < 0.01$).

Table 11

Descriptive Statistics, Pearson correlation, Cronbach alpha (α) reliability, skewness, kurtosis of the primary constructs

Variables	M	SD	Sk	Ku	1	2	3	4	5	6	7	8	9	10
1	52.7046	7.54808	-.146	.127	**.88**									
2	12.0501	2.34963	-.621	.262	.207**	**.94**								
3	11.9499	2.47735	-.772	.886	.254**	.507**	**.87**							
4	11.6043	2.76484	-.270	-.011	-.224**	-.207**	-.226**	**.92**						
5	11.4181	2.99966	-.372	-.510	-.074	-.272**	-.015	.269**	**.92**					
6	10.3832	3.07522	-.245	-.273	-.141**	-.272**	-.229**	.408**	.441**	**.90**				
7	27.1513	5.32252	-.449	.063	.214**	.138**	.240**	-.013	.045	-.024	**.89**			
8	27.5094	5.20917	-.509	.069	.115**	.098*	.121**	.041	.129**	.084*	.321**	**.83**		
9	16.7171	4.40151	-.415	-.314	.277**	.235**	.361**	.168**	.006	-.137**	.366**	.288**	**.80**	
10	71.3778	11.94719	-.044	-.127	.266**	.205**	.313**	.053	.086*	-.025	.763**	.750**	.708**	**.87**

Notes. ******p<0.001(2-tailed); *p<0.05(2-tailed); M=mean; SD=standard, Cronbach alpha (**α**) in **diagonal bold,** 1=Psychological Capital, 2=Intrinsic motivation, 3-identified regulation, 4=external regulation, 5=introjected regulation, 6=amotivation, 7=workload wellbeing; 8=organizational wellbeing; 9=student interaction wellbeing; 10=teacher wellbeing, Ku=kurtosis, Sk=skewness

Table 12

CFA of the scales, the measurement model, and the structural model of the constructs

Fit indices	**CFAs of scales**			**Main constructs (Figure 11)**		**Rule of thumb**
	PsyCap	Motivation	TWB	Measurement model	Structural model	
$\chi 2$	186	375	220	1896	1896	
df	48	80	100	845	845	
P-Value	0.001	0.001	0.001	0.001	0.001	
$\chi 2$/df	3.87	4.69	2.17	2.24	2.24	≤5
TLI	0.951	0.947	0.970	0.931	0.931	≥0.90
CFI	0.964	0.960	0.974	0.935	0.935	≥0.95
SRMR	0.047	0.068	0.045	0.089	0.089	≤0.08
RMSEA	0.069 (0.059 – 0.080)	0.079 (0.071– 0.087)	0.044 (0.036–0.052)	0.046 (0.043–0.048)	0.046 (0.043–0.048)	≤0.08

	Model 1-IM		Model 2-IR		Model 3-ER		Model 4-INTR		Model 5-AM		Model 6-All Dimensions (See Figure 12)		Rule of thumb
	MM	SM	MM	SM	MM	SM	MM	SM	MM	SM	MM	SM	
$\chi 2$	701	724	767	789	732	758	719	741	705	734	1531	1759	

df	406	417	406	417	406	417	406	417	406	417	794	827	
P-value	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
$\chi 2$/df	1.73	1.73	1.89	1.89	1.80	1.82	1.77	1.77	1.74	1.76	1.93	2.13	≤5
TLI	0.967	0.966	0.958	0.957	0.963	0.962	0.964	0.964	0.965	0.964	0.948	0.937	0.95
CFI	0.971	0.970	0.963	0.962	0.967	0.966	0.969	0.968	0.970	0.968	0.954	0.942	0.95
SRMR	0.042	0.047	0.052	0.056	0.042	0.047	0.041	0.046	0.041	0.047	0.052	0.076	0.08
RMSEA	0.035 (0.031–0.039)	0.035 (0.031–0.039)	0.039 (0.034–0.043)	0.039 (0.035–0.043)	0.037 (0.032–0.041)	0.037 (0.033–0.041)	0.036 (0.032–0.040)	0.036 (0.032–0.040)	0.035 (0.031–0.039)	0.036 (0.031–0.040)	0.040 (0.037–0.042)	0.044 (0.041–0.046)	≤0.08

Notes. CFI=Comparative Fit Index, df= degree of freedom; MM=measurement model; RMSEA=Root Mean Squared Error of Approximation, SM=structural model; SRMR=Standardized Root Mean Square Residual, TKI=Tucker-Lewis Index.

Model 1-IM: PsyCap on teachers' workload, organisational, and student interaction well-being mediated by intrinsic motivation.

Model 2-IR: PsyCap on teachers' workload, organisational, and student interaction well-being mediated by identified regulation.

Model 3-ER: PsyCap on teachers' workload, organisational, and student interaction well-being mediated by external regulation.

Model 4-INTR: PsyCap on teachers' workload, organisational, and student interaction well-being mediated by introjected regulation.

Model 5-AM: PsyCap on teachers' workload, organisational, and student interaction well-being mediated by amotivation.

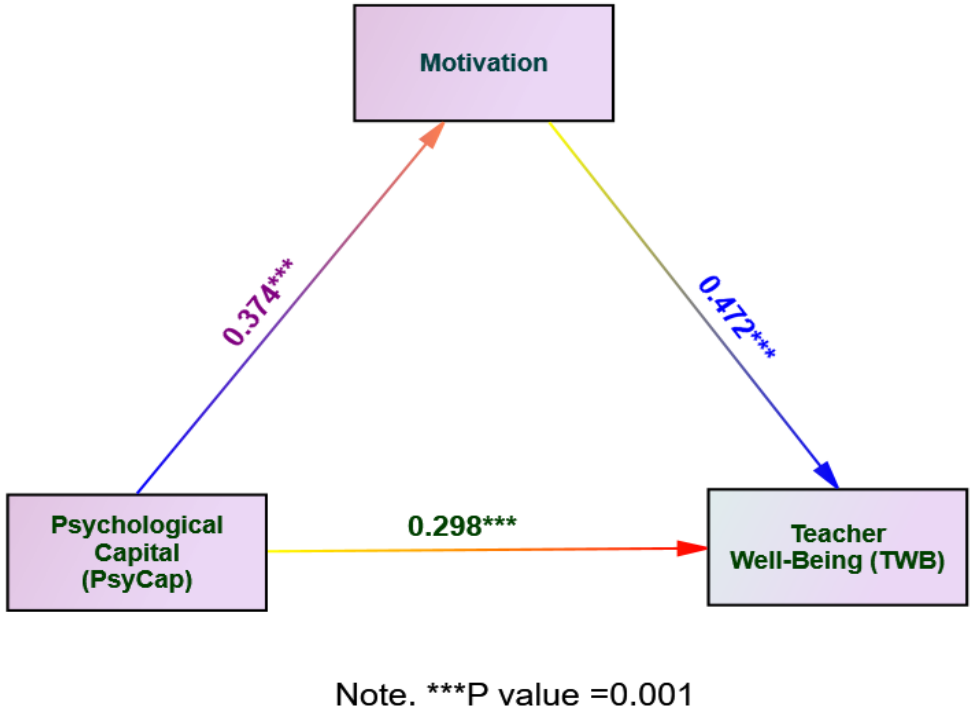
Model 6-All Dimensions: PsyCap on teachers' workload, organisational, and student interaction well-being mediated by intrinsic motivation, identified regulation, external regulation, introjected regulation, and amotivation

5.2.1.2. Mediation Analysis

RH_5: (a) PsyCap has a direct effect on TWB and WTM, and (b) WTM is a predictor of TWB and mediates the relationship between PsyCap and TWB.

Figure 16

Mediation model: the mediation role of WTM between PsyCap and TWB



Note: Zewude & Hercz (2022a)

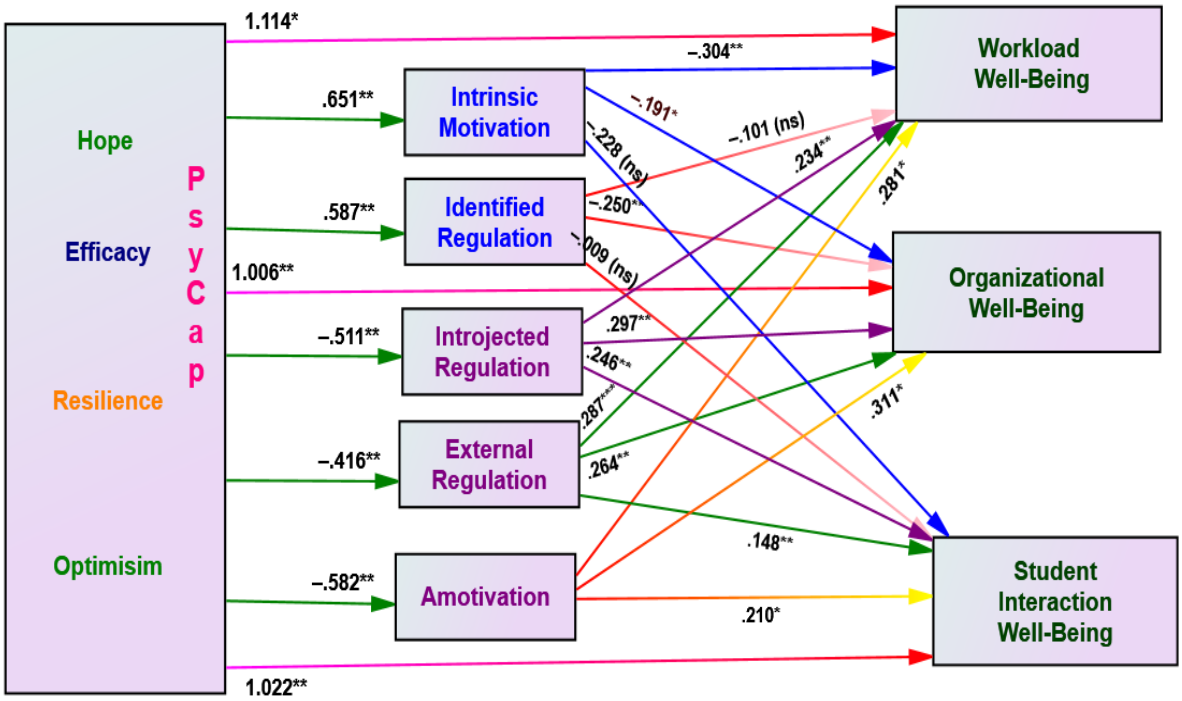
The mediating role of WTM in the relationship between PsyCap and TWB was examined in study two (see Table 14). Independent variables' indirect and direct impacts on the dependent variables were analyzed and presented (Figure 13). The mediating role of WTM in the relationship between PsyCap and TWB was examined. Independent variables' indirect and direct impacts on the dependent variables were analyzed and presented (Figure 14). We also examined the proportion of variance (i.e., R^2) explained by the predictor variables to measure the correctness of the prediction obtained with the structured model. As displayed in Table 13, PsyCap explains the variance of WTM (14 per cent) and the TWB (24 Per cent) indicated a better fit for the model.

The standardized direct effect path from PsyCap to WTM of teachers, and TWB was positive and significant (β = 0.374, [BC 95% bootstrap CI: 0.271 to.474], p <.001), and (β = 0.298 [95% bootstrap CI: 0.150 to 0.430], p <.001), which supports *RH5a*. The findings of this study support *RH5b,* which proposes that WTM is a direct and positive predictor of TWB (β = 0.472 [95% bootstrap CI: 0.003 to.481], p < 0.05). The indirect effect of PsyCap (see Table 14) on TWB mediated through WTM was significant (β = 0.110 [95% bootstrap CI: 0.006 to 0.206], p < 0.05), which supported *RH5b*. The mediation analysis regarding the structural model found that a good model fit (see Table 12): χ^2 (1896) = 845, p < 0.001, χ^2/df = 2.24, TLI= 0.931, CFI = 0.935, SRMR = 0.089, and RMSEA = 0.046 (0.043 to 0.048) (see Table 11). The goodness of fit for the measurement model was also acceptable; χ^2 (845) = 1896, p < 0.001, TLI = 0.931, CFI = 0.935, SRMR = 0.035, and RMSEA = 0.046 (0.043 to 0.048). This result indicates that our model had an acceptable structural and measurement model, supported by Hu and Bentler's (1999) cutoff points.

RH_6: (a) University teachers' PsyCap positively predicts the dimensions of their well-being, Intrinsic motivation and identified regulation, while negatively predicts introjected regulation, external regulation, and amotivation; (b) Intrinsic motivation and identified regulation positively, whereas introjected regulation, external regulation, and amotivation negatively predict TWB dimensions;(c) the WTM dimensions mediate the relationship between PsyCap and TWB dimensions (see Figure 3).

Figure 17.

The Conceptual Model of PsyCap Construct on Teachers' Well-being Dimensions Mediated through Work Task Motivation Dimensions



Notes. Figure 17 illustrates the conceptual model of the PsyCap construct on teachers' well-being dimensions mediated by intrinsic motivation, identified regulation, external regulation, introjected regulation, and amotivation.

To examine the mediating role of the dimensions of WTM in the relationship between PsyCap and the dimensions of TWB, we tested research hypothesis 6 (RH6b). We then tested the hypotheses considering the workload, organizational, and student interaction well-being as the dependent variables, PsyCap as the predictor variable, and the dimensions of WTM as the mediating variables. Also, we examined the proportion of variance (i.e., R^2) explained by the predictor variables to measure the correctness of the prediction obtained with the structured model. As displayed in Table 13, PsyCap explains the variance of intrinsic motivation (42.4 per cent), introjected regulation (34.5.4 per cent), amotivation (33.9 per cent), external regulation (26.1 per cent) and identified regulation, 17.3 per cent of the data indicated a better fit for the model. In addition, the model accounts for 44.9 per cent of the variance of student interaction well-being, 42.1 per cent of workload well-being, and 33.8 per cent of organisational well-being. All these confirmed that the model was acceptable, and PsyCap predicted the criterion variables well.

This study also found a significant and positive direct effect for PsyCap on workload well-being ($\beta = 1.114$ [95% bootstrap CI: 0.871 to 1.289], $p < 0.01$), organizational well-being

(β = 1.006 [95% bootstrap CI: 0.803 to 1.231], p < 0.01), and student interaction well-being (β = 1.022 [95% bootstrap CI: 0.804 to 1.212], p < 0.001). Moreover, the standardized direct beta coefficients from PsyCap to intrinsic motivation (β = 0.651 [95% bootstrap CI: 0.442–0.775], p < 0.01) and identified regulation (β = 0.587 [95% bootstrap CI: 0.360–0.724], p < 0.01). Conversely, PsyCap directly and negatively affected external regulation (β = −0.511 [95% bootstrap CI: −0.615, 0.349], p < 0.01), introjected regulation (β = −0.416 [95% bootstrap CI: −0.566, −0.243], p < 0.01) and amotivation β = −0.582 [95% bootstrap CI: −0.731, −0.383], p < 0.01), supporting RH6b.

RH6b also states that the direct effect of the intrinsic motivation on workload, and student interaction well-being is significant and positive (β = −0.304, 95% bootstrap CI [−0.595, −0.107], p < 0.01), (β = −0.228, 95% bootstrap CI [−0.510, −0.046], p < 0.05), although this is not the case for organizational well-being. Additionally, identified regulation had a negative and significant direct effect on organizational well-being (β = −0.250 [95% CI: −0.462, 0.064], p < 0.01) but not on workload well-being (β = 0.101 [95% bootstrap CI: −0.318, −0.096], p > 0.05), and student interaction well-being (β = −0.009 [95% bootstrap CI: −0.213, 0.153], p > 0.05). Moreover, external regulation, introjected regulation, and amotivation had a positive and significant direct effect on workload well-being, organizational well-being, and student interaction well-being (detail in Table 13; Figure 4).

Table 13

A standardised direct effect of PsyCap and work task motivation of teachers (total and dimensions) on teacher well-being (total and dimensions)

Outcome variables	**Path**	**Predictors**	**Standardised direct effect**	**Bootstrap 95% CI**		
				LBC	**UBC**	**p-value**
IM (R^2 = 0.424)	←	PsyCap	0.651	0.442	0.775	0.01
IR (R^2 = 0.173)	←	PsyCap	0.587	0.360	0.724	0.01
ER (R^2 = 0.261)	←	PsyCap	-0.511	–0.615	0.349	0.01
ITR (R^2 = 0.345)	←	PsyCap	-0.416	–0.566	–0.243	0.01
AM (R^2 = 0.339)	←	PsyCap	-0.582	–0.731	–0.383	0.01
WWB (R^2 = 0.421)	←	PsyCap	1.114	0.871	1.289	0.05

OWB (R^2 = 0.338)	←	PsyCap	1.006	0.803	1.231	0.01
SIWB (R^2 = 0.449)	←	PsyCap	1.022	0.804	1.212	0.01
WWB	←	IM	-0.304	–0.593	–0.107	0.01
OWB	←	IM	-0.191	–0.485	–0.023	NS
SWB	←	IM	-0.228	–0.510	-0.046	0.05
WWB	←	IR	-0.101	–0.318	0.064	NS
OWB	←	IR	-0.250	–0.462	–0.096	0.01
SIWB	←	IR	-0.009	–0.213	0.153	NS
WWB	←	ER	0.287	–0.162	0.434	0.001
OWB	←	ER	0.264	–0.160	0.411	0.01
SIWB	←	ER	0.148	–0.042	0.289	0.01
WWB	←	ITR	0.234	0.113	0.367	0.01
OWB	←	ITR	0.297	0.179	0.436	0.01
SIWB	←	ITR	0.246	0.131	0.361	0.01
WWB	←	AM	0.281	0.036	0.434	0.05
OWB	←	AM	0.311	0.146	0.540	0.01
SIWB	←	AM	0.210	0.084	0.509	0.05
Total Constructs						
Motiv (R^2 = 0.140)	←	PsyCap	0.374	0.271	0.474	0.001
TWB (R^2 = 0.240)	←	PsyCap	0.298	0.150	0.430	0.001
TWB	←	Motivation	0.472	0.003	0.481	0.05

Note. **p<0.01(2-tailed, statistically significant); LBC=lower bound; UBC=upper bound. AM=amtivation, ER=external regulation, IR-identified regulation, IM=intrinsic motivation, ITR=introjected regulation, OWB=organizational wellbeing; PsyCap=psychological capital, SIWB=student interaction wellbeing; TWB=teacher wellbeing, WWB=workload wellbeing.

The indirect effects of PsyCap through intrinsic motivation, identified regulation, external regulation, introjected regulation, and amotivation were significant on workload well-being (β = −0.664 [95% bootstrap CI: −0.779, −0.429], p < 0.05), organizational well-being (β = −0.711 [95% bootstrap CI: −0.894, −0.507], p < 0.01), and student interaction well-being (β

= −0.453 [95% bootstrap CI: −0.608, −0.244], p < 0.05), which supported RH6b (see Table 14). The mediation model (structural model) through intrinsic motivation, identified regulation, external regulation, introjected regulation, and amotivation indicates an acceptable fit: χ^2 (827) =1759, p <.001, χ^2/df = 2.13, TLI = 0.937, CFI = 0.942, SRMR = 0.076, and RMSEA = 0.044 (.041 to.046). Measurement model also supported this construct, indicating an acceptable fit: $\chi 2(794) = 1531$, p < 0.001, $\chi 2$/df = 1.93, TLI = 0.948, CFI = 0.954, SRMR = 0.052, and RMSEA = 0.040 (0.037, 0.042) (see Table 12). Both the measurement and structural models showed that the proposed model had an acceptable measurement and structural validity, confirmed by Hair et al. (2019), Kline (2016), and Tabachnick and Fidell (2018).

Table 14

A standardised indirect effect of PsyCap on teacher well-being (total and dimensions) mediated through dimensions of motivation

Predictor **Mediator**	**DV**	**Standardised indirect effect**	**Bootstrap 95% CI**		
			LBC	**UBC**	**P-value**
PsyCap → IM, IR, ER,	WWB	–0.664	–0.779	–0.429	0.05
ITR, AM →	OWB	–0.711	–0.894	–0.507	0.01
	SIWB	–0.453	–0.608	–0.244	0.05
PsyCap → IM →	WWB	–0.178	–0.521	-0.057	0.01
	OWB	–0.166	–0.453	-0.065	0.01
	SIWB	–0.093	–0.326	-0.000	NS
PsyCap → IR →	WWB	–0.160	–0.007	–0.211	0.05
	OWB	–0.229	–0.006	–0.177	0.001
	SIWB	–0.054	–0.009	–0.225	NS
PsyCap → ER →	WWB	–0.253	–0.565	–0.103	0.001
	OWB	–0.252	–0.572	–0.107	0.001
	SIWB	–0.161	–0.457	–0.045	0.01
PsyCap → ITR →	WWB	–0.026	–0.108	–0.000	NS
	OWB	–0.037	–0.124	–0.004	NS
	SIWB	–0.020	–0.085	–0.000	NS
PsyCap→ AM →	WWB	–0.144	–0.418	–0.029	0.01
	OWB	–0.172	–0.458	–0.058	0.001

	SIWB	–0.090	–0.328	–0.007	NS
PsyCap → WTM →	TWB	0.110	0.006	0.206	0.05

Note. AM=amotivation; CI=confidence interval; ER=external regulation= identified regulation; IM=intrinsic motivation= introjected regulation LBC=lower bound; NS=statistically not significant; OWB= organization well-being; PsyCap=Psychological Capital; $R^{2=}$ Regression model; SIWB=student interaction well-being; TWB=teacher well-being; UBC=upper bound;WTM= Work task motivation, WWB=workload well-being.

5.2.1.2. Discussion of Study Two

Due to the complex nature of the teaching profession, teachers face several challenges in their daily work life (McCallum et al., 2017). Moreover, failure to manage their tasks affects their organization and relationship with their students, administrators, and staff (Zewude & Hercz, 2021a). Hence, the literature suggests that positive psychology can play a crucial role, including motivational strategies and positive psychological resources to foster TWB and maintain healthy functioning in the workplace (e.g., Luthans et al., 2015; Selvaraj & Bhat, 2018; Zewude & Hercz, 2021a).

This study found that PsyCap was a positive predictor for WTM among teachers, and its relationship with TWB was positive and significant. In addition, WTM positively predicted TWB. The results also found that WTM positively and significantly mediated PsyCap and TWB. Thus, WTM fully mediated the relationship between PsyCap and TWB. Furthermore, the structural and measurement model met the global cutoff points, indicating that various methods confirmed the mediation model.

The second mediation model of the study took the workload, organizational, and student interaction well-being as dependent variables, with PsyCap as the predictor variable and dimensions of WTM as mediator variables. This study also found that PsyCap was a positive predictor for workload, organizational, and student interaction well-being, as well as intrinsic motivation and identified regulation. By contrast, it was a negative predictor of external regulation, introjected regulation, and amotivation.

The direct effects of intrinsic motivation on workload and student interaction well-being were significant and positive but had no direct effect on organizational well-being.

Additionally, identified regulation had a negative and significant direct effect on organizational well-being but did not directly affect workload and student interaction well-being. Furthermore, external regulation, introjected regulation and amotivation showed a positive and significant direct effect on workload well-being, organizational well-being, and student interaction well-being.

The indirect effects of PsyCap through intrinsic motivation, identified regulation, external regulation, introjected regulation, and amotivation on workload and organizational and student interaction well-being were significant. The measurement and structural model of this mediation model, assessed through intrinsic motivation, identified regulation, external regulation, introjected regulation, and amotivation, exhibited an acceptable fit (Hair et al., 2019; Kline, 2016; Tabachnick & Fidell, 2018). Previous findings supported our hypotheses as well. For example, Luthans et al. (2015) showed that helping psychologically healthy people and encouraging them to be more productive, using their inner potential, leads to them being happy and, consequently, enables them to build personal resources (Luthans et al., 2015). Therefore, this study used the positive psychological theory by Seligman (2011) and the SDT of Ryan and Deci (2017) as a guiding theoretical framework. The structural model of this study was tested using the directed and indirect effects of PsyCap on TWB through the WTM of teachers. We examined the potential role of a PsyCap and the motivation to foster TWB. To the best of our knowledge, no similar studies have been conducted in the education context, particularly not any that examined university teachers. Our study filled this gap.

Specifically, we found that PsyCap, intrinsic motivation, and identified regulation directly and positively affected TWB. By contrast, external regulation, introjected regulation, and amotivation negatively affected TWB, which implies that when workload, organizational and student interaction well-being increases, these motivation dimensions decrease. Our findings supported the previous studies on WTM, PsyCap, and well-being (e.g., Datu et al., 2018; Fernet et al., 2008; Ferraro et al., 2018; Milyavskaya & Koestner, 2011; Ryan & Deci, 2017; Youssef-Morgan & Luthans, 2015; Zewude & Hercz, 2021). In addition, Zewude and Hercz (2021) found a significant and positive relationship between PsyCap and organizational, student interaction well-being, and TWB.

Thus, in this study on PsyCap, TWB and WTM were investigated by establishing an integrated, fresh, and novel model following the emerging theoretical perspective of TWB presented by Collie et al. (2015), the SDT of motivation (Ryan & Deci, 2017), and the theory

of positive psychology of Seligman (2011), combined in an approach that is relevant for today's higher education.

5.2.2. Study Three: Psychometric Properties of Coping with Stress Questionnaire and Its Mediation Role between Psychological Capital and Teacher Well-being

5.2.2.0 Introduction

This sub-study is the second part of the main study examining the Psychometric properties of Coping With Stress (CWS) and its mediation role in the relationship between Psychological Capital (PsyCap) and Teacher Well-Bing (TWB). There are three crucial parts addressed in this sub-study. The first component is about the Psychometric properties of the adapted Coping With Stress Questionnaire (CWS-Q) to address the coping strategies used by university teachers. This section is presented in the validation section to avoid redundancy. Second, the mediation role of CWS in the relationship between PsyCap and TWB. The third section of this sub-study presented the mediation role of coping through change, acceptance and withdrawal in the relationship between Psycap and workload, organizational and student interaction well-being. Finally, the findings were discussed carefully with supported literature evidence.

5.2.2.1. Correlation

Addressing RH7: (a) PsyCap will be positively associated with the total and dimension of CWS and TWB, and (b) total and dimension of CWS will be positively associated with the total and dimension of TWB.

In this sub-study, the following four major components were addressed: (a) the psychometric evaluation of CWS-Q presented in the validation section, (b) the association among the variables, (c)the direct effect of PsyCap on CWS, TWB, coping through change, acceptance and withdrawal; the direct effect of CWS on TWB and its mediation role in the relationship between PsyCap and TWB, (d) the direct effect of coping through change, acceptance and withdrawal on the dimensions of TWB and their mediation role in the relationship between PsyCap and dimensions of TWB are clearly stated.

To answer the research hypothesis 7 (RH7), the bi-variate correlation was performed to examine the relationship between variables. Supporting Hypothesis 7, the findings of this

study confirmed a significant positive correlation between PsyCap and organisational well-being ($r=0.126$, $p<0.01$), student interaction well-being ($r=0.267$, $p<0.01$) and total TWB ($r=0.167$, $p<0.01$). However, no significant correlations were found between PsyCap and workload well-being. A significant positive relationship is found between PsyCap and coping through acceptance ($r=0.266$; $p<0.01$), coping through change ($r=-0.272$; $p<0.01$) and total coping with stress ($r=-0.300$; $p<0.01$), but not coping through withdrawal ($r=-0.016$; $p>0.05$).

Moreover, coping through acceptance was positively correlated to student interaction well-being ($r=0.188$; $p<0.01$) and teacher well-being ($r=0.116$; $p<0.01$). However, it had no significant correlation with workload and organisational well-being. A significant and positive correlation was found between coping through change and organizational wellbeing ($r=0.087$; $p<0.01$), student interaction wellbeing ($r=0.180$; $p<0.01$) and teacher wellbeing ($r=0.100$; $p<0.01$). Surprisingly, coping through withdrawal also had a positive correlation with student interaction well-being ($r=0.092$; $p<0.01$) and total teacher well-being ($r=0.086$; $p<0.05$). Coping with stress was positively correlated with workload wellbeing ($r=0.082$; $p<0.05$), organizational wellbeing ($r=0.110$; $p<0.01$), student interaction wellbeing ($r=0.0266$; $p<0.01$) and teacher wellbeing ($r=0.175$; $p<0.01$).

Finally, coping through acceptance had a positive and significant correlation with coping through change ($r=0.607$, $p<0.01$) and was negatively correlated with withdrawal ($r=-0.333$, $p<0.01$). The correlation between coping through change with withdrawal was also negative and significant ($r=-0.270$, $p<0.01$).

Table 15

Variables, descriptive statistics (M, SD), and correlations (r) among all the study constructs

Variables	M	SD	Sk	Ku	1	2	3	4	5	6	7	8	9	10	11	12	13
1. EF	13.2	2.6	-.32	.01	1	.586**	.317**	.310**	.771**	.045	.047	.230**	.145**	.191**	.188**	-.026	.203**
2. Ho	17.2	3.6	-.53	.20		1	.317**	.296**	.818**	.058	.095**	.210**	.160**	.225**	.239**	.016	.276**
3.Op	9.11	1.8	-.57	.11			1	.411**	.622**	.043	.160**	.133**	.127**	.216**	.191**	-.005	.231**
4.Rs	13.0	2.8	-.45	-.11				1	.678**	-.051	.087*	.190**	.053	.149**	.168**	-.040	.160**
5.PsyCap	52.5	8.0	-.12	-.01					1	.033	.126**	.267**	.167**	.266**	.272**	-.016	.300**
6.WWB	30.5	4.9	-.39	.14						1	.279**	.159**	.811**	.039	.035	.067	.082*
7,OWB	25.7	5.1	-.27	.67							1	.214**	.611**	.049	.087*	.055	.110**
8.SIWB	14.9	4.0	-.29	-.52								1	.539**	.188**	.180**	.092**	.266**
9.TWB	84.5	10.9	-.11	.03									1	.116**	.100**	.086*	.175**
10.AC	12.2	3.6	-.43	-.46										1	.607**	-.333**	.734**
11.Ch	12.6	3.5	-.61	-.09											1	-.270**	.760**
12.Wd	6.5	3.7	1.5	1.9												1	.241**
13.CWS	31.4	6.2	-.20	.35													1

Note. **p<0.001(2-tailed); *p<0.05(2-tailed); M=mean; SD=standard deviation; Sk=skewness; Ku=kurtosis; EF=efficacy; Ho=hope; Op=optimism; Rs=resilience; PsyCap=psychological capital; WWB=workload wellbeing; OWB=organizational wellbeing; SIWB=student interaction wellbeing; TWB=teacher wellbeing; Ac=acceptance; Ch=change; Wd=withdrawal; CWS=coping with stress

Table 16

CFA of the scales, the measurement model, and the structural model of the constructs

Fit indices	CFAs of scales (Correlated factor model)			Main constructs (Figure 15)		Rule of thumb
	PsyCap	CWS	TWB	Measurement model	Structural model	
$\chi 2$	264	104	296	1326	1326	
df	48	24	101	616	616	
P-Value	0.001	0.001	0.001	0.001	0.001	
$\chi 2$/df	4.91	4.34	2.9	2.15	2.15	≤5
GFI	0.952	0.973	0.958	0.920	0.920	≥0.90
AGFI	0.922	0.950	0.943	0.908	0.908	≥0.90
RFI	0.929	0.976	0.945	0.923	0.924	≥0.90
TLI	0.941	0.981	0.963	0.957	0.958	≥0.90
CFI	0.957	0.988	0.969	0.961	0.962	≥0.95
SRMR	0.047	0.058	0.039	0.064	0.064	≤0.08
RMSEA	0.074 (0.065–0.082)	0.063 (0.051–0.076)	0.048 (0.042–0.055)	0.074 (0.065–0.082)	0.037 (0.034–0.040)	≤0.08
	Model 1-A	Model 2-C	Model 3-W	Model 4-All (Figure 16)		Rule of thumb

	Measurement model	Structural model	Measurement model	Structural model	Measurement model	Structural model	Measurement model	Structural model	
$\chi 2$	833	875	861	902	1115	906	1181	1326	
df	406	417	406	418	468	417	620	616	
P-value	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
$\chi 2$/df	2.05	2.09	2.12	2.12	2.38	2.17	1.90	2.15	≤5
GFI	0.941	0.937	0.938	0.935	0.926	0.935	0.931	0.920	≥0.90
AGFI	0.927	0.926	0.925	0.923	0.911	0.923	0.918	0.908	≥0.90
RFI	0.931	0.930	0.927	0.925	0.915	0.931	0.929	0.924	≥0.90
TLI	0.963	0.962	0.960	0.958	0.951	0.961	0.965	0.958	≥0.95
CFI	0.968	0.966	0.965	0.963	0.955	0.965	0.969	0.962	≥0.95
SRMR	0.036	0.044	0.038	0.046	0.066	0.046	0.041	0.064	≤0.08
RMSEA	0.035 (0.032–0.039)	0.036 (0.033–0.040)	0.037 (0.033–0.040)	0.034 (0.033–0.040)	0.041 (0.038–0.044)	0.037 (0.034–0.041)	0.033 (0.030–0.036)	0.037 (0.034–0.040)	≤0.08

Note. GFI=Goodness of Fit Index; AGFI=Adjusted Goodness-of-Fit Index; RFI=Relative Non-centrality Index; TKI=Tucker-Lewis Index; CFI=Comparative Fit Index; SRMR=Standardized Root Mean Square Residual; RMSEA=Root Mean Squared Error of Approximation
Model 1-A: PsyCap on teachers' workload, organisational, and student interaction well-being mediated by coping through acceptance.
Model 2-C: PsyCap on teachers' workload, organisational, and student interaction well-being mediated by coping through change.
Model 3-W: PsyCap on teachers' workload, organisational, and student interaction well-being mediated by coping through withdrawal.
Model 4-All: PsyCap on teachers' workload, organisational, and student interaction well-being mediated by coping through acceptance, change, and withdrawal

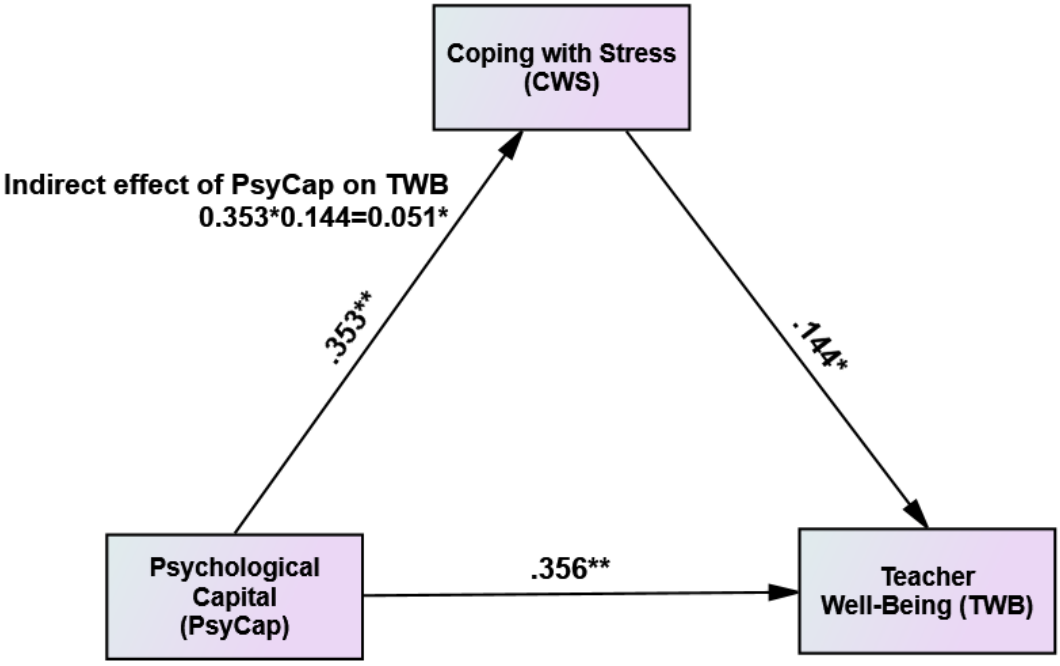
5.2.2.2. Mediation Analysis

RH_8: PsyCap predicted CWS and TWB, and (b) CWS as a positive predictor of TWB and mediated the relationship between PsyCap and TWB.

Structural Equation Modeling (SEM) was employed to test the direct and indirect effect of the independent variable on the dependent variable to address this research hypothesis. In addition, structural and measurement models were performed in each meditation analysis to ensure whether the model was fit or not. Therefore, this study examined the mediating role of CWS as a link between PsyCap and TWB (see Table 18). The direct effect model (PsyCap) is compared to another direct and indirect model (with mediators). The best structural equation model requires specifying the relationships, examining causations, and developing the models (structural and measurement models) recommended by Hair et al. (2019). For instance, the fit between the two models in the mediation analysis was used in this study. Comparing the direct and indirect effect model with the dimensional construct's direct and indirect effect showed a good model fit. To measure the precision of prediction obtained with the structured model, we examined the proportion of variance explained by the predictor variables (i.e., R^2). The mediation models are presented in Figures 18 and 19.

Figure 18.

CWS mediates the Relations between PsyCap and TWB



Adapted from Zewude & Hercz (2021a, p.1239)

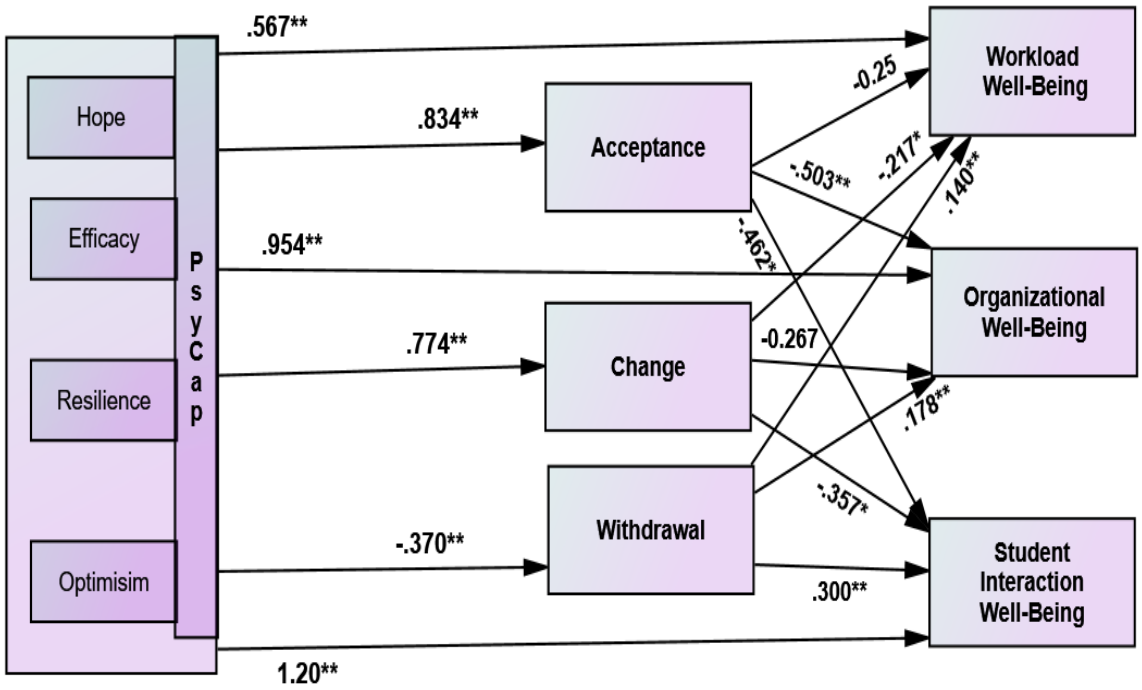
As displayed in Table 17, PsyCap explains 18.4 per cent and 12.5 per cent of the variance of TWB and CWS, respectively. The model accounts for 58.4 per cent of the variance of student interaction well-being, 11.3 per cent of organisational well-being, and 4.3 per cent of workload well-being. The predictor variables' direct and indirect effects on the criterion variables were analysed and presented (see Figures 18 and 19, Tables 17 and 18). The result shows that the standardised direct effect path from PsyCap to CWS (β=0.353, [BC 95% bootstrap CI: -0.260–0.442], p<0.01) and TWB (β=0.356 [95% bootstrap CI: 0.230–0.492], p<0.01) were positive and significant, which supports the stated hypothesis 8(RH8a). Furthermore, CWS has a significant and positive direct effect on TWB (β=0.144 [95% bootstrap CI: 0.0.021–0.272], p<0.01), which supports the stated RH8b.

Furthermore, the indirect effect of PsyCap (see Figure 18) on teachers' well-being mediated through coping with stress was positive and significant (β=0.051, 95% bootstrap CI [0.010–0.100], p<0.05). The measurement and the structural model of this meditation were tested to prove the sound psychometrics. As a result, the structural model of this mediation indicates a good model fit: $\chi 2(616) = 1327$, p<0.001, $\chi 2/df = 2.15$, GFI=0.920, AGFI=0.908, RFI=0.924, TLI=0.958, CFI=0.962, SRMR=0.064, and RMSEA=0.037(0.034–0.040) (see Table 16). Moreover, the measurement model's goodness of fit is acceptable; $\chi 2\ (616) = 1327$, p<0.001, $\chi 2/df = 2.15$, GFI=0.920, AGFI=0.908, RFI=0.923, TLI=0.957, CFI=0.961, SRMR=0.064, and RMSEA=0.037(0.034–0.040). The findings of this result are confirmed by the recommendation of Hair et al. (2019); Kline (2016) and Tabachnick & Fidell (2018).

RH_9: *(a) PsyCap would predict Coping through acceptance, coping through change positively and coping through withdrawal negatively, (b) positively predicted the dimensions of TWB, (c)Coping through acceptance and coping through change positively, and (d) coping through withdrawal negatively would directly affect and mediate the relationship between PsyCap with workload well-being, student interaction well-being and organizational well-being.*

Figure 19.

PsyCap direct and indirect effect on teacher well-being dimensions through coping through acceptance, change and withdrawal



Adapted from Zewude & Hercz (2021a, p. 1240)

The next step was testing our proposed model by considering workload well-being, organisational well-being and student interaction well-being as the dependent variables, PsyCap as the predictor variable, and coping through acceptance, change and withdrawal as the mediator variables. The standardized direct beta coefficients from PsyCap to coping through acceptance β=0.834 [95% bootstrap CI: 0.777–0.888], p<0.01 and coping through change β=0.774 [95% bootstrap CI: 0.714–0.834], p<0.01 are positive and significant, which support hypothesis RH9a. Furthermore, PsyCap has a negative and significant direct effect on coping through withdrawal (β=-0.370 [95% bootstrap CI: -0.445– -0.290], p<0.01) (supporting hypothesis RH9a). Also, the study found a significant and positive direct effect of PsyCap on workload wellbeing (β=0.567 [95% bootstrap CI: 0.142–0.867], p<0.01), organizational wellbeing (β=0.954 [95% bootstrap CI: 0.258–0.015], p<0.01), and student interaction wellbeing (β=1.19 [95% bootstrap CI: -0.750–3.60], p<0.01). The above findings confirmed the stated hypothesis 9RHb.

Surprisingly, coping through acceptance (RH9c) has a negative and significant direct effect on organizational wellbeing (β= -0.503 [95% bootstrap CI: -0.968– -0.120], p<0.01), and student interaction wellbeing (β= -0.462 [95% bootstrap CI: -1.88–0.160], p<0.05) but not on workload wellbeing (β= -0.250 [95% bootstrap CI: -0.517– -0.011], p>0.05). Coping through change also directly and negatively affects workload wellbeing (β= -0.217 [95% bootstrap CI: -0.412– - 0.050], p<0.05) and student interaction wellbeing (β= -357 [95% bootstrap CI: -1.16– -0.103], p<0.05). However, it has no significant direct effect on organizational wellbeing (β= -0.267 [95% bootstrap CI: -0.574–0.020], p>0.05). Moreover, coping through withdrawal (RH9d) has a positive and significant direct effect on workload wellbeing (β=0.140 [95% CI: 0.073–0.218], p<0.001), organizational wellbeing (β=0.178 [95% bootstrap CI: 0.106–0.278], p<0.001), and student interaction wellbeing (β=300 [95% bootstrap CI: 0.200–0.417], p<0.01).

The indirect effect of PsyCap through coping with acceptance, change and withdrawal is significant to workload wellbeing (β= -0.428 [95% bootstrap CI: -0.690– -0.080], p<0.05), organizational wellbeing (β= -0.693 [95% bootstrap CI: -1.16– -0.122], p<0.01), and student interaction wellbeing (β= -0.772 [95% bootstrap CI: -2.72– -0.400], p<0.01) which supports hypothesis 9 of this study.

Table 17

A standardised direct effect of PsyCap and coping with stress (total and dimensions) on teacher well-being (total and dimensions)

Outcome variables	**Path**	**Predictors**	**Standardised direct effect**	**Bootstrap 95% CI**		
				Lower bound (LBC	**Upper bound (UBC)**	**p-value**
Acceptance	←	PsyCap	0.834	0.778	0.889	0.01
Change	←	PsyCap	0.774	0.714	0.834	0.01
Withdrawal	←	PsyCap	-0.370	-0.445	-0.290	0.01
Student interaction Well-being ($R^{2=}$584)	←	PsyCap	1.20	0.750	3.60	0.01
Organisational well-being ($R^{2=}$0.113)	←	PsyCap	0.954	0.258	1.50	0.01

Workload well-being ($R^{2=}$0.043)	←	PsyCap	0.567	0.142	0.867	0.01
Student interaction well-being	←	Acceptance	-0.462	-1.88	-0.160	0.05
Organisational well-being	←	Acceptance	-0.503	-0.968	-0.120	0.01
Workload well-being	←	Acceptance	-0.250	-0.517	-0.010	NS
Student interaction well-being	←	Change	-0.357	-1.16	-0.103	0.05
Organisational well-being	←	Change	-0.267	-0.574	0.020	NS
Workload well-being	←	Change	-0.217	-0.412	-0.050	NS
Student interaction well-being	←	Withdrawal	0.300	0.200	0.417	0.01
Organisational well-being	←	Withdrawal	0.178	0.106	0.278	0.001
Workload well-being ($R^{2=}$0.472)	←	Withdrawal	0.140	0.073	0.218	0.001
Total Constructs						
Coping with stress ($R^{2=}$0.125)	←	PsyCap	0.353	0.260	0.442	0.01
Teacher well-being ($R^{2=}$=0.287)	←	PsyCap	0.356	0.230	0.492	0.01
Teacher well-being	←	Coping with Stress	0.144	0.210	0.272	0.05

Note. **p<0.01(2-tailed, statistically significant); LBC=lower bound; UBC=upper bound; PsyCap= psychological capital; R^2 =Regression.

The mediation model through coping with acceptance, change and withdrawal indicates an acceptable model fit: $\chi 2$ (616) =1326, p<0.001, $\chi 2$/df=2.15, GFI=0.920, AGFI=0.908, RFI=0.924, TLI=0.958, CFI=0.962, SRMR=0.064, and RMSEA=0.037(0.034–0.040). The measurement model supported this construct, indicating an acceptable fit: $\chi 2$(654)=1181, p<0.001, $\chi 2$/df=1.90, GFI=0.931, AGFI=0.918, RFI=0.929, TLI=0.965, CFI=0.969, SRMR=0.041, and RMSEA=0.033(0.030–0.036), and indicating that the model has acceptable structural validity, which is confirmed (Hair et al., 2019; Kline, 2016; Tabachnick & Fidell, 2018) recommendations.

Specifically, the indirect effect of PsyCap on workload wellbeing, organizational wellbeing, and student interaction wellbeing through coping with acceptance is significant (β= -0. 116 [95% bootstrap CI: -0.319– -0.030], p<0.01), (β= -0.202 [95% bootstrap CI: -0.506– -0.082], p<0.05), and (β=0.466 [95% bootstrap CI: -0.466– -0.056], p<0.05, respectively). The mediating structural model through coping with acceptance indicates an acceptable fit: $\chi 2(417) = 406$, p<0.001, $\chi 2/df = 2.09$, GFI=0.937, AGFI=0.926, RFI=0.930, TLI=0.962, CFI=0.966, SRMR=0.044, and RMSEA=0.036(0.033–0.040). Also, the measurement model indicates an acceptable fit: $\chi 2(406) = 833$, p<0.001, $\chi 2/df = 2.05$, GFI=0.941, AGFI=0.927, RFI=0.931, TLI=0.963, CFI=0.968, SRMR=0.036, and RMSEA=0.035(0.032–0.039).

PsyCap also had a significant indirect effect on workload, organizational, and student interaction wellbeing through coping with change— (β= -0.132 [95% bootstrap CI: -0.346– -0.045], p<0.01), (β= -0.175 [95% bootstrap CI: -0.455– -0.065], p < 0.01), and (β= -0.212 [95% bootstrap CI: -0.506– -0.082], p<0.01), respectively—which supports H32 of this study. The structural model shows good fitness of indices: $\chi 2(418)=902$, p<0.001, $\chi 2/df = 2.16$, GFI=0.935, AGFI= 0.923, RFI=0.925, TLI=0.958, CFI= 0.963, SRMR=0.046, and RMSEA=0.037(0.034–0.041), and the measurement model indicates an acceptable fit: $\chi 2(406)=861$, p<0.001, $\chi 2/df = 2.12$, GFI= 0.938, AGFI= 0.925, RFI= 0.927, TLI= 0.960, CFI= 0.965, SRMR= 0.038, and RMSEA=0.037(0.033–0.040).

Finally, the indirect (mediated) effect of PsyCap on workload wellbeing organizational wellbeing and student interaction wellbeing mediated through coping through withdrawal was negative but statistically insignificant (β= -0.002 [95% bootstrap CI: -0.032–0.006], p<0.05), (β= -0.002 [95% bootstrap CI: -0.035–0.006], p<0.05), and (β= -0.004 [95% bootstrap CI: -0.064–0.007], p<0.05). This finding indicates that coping through withdrawal does not mediate the relationship between PsyCap and workload, organisational, and student interaction well-being.

Table 18

A standardised indirect effect of PsyCap on teacher well-being (total and dimensions) mediated through CWS, coping with acceptance, change, and withdrawal

Mediator	DV	Standardised indirect effect	Bootstrap 95% CI		
			LBC	UBC	p-value
PsyCap →Acceptance,	SIWB	-.772	-2.732	-.400	0.01
Change and Withdrawal	OWB	-.693	-1.161	-.122	0.01
→	WWB	-.428	-.690	-.080	0.05
PsyCap →Acceptance →	SIWB	-.212	-.466	-.056	0.05
	OWB	-.202	-.506	-.082	0.01
	WWB	-.116	-.319	-.030	0.05
PsyCap →Change →	SIWB	-.260	-.643	-.106	0.01
	OWB	-.175	-.455	-.065	0.01
	WWB	-.132	-.346	-.045	0.01
PsyCap →Withdrawal	SIWB	-.004	-.064	.007	NS
→	OWB	-.002	-.035	.006	NS
	WWB	-.002	-.032	.006	NS
PsyCap →CWS →	TWB	0.051	0.10	0.10	0.05

Note. R^2; *ρ<0.05; **ρ<0.01, NS=statistically not significant; CI=confidence interval; LBC=lower bound; UBC=upper bound; CWS=coping with stress; SIWB=student interaction well-being; OWB= organizational well-being; WWB=workload well-being

However, the structural model shows good fitness of indices: $\chi2(417)=906$, $p<0.001$, $\chi2/df=2.17$, GFI=0.935, AGFI=0.923, RFI=0.931, TLI=0.961, CFI=0.961, SRMR=0.046, and RMSEA=0.037(0.034–0.041), and the measurement model also indicates an acceptable fit: $\chi2(468)=1115$, $p<0.001$, $\chi2/df=2.38$, GFI=0.926, AGFI=0.911, RFI=0.915, TLI=0.949, CFI=0.955, SRMR=0.066, and RMSEA=0.041(0.038–0.044). We have tangible evidence to conclude that the structural and measurement model supports the proposed hypotheses (H30-H33). GFI, AGFI, RFI, TLI, and CFI scores of 0.90 and above indicate a good model fit. This study, supported by Hair et al. (2019) and Kline (2016), recommended GFI, AGFI, RFI, TLI,

and CFI values above 0.90 for the structural model fit to test the mediated effects; the $\chi 2/df$ value ≤ 5 is acceptable, whereas the value ≥ 0.95 and $\chi 2/df$ value < 3 should be a good fit.

5.2.2.3. Discussion of Study Three

This study explored the mediating role of coping with stress between PsyCap and TWB and the direct effect of PsyCap and coping with stress on TWB using the SEM bootstrap method. Furthermore, we examined the mediating roles of coping with acceptance, change, and withdrawal between PsyCap and TWB and the direct and indirect effects on the dimensions of teacher well-being. Examining the potential role of PsyCap and CWS in fostering TWB is novel research. To the authors' knowledge, there are no findings in the Ethiopian or African context, particularly for university teachers, leading to a knowledge gap. Before assessing the mediation model, this study established the measurement model's validity and reliability to all primary constructs to ensure psychometric properties. Normality distribution, bivariate correlation, Cronbach's alpha, construct validities of the TWBS, the PCQ-12, and the CWS-Q scales were examined and showed good psychometric properties.

Thus it is relevant for today's higher education teachers and applicable in educational psychology to conduct a study on positive PsyCap and its association with TWB and CWS by establishing an integrated, fresh and novel model following PsyCap of Luthans et al. (2015), conservation resource theory (Hobfoll, 2002), the emerging theory of teacher wellbeing (Collie et al., 2015), and the coping with stress and appraisal theory of Lazarus & Folkman (1984).

As hypothesized, the structural model in this study tested the direct and indirect (mediated) effects of PsyCap and CWS on TWB (Figure 18) and examined the direct and indirect effects of PsyCap on the dimensions of TWB mediated by coping through acceptance, change and withdrawal (Figure 19). We found a significant and positive relationship between PsyCap and organizational well-being, student interaction wellbeing, and total teacher wellbeing, and a positive correlation with coping through acceptance, coping through change, and total coping with stress (supporting 7a). However, PsyCap has no significant correlations with workload well-being and coping through withdrawal. Studies demonstrate a substantial and significant positive relationship between PsyCap and well-being (Rabenu et al., 2016) and a negative association with negative outcomes (Avey et al., 2010).

In this study, coping through acceptance positively correlates with student interaction well-being and teacher well-being, but it has no significant correlation with workload and

organizational well-being. A significant and positive correlation was found between coping through change and organizational well-being, student interaction well-being and TWB, but not workload well-being. Surprisingly, coping through withdrawal positively correlates with student interaction well-being and total TWB. In addition, a positive correlation was found between coping with stress and workload, organisation, student interaction well-being and teacher well-being. In contrast, Rabenu et al. (2016) did not find that coping through acceptance and withdrawal significantly correlated with well-being and coping through change was only positively associated with well-being. These differences between the current study and the previous findings may be due to cultural differences, strategies used to handle stressors in the working life, and other context-based variables. Nevertheless, these results are consistent with the studies by Rabenu et al. (2016) and Rabenu and Yaniv (2017).

CWS significantly mediates between PsyCap and TWB, supporting RH8b. PsyCap also has a positive and significant direct effect on CWS. PsyCap also has a significant and positive direct effect on TWB, supporting RH2b. The direct effect of CWS is also significant and positively affects TWB. Several findings supported our results. For example, coping with stress mediates the relationship between PsyCap and employees' well-being (Rabenu et al., 2016). The study design is based on positive psychology theory (Seligman et al., 2000), conservation theory (Hobfoll, 2002), and the broaden-and-build theory (Fredrickson, 2004c) and is of paramount significance to university teachers.

The broaden-and-build theory suggests that positive emotions broaden people's thinking and healthy longevity fuels psychological resilience, builds significant personal resources, triggers and fosters well-being, and seeds human flourishing. Positive psychology is also focused on helping healthy people be happier and more productive and actualizing human potential. The COR theory also shows the potential of resources to help individuals attain goals, better cope with difficulties they face in the workplace, and move towards nurturing and optimizing their resources.

The analysis model assumed that the PsyCap capacities of optimism, self-efficacy, resilience and hope would function as potential resources for CWS since coping evolves from resources that precede and influence coping (Biggs et al., 2017; Rabenu et al., 2016). In addition, literature has also found that PsyCap's positive role and function have the potential to attain optimal functioning in the workplace (Luthans et al., 2015).

According to Rabenu et al. (2016), psychological resources may boost individuals adapt to their lives, manage things more positively, and expect positive workplace outcomes. Furthermore, PsyCap impacts employees' well-being and performance more significantly than each sub-dimension (Rabenu et al., 2016). For instance, a study conducted by Luthans et al. (2005) found that PsyCap as a possible resource leads individuals to be more confident, resulting in higher performance; to be more motivated to perform challenging tasks; to generate solutions, and to choose the best alternative pathways when facing challenges. Li (2018) also argued that teachers' PsyCap is a vital ingredient in the positive relationship between teaching, organisation, and relations with students.

Rabenu et al. (2016) argued that psychological resources are highly associated with high-stress resistance and better employee well-being and performance. In line with this, Ding et al. (2015) noted the mediating role of coping with stress between PsyCap resources and burnout among Chinese nurses.

As shown in Figure 19, coping through acceptance, change and withdrawal together significantly mediate between PsyCap and workload well-being, organisational well-being, and student interaction well-being. PsyCap also has a significant and positive direct effect on coping through acceptance and coping through change, whereas it has a negative and significant predictor of coping through withdrawal (supporting RH9a). PsyCap also shows a significant and positive direct effect on workload, organisational, and student interaction. The above findings confirm the stated RH9b.

The existing literature indicated that coping was mediating between individual resources and outcome variables. For instance, Luthans et al. (2015) and Youssef and Luthans (2015) argued that self-efficacy, hope, resilience and optimism (PsyCap) significantly and positively predict well-being and are related to desirable outcomes in the workplace. In addition, Bryden et al. (2015) studied the mediating role of coping with stress between adverse life events and psychological well-being.

Surprisingly, coping through acceptance (hypothesis 9c) negatively affects organisational and student interaction well-being but not workload well-being. Coping through change (hypothesis 9c) also affects workload and student interaction directly and negatively. However, it has no significant direct effect on organisational well-being. Coping through withdrawal (hypothesis 9d) positively and significantly affects workload well-being, organisational well-

being, and student interaction well-being. This finding is contrary to Rabenu et al. (2016). PsyCap's indirect effect through coping with acceptance, change and withdrawal was significant for workload well-being, organisational well-being, and student interaction well-being. The model has acceptable and confirmed structural and measurement validity (Hair et al., 2019; Kline, 2016; Tabachnick & Fidell, 2018).

In addition, we have examined the indirect effect of each dimension of CWS on the main components of TWB. As a result, coping with acceptance and coping with change significantly mediate PsyCap and workload well-being, organisational well-being, and student interaction well-being. However, coping through withdrawal has no indirect effect on workload well-being, organisational well-being, and student interaction well-being. The structural and measurement models of acceptance, change and withdrawal have a good model fit. Hair et al. (2019) and Kline (2016) recommended a structural model fit to test the mediated effects of GFI, AGFI, RFI, TLI, and CFI ≥ 0.90, and $\chi 2/df$ value ≤ 5, whereas values ≥ 0.95 and less than 3, respectively, should be a good model fit. Similarly, Rabenu et al. (2016) found that coping through change and acceptance mediated the relationship between PsyCap and well-being. Coping with stress contributes to physical and psychological health (Park & Adler, 2003).

The differences observed in this study and the previous literature may be cultural and institutional. In Ethiopia, university teachers have no opportunity to foster their well-being and cope with the problems they face in their daily lives. According to the World Bank report (2017), teachers suffer from aimless meetings and invest their energy and resources in routine tasks rather than professional issues.

5.2. 3 Study Four: Psychological Capital and Teacher Well-being: the Mediation Role of Work Task Motivation and Coping with Stress

5.2.3.0 Introduction

To address our hypotheses and the linking between Psychological Capital (PsyCap) and Teacher Well-Being (TWB) mediated through both Work Task Motivation (WTM) and Coping With Stress (CWS), we developed a comprehensive l mediational model of the main factors, which included studies 2 and 3. In addition, the role differences among socio-demographic factors as suggested as a gap in study 3 by Zewude & Hercz (2021a) on the four study main variables examined. Finally, the findings of this study are discussed with literature evidence.

5.2.3.1. Bi-variate Correlation

Addressing RH10: PsyCap positively correlates with WTM, CWS, TWB and socio-demographic factors (Ferraro et al., 2018; Zewude et al., 2021, 2022).

For this research hypothesis, we used the bi-variate correlation to confirm whether a relationship is found among variables or not. These variables' relationship was examined in studies 2 and 3. However, in this study, we added the socio-demographic factors, which is essential to check and confirm. Table 19 demonstrates the construct's descriptive statistics (mean and standard deviation), the normality of distribution using kurtosis and skewness, and correlations among the main constructs. First, to select the appropriate method for statistical analysis, we checked the assumptions of the normality of the data. As a result, the assessment of data normality was an underlying assumption and prerequisite for normal data (Mishra et al., 2019). However, the central limit theorem states that when the sample size is 100 or more, violating the normality distribution is not a significant issue (Kim, 2013; Mishra et al., 2019). Therefore, a large sample size greater than or equal to 300 from the data is dependent on the absolute values of skewness and kurtosis, and skewness ≤ 2 or kurtosis ≤ 4 may be used as reference values for determining considerable normality. Moreover, the sample size increases with the decrease in standard error (Kim, 2013; Mishra et al., 2019). The values of skewness and kurtosis lie between [−2] and [+2], which is acceptable for proving the normal distribution of data (Kline, 2016; Tabachnick & Fidell, 2018).

Specifically, the skewness values of this study for TWB, PsyCap, WTM, and CWS are [.077], [−.093], [.170], and [−.245], whereas the kurtosis values for TWB, PsyCap, WTM, and

CWS are [.135], [−.079], [.507], and [.304], respectively. These values suggested that all constructs were normally distributed based on the recommended values (Kim, 2013; Mishra et al., 2019). After verifying the normality of the data, we performed a bivariate correlation to determine whether or not the socio-demographic factors are related to our study. For this reason, gender was excluded due to its non-significant relationship with the four study variables. Alternatively, after checking the correlation, parametric tests (one-way ANOVA with multi-group comparison) were performed to verify whether or not a significant difference exists between socio-demographic factors (age, level of education, university type, and experience in teaching) and TWB, PsyCap, WTM, and CWS. *Second, we examined the relationship between predictors and criterion variables* and checked the required assumptions to select appropriate statistical methods. As a result, this study conducted Pearson's correlation to verify whether or not PsyCap, teacher motivation, CWS, and TWB are correlated with demographic factors (Table 2). The findings revealed the existence of a significant correlation between age and TWB (r = 0.266, p > 0.01), PsyCap (r = 0.349, p > 0.01), teacher motivation (r = −0.083, p > 0.01), and CWS (r = 0.206, p > 0.01). University type was also significantly correlated with TWB (r = −0.064, p > 0.05), PsyCap (r = −0.160, p > 0.01), teacher motivation (r = 0.190, p > 0.01), and CWS (r = −0.133, p > 0.01). Moreover, a relationship was noted between educational qualification and TWB (r = 0.321, p > 0.01), PsyCap (r = 0.432, p > 0.01), WTM (r = −0.211, p > 0.01), and CWS (r = 0.249, p > 0.01). Another relationship was observed between teaching experience and TWB (r = 0.255, p > 0.01), PsyCap (r = 0.372, p > 0.01, teacher motivation (r = −0.233, p > 0.01), and CWS (r = 0.176, p > 0.01).

In addition, the findings confirmed that a significant positive correlation existed between PsyCap and TWB (r = 0.272, p <.01), WTM (r = 0.084, p <.01), and CWS (r =.222, p <.01), which supports H_1. Additionally, TWB displayed a positive and significant correlation with WTM (r = 0.125, p <.01) and CWS (r = 0.207, p <.01). Finally, WTM exhibited a positive and significant relationship with CWS (r = 0.064, p <.05). The study also examined the internal consistency of the variables and found that it was acceptable for all scales (Table 19).

5.2.3.2. Group Differences

RH11: There is a significant difference among socio-demographic factors (age groups, education, university type, and experience in teaching) on PsyCap, WTM, CWS and TWB.

After checking the assumption of normality and relationship, the next step verified the assumption of statistical analysis methods to select the appropriate one. Therefore, one-way ANOVA (Appendix 13) with multi-group comparison was performed to test for group differences and whether or not a difference exists in age groups, university type, level of education, and years of teaching experience to TWB, PsyCap, WTM, and CWS. Statistically significant differences were observed across age groups as demonstrated by one-way ANOVA for TWB, PsyCap, WTM, and CWS ($F(965) = 37.731$, $p = .001$; $F(965) = 67.916$, $p = .001$; $F(965) = 4.660$, $p = .01$; $F(965) = 21.431$, $p = .001$, respectively). The F-test only pointed to significant differences among the participants across age categories. Nevertheless, the study was unable to locate where the differences lay. Therefore, Tukey's pairwise comparison test was employed. Appendix 14 provides the results with the result of Tukey's post hoc tests regarding the presence of significant mean differences in age categories (between 25 and 35 years, between 36 and 45 years (mean diff = −5.143, −5.112, −2.197), and 46 years and above (mean diff = −8.014, −8.482, −4.118) for TWB, PsyCap, and CWS, respectively. Hence, the age categories between 25 and 35 (M = 65.562, 50.399, 30.915; SD = 9.602, 7.497, 5.889) were found to have significantly lower levels of TWB, PsyCap, and CWS than the age groups between 36 and 45 (M = 70.705, 55.511, 33.112; SD = 10.167, 7.608, 6.594) and aged 46 and above (M = 73.576, 58.881, 35.034; SD = 10.531, 6.371, 5.249) respectively. This means that instructors' age groups significantly differ in teachers' well-being, PsyCap, and CWS. Besides, the age categories between 25 and 35 (mean diff = 1.786) with 36–45 and 46 and above aged (mean diff = 1.168) showed a statistical significant mean difference However, in the WTM, the age categories between 25 and 35 showed higher mean scores and significant (M = 50.863; SD = 8.099) than the age groups between 36 and 45 (M = 49.077; SD = 7.982) and age 46 and above (M = 49.695; SD = 8.810). We can conclude that when the age increases, teachers' well-being, PsyCap, and CWS also increase, whereas when the age decreases, WTM decreases.

The effect of educational qualification on TWB, PsyCap, WTM and CWS was statistically significant, $F(965) = 37.7312$, $p = .001$, $F(965) = 112.186$, $p = .001$, $F(965) = 39.493$, $p = .001$, and $F(965) = 41.727$, $p = .001$, respectively. The post hoc analysis result using Tukey post hoc multiple comparisons shows that there was also a significant mean difference among bachelor and master, bachelor, and PhD (mean diff = −4.10, −4.873, 4.784, −1.188 and −11.147, −11.200, 3.176, −6.012) respectively in teachers well-being, PsyCap, WTM and CWS, respectively. Besides, Masters and PhD and above (mean diff = 7.045, −6.327) in TWB and PsyCap, respectively. However, there is no significant mean difference between Master

and PhD and in WTM and CWS. Hence, educational status of bachelor was significantly lower in teachers' well-being, PsyCap, and CWS score (M = 64.122, 48.578, 30.497; SD = 8.344, 6.420, 6.238) than Masters (M = 68.223, 53.451, 31.685; SD = 10.310, 7.9531, 5.802) and Ph.D. (M = 75.269, 59.778, 36.509, SD = 10.481, 5.682, 5.397), respectively. However, the bachelor instructors showed higher mean score (M = 53.108; SD = 8.095) followed by PhD and above holders (M = 49.932; SD = 10.935) than (M = 50.863; SD = 8.099) master holder instructors (M = 48.324; SD = 6.804) in the WTM. From the above data, one can conclude that when the educational level increases, the instructors' TWB, PsyCap, and CWS increase and their WTM decreases.

Besides, a statistically significant difference was found in TWB, PsyCap, WTM and CWS across university types and presented as follows: F (965) = 4.515, p =.01, F (965) = 13.425, p =.001, and F (965) = 20.417, p =.001 and F (965) = 17.791, p =.001, respectively. The Tukey post hoc multiple comparisons test for group comparison indicated a significant mean difference between a research university and applied university (mean diff = 2.330, 2.731) in TWB and CWS. Besides, a mean score difference was found between a research university and a general university (mean diff = 3.099, −3.786, 1.897) in PsyCap, WTM and CWS, respectively. However, research and applied universities in TWB, research and applied universities in PsyCap and WTM, and applied university and general university in CWS had no significant mean differences. On the other hand, a research university was significantly higher score in TWB, PsyCap, and CWS (M = 68.617, 53.534, 33.199, SD = 10.310, 8.322, 5.545) than the applied university (M = 67.120, 52.662, 31.302, 34.260, SD = 9.115, 7.852, 6.535) and general university (M = 66.287, 50.435, 30.468, SD = 10.915, 7.301, 5.545) respectively. However, instructors in general university have a higher level of WTM (M = 52.678, SD = 7.944) than instructors in applied university (M = 49.602, SD = 8.326) and research university (M = 48.892, SD = 7.727).

Finally, years of teaching experience were statistically significant for TWB, PsyCap, and CWS: F (965) = 17.791, p =.001; F (2.833) = 81.464, p =.001; F (965) = 37.482, p =.001, and F (965) = 15.350, p =.001, respectively. The Tukey post of test result indicated that instructors who have below 5-year teaching experience had a significant mean difference with 6–10 years (mean diff = −4.178, 4.837, 4.780, −1.289) and those above 11 years of experience (mean diff = 5.895, −6.742, 4.322, −2.461) in TWB, PsyCap, WTM and CWS, respectively. Besides, there was a significant mean difference found between instructors with 6–10 years year teaching experience and 11 years and above experience (mean diff = −1.904) in PsyCap

construct only but not in TWB, WTM and CWS. Hence, instructors had lower scores in TWB, WTM and CWS (M = 64.152, 48.527, 30.489, SD = 8.385, 6.323, 6.226) than 6–10 years (M = 68.331, 53.364, 31.778, SD = 10.449, 7.842, 5.466) and 11 years and above experience (M = 70.047, 55.269, 32.950, SD = 10.741, 8.011, 6.278), respectively. However, instructors who had below 5 years of experience had a higher level of WTM (M = 53.098, SD = 8.095) than instructors with 6 to 10 years' experience (M = 48.318, SD = 6.924) and 11 and above years of experience (M = 48.775, SD = 8.107). This implies that the higher experience in teaching is associated with better TWB, PsyCap and CWS, but the opposite in WTM.

To answer this research hypothesis, we followed some procedures that experts would recommend. First, to select the appropriate method for statistical analysis, we checked the assumptions of normality of the data. As a result, the assessment of data normality was an underlying assumption and prerequisite for normal data (Mishra et al., 2019). However, a large sample size greater than or equal to 300 from the data depends on the absolute values of skewness and kurtosis, and skewness ≤ 2 or kurtosis ≤4 may be used as reference values for determining considerable normality. Moreover, the sample size increases with the decrease in standard error (Kim, 2013; Mishra et al., 2019). Therefore, the values of skewness and kurtosis lie between [−2] and [+2], which is acceptable for proving the normal distribution of data (Kline, 2016; Tabachnick & Fidell, 2018).

Consequently, in this study, the skewness values for TWB, PsyCap, WTM, and CWS are [.077], [−.093], [.170], and [−.245], whereas the kurtosis values for TWB, PsyCap, WTM, and CWS are [.135], [−.079], [.507], and [.304], respectively. These values suggested that all constructs were normally distributed based on the recommended values (Kim, 2013; Mishra et al., 2019). After verifying data normality through skewness and kurtosis, the study conducted the bivariate correlation to determine whether or not the socio-demographic factors are related to the four study variables. For this reason, gender was excluded due to its non-significant relationship with the four study variables. Alternatively, after checking the correlation, parametric tests (one-way ANOVA with multi-group comparison) were performed to verify whether or not a significant difference exists between socio-demographic factors (age, level of education, university type, and experience in teaching on TWB, PsyCap, WTM, and CWS. Second, we examined the relationship between predictors and criterion variables and checked the required assumptions to select appropriate statistical methods. As a result, this study conducted Pearson's correlation to verify whether or not PsyCap, teacher motivation, CWS, and TWB are correlated with demographic factors (Table 2). The findings revealed the

existence of a significant correlation between age and TWB (r = 0.266, p > 0.01), PsyCap (r = 0.349, p > 0.01), teacher motivation (r = −0.083, p > 0.01), and CWS (r = 0.206, p > 0.01). University type was also significantly correlated with TWB (r = −0.064, p > 0.05), PsyCap (r = −0.160, p > 0.01), teacher motivation (r = 0.190, p > 0.01), and CWS (r = −0.133, p > 0.01). Moreover, a relationship was noted between educational qualification and TWB (r = 0.321, p > 0.01), PsyCap (r = 0.432, p > 0.01), WTM (r = −0.211, p > 0.01), and CWS (r = 0.249, p > 0.01). Another relationship was observed between teaching experience and TWB (r = 0.255, p > 0.01), PsyCap (r = 0.372, p > 0.01, teacher motivation (r = −0.233, p > 0.01), and CWS (r = 0.176, p > 0.01).

In addition, the findings confirmed that a significant positive correlation existed between PsyCap and TWB (r = 0.272, p <.01), WTM (r = 0.084, p <.01), and CWS (r =.222, p <.01), which supports H_1. TWB also had a positive and significant correlation with WTM (r = 0.125, p <.01) and CWS (r = 0.207, p <.01). Finally, WTM exhibited a positive and significant relationship with CWS (r = 0.064, p <.05). The study also examined the internal consistency of the variables and found that it was acceptable for all scales (Table 19). The next step verified the assumption of statistical analysis methods to select the appropriate one. Therefore, one-way ANOVA (Appendix 13) with a multi-group comparison test (Appendix 14) was performed to examine for group differences and whether a difference exists in terms of age groups, university type, level of education, and years of teaching experience in relation to TWB, PsyCap, WTM, and CWS. Statistically significant differences were observed across age groups as demonstrated by one-way ANOVA for TWB, PsyCap, WTM, and CWS (F (965) = 37.731, p =.001; F(965) = 67.916, p =.001; F(965) = 4.660, p =.01; F(965) = 21.431, p =.001, respectively). The F-test (Appendix 13) only pointed to significant differences among the participants across age categories. Nevertheless, the study was unable to locate where the differences lay. Therefore, Tukey's pairwise comparison test was employed. Tukey's post hoc tests (Appendix 14) indicated the presence of significant mean differences in age categories (between 25 and 35 years, between 36 and 45 years (mean diff = −5.143, −5.112, −2.197), and 46 years and above (mean diff = −8.014, −8.482, −4.118) for TWB, PsyCap, and CWS, respectively. Hence, the age categories between 25 and 35 (M = 65.562, 50.399, 30.915; SD = 9.602, 7.497, 5.889) were found to have significantly lower levels of TWB, PsyCap, and CWS than the age groups between 36 and 45 (M = 70.705, 55.511, 33.112; SD = 10.167, 7.608, 6.594) and aged 46 and above (M = 73.576, 58.881, 35.034; SD = 10.531, 6.371, 5.249) respectively. This means that instructors' age groups significantly differ in teachers' well-being, PsyCap, and CWS. Besides,

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Table 19

Descriptive statistics, bivariate correlation, and reliability of the primary construct (N = 968)

Variables	M	SD	Sk	Ku	Correlations								
					Gender	Age	University	Education	Experience	TWB	PSYCAP	MOT	CWS
Gender					1								
Age					-.009	1							
University					.017	-.335**	1						
Education					-.034	.605**	-.388**	1					
Experience					.040	.593**	-.393**	.861**	1				
TWB	67.42	10.20	.077	.135	-.030	.266**	-.064*	.321**	.255**	**(.86)**			
PSYCAP	52.28	7.96	-.093	-.079	-.034	.349**	-.160**	.432**	.372**	.272**	**(.87)**		
MOT	50.32	8.14	.170	.507	-.031	-.083**	.190**	-.211**	-.233**	.125**	-.084**	**(.71)**	.
CWS	31.75	6.18	-.245	.304	-.023	.206**	-.133**	.249**	.176**	.207**	.222**	.064*	**(.70)**

Note: ** $p < 0.01$, * $p < 0.05$ (two-tailed); Cronbach's alpha (**α**) in **diagonal bold,** SD = standard deviation, CWS = coping with stress, MOT = motivation PsyCap = psychological capital, CWS = coping with stress, TWB = teacher well-being

Table 20

CFA of the scales, the measurement model, and the structural model of the constructs

Fit indices	Confirmatory Factor Analysis of the Scales				Rule of thumb
	PsyCap	CWS	Motivation	TWB	
χ^2 (*df*)	272.87(48)	110.65(24)	341.34(80)	342.16(101)	
p-Value	0.001	0.001	0.001	0.001	
χ^2/df	5.68	4.61	4.27	3.39	≤5
TLI	0.947	0.983	0.964	0.965	≥0.90
CFI	0.962	0.988	0.973	0.970	≥0.95
SRMR	0.047	0.056	0.071	0.064	≤0.08
RMSEA	0.070 (0.062–0.078)	0.061 (0.050–0.073)	0.0458 (0.052–0.065)	0.050 (0.044–0.056)	≤0.08

	Model 1		Model 2		Model 3-All		Rule of thumb
	MM	SM	MM	SM	MM	SM	
χ^2 (*df*)	2068.1 (845)	2068.1 (845)	1372.51 (616)	1372.51 (616)	3101 (1253)	3132.4 (1254)	
p-value	0.001	0.001	0.001	0.001	0.001	0.001	
χ^2/df	2.45	2.45	2.23	2.23	2.47	2.45	≤5
TLI	0.946	0.946	0.962	0.962	0.939	0.938	≥0.95
CFI	0.949	0.949	0.965	0.965	0.943	0.942	≥0.95
SRMR	0.078	0.078	0.056	0.056	0.080	0.079	≤0.08
RMSEA	0.039 (0.037–0.041)	0.039 (0.037–0.041)	0.036 (0.033–0.038)	0.036 (0.033–0.038)	0.039 (0.037–0.041)	0.039 (0.038–0.041)	≤0.08

Note: * $p < 0.001$, χ^2 = chi-squared, CFI = comparative fit index; CWS = coping with stress, *df* = degrees of freedom,, MM = Measurement model; PsyCap = Psychological capital, RMSEA = root mean error square of approximation; SM = structural model, SRMR = standardized root means square residual, TLI = Tucker–Lewis index, TWB = teacher well-being

Model 1: PsyCap → work task motivation → Teachers' well-being.

Model 2: PsyCap → Coping with stress → Teachers' well-being.

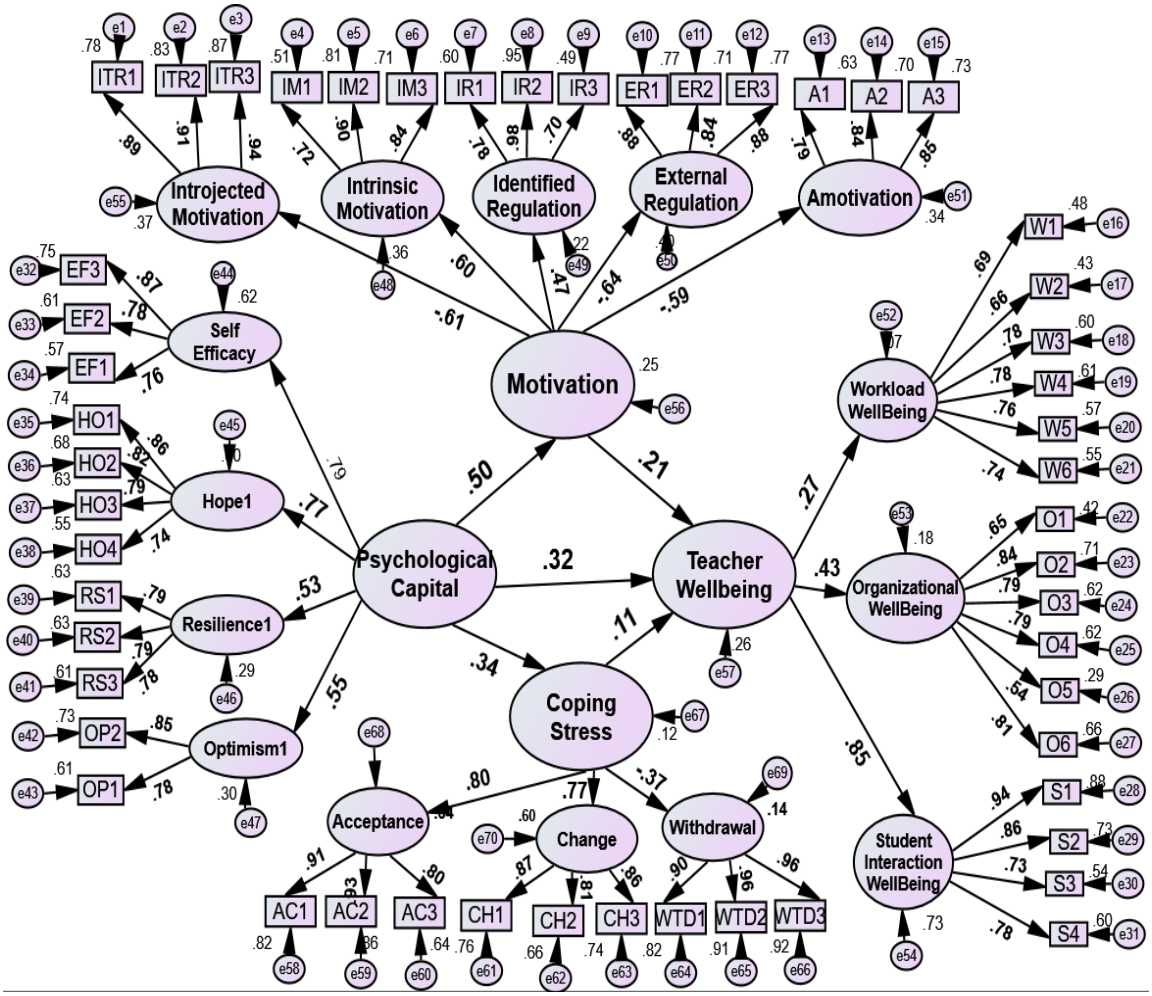
Model 3: PsyCap → work task motivation and coping with stress → Teachers' well-being (the whole mediated model (see Figure 20)

5.2.3.3. Mediation Analysis

RH_{12}: PsyCap directly affects WTM and (b) TWB, and RH_{13}: WTM and CWS mediate the relationship between PsyCap and TWB.

Figure 20.

The Mediation Role of Work Task Motivation and CWS between PsyCap and Teachers' Well-being (Result)



To answer the above hypothesis, we examined the relationship between PsyCap and TWB mediated through WTM and CWS (Figure 20). The variance explained (R^2) proportion was used to examine the accuracy of the prediction power of independent variables on dependent variables of the structured model obtained from the data. As a result, the model accounts for 25.6 per cent of the variance of TWB, 25.2 per cent of WTM of teachers, and 11.7 per cent of CWS of university instructors.

The results also show that the standardized direct effect path from PsyCap to WTM of teachers, CWS, and TWB were a positive and statistically significant (β = 0.502, [BC 95% bootstrap CI: 0.432 to 0.571], *p* =.002), (β =.342 [95% bootstrap CI:.263 to.418], *p* =.002), and (β = 0.320 [95% bootstrap CI:.208 to.431], *p* =.002) respectively, which supports the stated hypothesis (12a &b). Furthermore, the results of this study support the stated hypothesis (H36) in which the direct effect of WTMT and CWS on TWB is significant and positive (β =.213 [95% bootstrap CI:.090 to.322], *p* =.007) and (β =.107 [95% bootstrap CI:.025 to.190], *p* =.027) respectively.

Table 21.

A standardised direct effect of PsyCap, WTM CWS on TWB

Outcome variables	Path	Predictors	Standardized direct effect	Bootstrap 95% CI		
				Lower bound (LBC	Upper bound (UBC)	*p*-value
CWS (R^2=.117)	←	PsyCap	0.342	.263	.418	0.01
WTM (R^2 =.252)	←	PsyCap	0.502	.430	.517	0.01
TWB (R^2 =.256)	←	PsyCap	0.320	.208	.431	0.01
TWB	←	WTM	0.213	.025	.190	0.05
TWB	←	CWS	0.110	.090	.322	0.01

Note: CI = confidence interval, CWS = coping with stress, LBC = lower bound, UBC = upper bound

The indirect effect of PsyCap on teachers' well-being mediated through WTM and CWS was significant (β = 0.144 [95% bootstrap CI:.076,.212], which supports RH13. The structural model of this mediation indicates a good model fit (Table 20): χ^2 (1254) = 3132.39, *p* <.001, TLI =.938, CFI =.942, SRMR =.089, and RMSEA =.039 (.038 to 0.041). The measurement

model goodness-of-fit is also had an acceptable; χ^2 (1253) = 3101.723, *p* <.001, TLI =.939, CFI =.943, SRMR =.081, and RMSEA =.039 (.037 to.041). This result implies that this research model is acceptable structural and measurement validity supported by the cut-off points prescribed by Hu and Bentler (1999). TLI and CFI score of.90 or more indicates a good fit of a model. The following cut-points were used in this study for RMSEA: poor fit = greater than.10, mediocre fit =.08 to.10, good fit =.05 to.08, close fit =.01 to.05, and exact fit =.00. For groups of 10 to 20, Hu and Bentler suggested RMSEA cut-points of ≤.08 for acceptable fit. For TLI and CFI, the recommended cut-points are poor fit >.85, mediocre fit =.85–.90, acceptable fit =.90–.95, a close fit =.95–.99, and exact fit = 1.00.

The next step is checking the partial mediation by considering the teacher's well-being as the dependent variable, PsyCap as the predictor variable, and WTM as the mediator variable. The study found that the indirect effect of the PsyCap on teachers' well-being through WTM is significant and positive (β =.118, 95% bootstrap CI [.050 to,.198], *p* =.001).

Finally, PsyCap has a positive and significant indirect effect on teachers' well-being through CWS (β = 051 [95% bootstrap CI:.024 to.080], *p* =.002). This implies that CWS partially mediates the relationship between PsyCap and TWB (Figure 21; Table 22).

Table 22

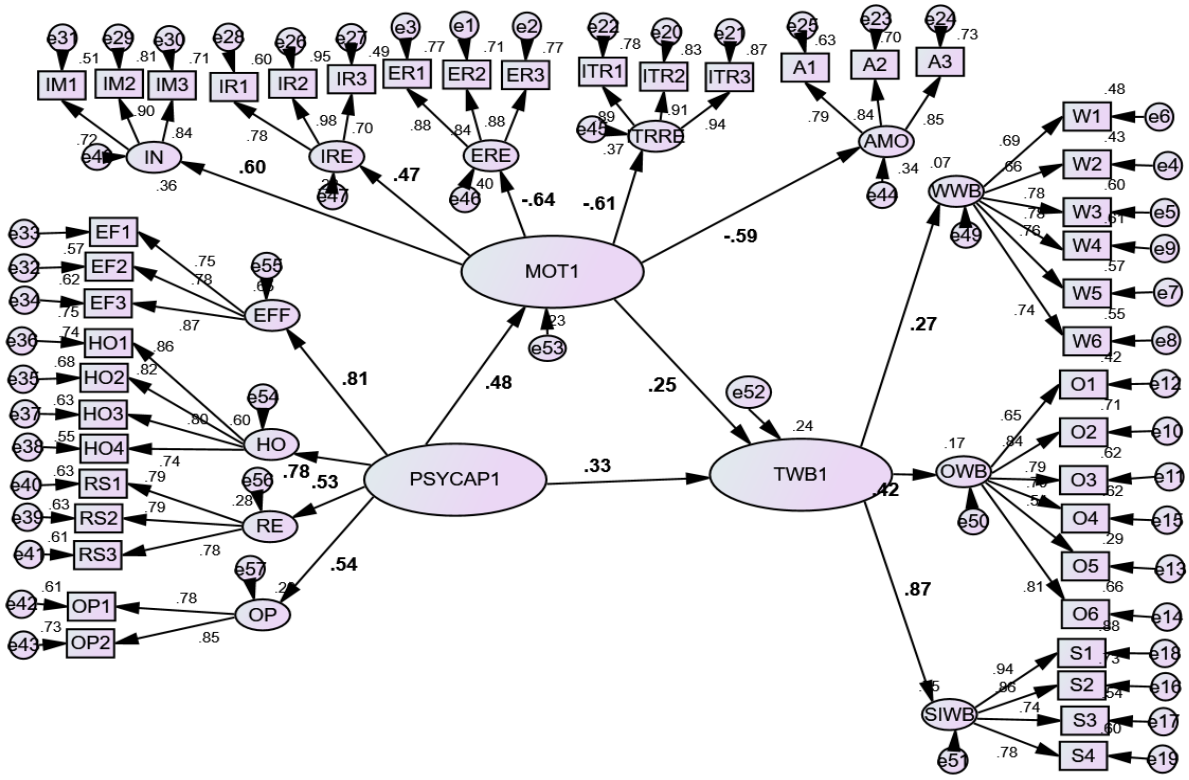
Bootstrapping standardized indirect effect using 95% biased corrected confidence interval predicting teachers' well-being (N = 968)

Path Model	Bootstrap 95% CI			
	Beta	LBC	UBC	*p*-value
PsyCap → CWS and motivation → teachers' well-being (Figure 22)	.144	.076	.212	.001
PsyCap → motivation → teachers' well-being (Figure 23)	.120	.050	.198	.001
PsyCap → teachers' well-being (Figure 24)	.051	.024	.080	.01

Note: CI = confidence interval, LBC = lower bound, UBC = upper bound

Figure 21.

Partial Mediation Model: The Mediation Role of WTM between PsyCap and TWB (Result)



5.2.3.4. Discussion of Study Four

First, the normality of distribution and the assumption of the tests were carried out. Second, after a rational justification and requirement normality assumptions were met, the Pearson product correlation was performed to check whether there is a relationship between socio-demographic factors and PsyCap, TWB, WTM, and CWS as well as a relationship found among the four main constructs themselves. Third, we chose a statistical analysis method that fits this study. Fourth, reliability, structural model, measurement model and CFA of the constructs were performed in these data. Fifth, the mediation analysis was carried out.

Correlation

In the 10th research hypothesis (RH10), we tested whether PsyCap correlated with CWS, WTM, TWB and socio-demographic factors or not. Specifically, it was hypothesized that socio-demographic characteristics (age, education, university type and experience in teaching) could relate to the constructs of PsyCap, WTM, CWS and TWB (Antoniou et al., 2013; Collie et al., 2015; Zewude et al., 2022b) Our result confirmed except gender, age, university type,

experience in teaching and education showed a significant relationship with PsyCap, WTM, CWS and TWB (see Table 15). In addition, PsyCap had a significant positive correlation with CWS, WTM and TWB. This implies that the higher the PsyCap, WTM, and CWS resulted, the better TWB; teachers with a high level of positive psychological resources, coping strategies, and motivational types improve TWB. In contrast, the current study found no significant effects of age, gender, and school type on overall well-being. However, years of experience significantly affected employees' overall well-being. Moreover, examined PsyCap, WTM, CWS, and TWB constructs related to essential variables, such as teaching experience, gender and school level, help practitioners and researchers fill the gap of teachers (Antoniou et al., 2013; Ascenso et al., 2018; Zewude & Hercz, 2021a). Due to inconsistent findings, strengthening the evidence, and testing the further analysis, we have examined their relationship in the current study; it would be more substantial than the previous study.

Consequently, In this regard, the results were found that PsyCap had a significant positive correlation with CWS, motivation and TWB. The findings of this study indicated that PsyCap, WTM, and CWS have a positive relationship with TWB; that is, teachers have a high level of positive psychological resources (hope, efficacy, resilience and optimism), coping strategies (acceptance, change and withdrawal), and motivational strategies or types (intrinsic motivation, identified regulation and less external, introjected regulation and amotivation), improving TWB (workload, organizational, and student-interaction well-being). Similarly, the findings are consistent with this study (Ferraro et al., 2018; Rabenu et al., 2016; Zewude & Hercz, 2021). This study found that CWS, WTM and PsyCap as integrated resources should be helpful to improve teachers' well-being in their work-life.

Group differences

The eleventh hypothesis ($RH11^{th}$) is concerned with group differences. One-way ANOVA was performed with Tukey HSD multiple groups' comparisons of age groups, university type, educational qualification, and teaching experience on PsyCap, TWB, WTM, and CWS. As a result, PsyCap, TWB, WTM, and CWS levels differ significantly across gender, age, years of experience in teaching and university type. Tukey HSD multiple groups' comparison test also showed that when the age, educational qualification and experience in teaching increase TWB, PsyCap and coping skills also increase, but WTM decreases. It confirmed previous findings that socio-demographic factors (gender, age, and university type) significantly affected university teachers' well-being (Zewude & Hercz,, 2021a; 2022b). In contrast to the current study, Ascenso et al. (2018) found no significant effects of age, gender,

and school type on overall well-being. However, years of experience significantly affected employees' overall well-being.

Mediation Model

The research hypotheses (RH 12 & 13th) were tested to determine whether WTM and CWS together are positive and significant predictors and mediators of TWB or not. Hence, this study found that PsyCap is a positive predictor of CWS, motivation and TWB, supported by hypothesis 12. Here the results are consistent with other studies reported in the scientific literature (Ferraro et al., 2018; Rabenu et al., 2016; Siu et al., 2014; Zewude & Hercz, 2021). In addition, this study was tested to determine whether CWS and WTM are positive and significant predictors of TWB. This study confirmed that WTM and CWS are significant positive predictors of TWB. Again, the previously studied literature supports this evidence (Ferraro et al., 2018; Rabenu et al., 2016; Zewude & Hercz, 2021). For example, intrinsic and identified mediated by PsyCap improve the quality of life (Ferraro et al., 2018).

Hypothesis 13 of this study examined PsyCap as a predictor of teacher well-being through CWS and WTM; we found that CWS and WTM fully mediated the relationship between PsyCap stress and the TWB model. Research findings reported in the scientific literature were consistent with this study (Bernard et al., 2014; Ferraro et al., 2018). More specifically, a study conducted by (Ferraro et al., 2018) found that PsyCap, intrinsic and identified motivation are the best potential resources for positive work life.

Besides, we tested whether motivation is partially mediated in the relationship between PsyCap and TWB. It was found that motivation has played a partial mediator role in the relationship between PsyCap and TWB (Table 22). This implies that the higher the WTM, the higher the PsyCap and the better the TWB. The existing literature supports our findings and indicates that motivation would improve the well-being of employees (Gagné & Deci, 2005; Ryan & Deci, 2017) and play a mediator role between autonomy support and well-being (Nie et al., 2015).

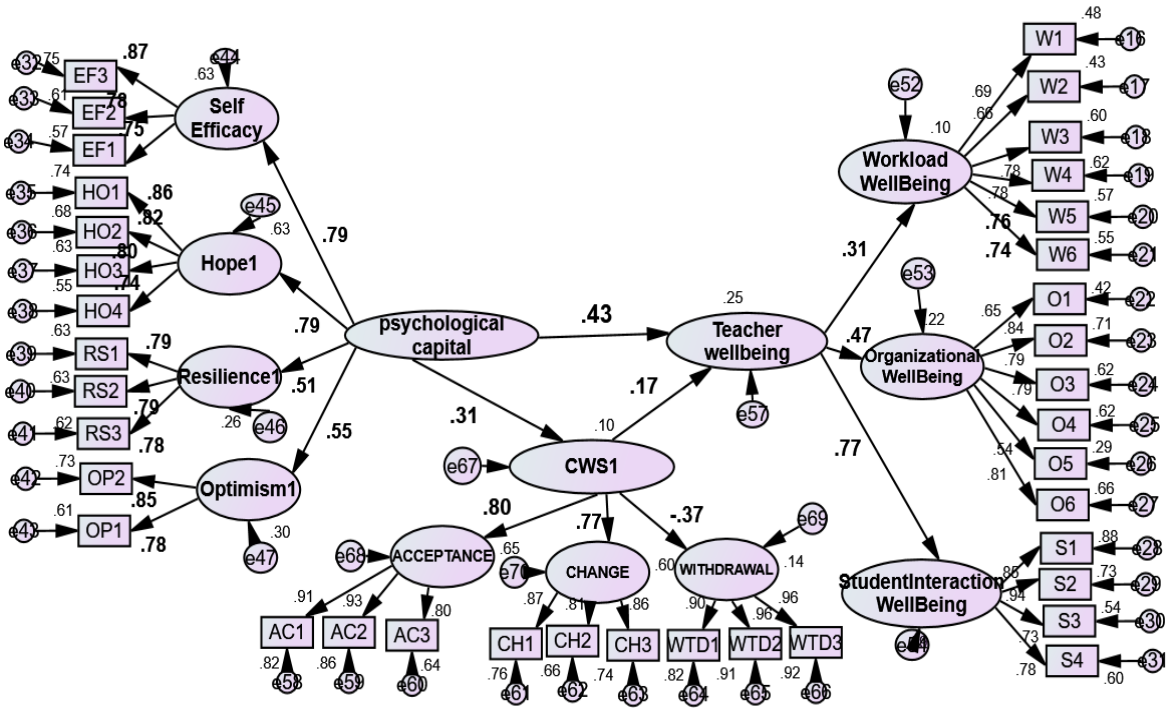
Also, we tested whether CWS plays a mediating role in the relationship between PsyCap and teachers' well-being. We found that PsyCap indirectly and positively affected TWB through CWS, as demonstrated in Figure 22. Consistently with this study result, Zewude &

Hercz (2021) found that CWS significantly mediates the relationship between PsyCap and teachers' well-being.

These results suggest that WTM, CWS, and PsyCap could positively enhance and improve TWB. Thus, positive psychological resources, coping and motivational strategies as positive resources should be designed to enhance teachers' flourishing lives and improve their well-being. To sum up, theoretically and practically, exploring the relationships and impacts of PsyCap on university teachers' WTM, CWS, and TWB is of great value. There are also no findings in education, particularly for university teachers leading to a knowledge (literature) gap). Therefore, conducting a study on the current agenda of researchers and practitioners; i.e., positive psychology and its association with teachers' well-being, WTM, and CWS, by establishing an integrated, fresh, and novel model following the positive psychology theory of Seligman (2011), the self-determination theoretical approach of Ryan & Deci (2017), the coping stress theory of Lazarus & Folkman (1984), and conservation resource theory of Hobfoll (1989;2002) become relevant for today's higher education.

Figure *22*.

Partial Mediation Model: The Mediation Role of CWS between PsyCap and TWB(Result)



Note. Figure 22 indicates partial mediation output mode on "the mediation role of coping with stress (CWS) between PsyCap and teachers' well-being".

6. CONCLUSION, LIMITATIONS AND FURTHER RESEARCH AND PRACTICAL IMPLICATIONS

This chapter concluded and discussed the theoretical and practical contributions of the study. It also underscored the research's limitations and suggested future research directions. In the last part of this chapter, we highlighted the study's originality, providing a new understanding based on practical and theoretical information.

6.1. General Discussion and Conclusion

The overall goal of the present research was to address several significant gaps in the scientific literature through two research phases and four studies on Psychological Capital (PsyCap), Work Task Motivation (WTM), Coping With Stress (CWS) and Teacher Well-Being (TWB). Specifically, this study explored the mediation role of WTM (dimensions and total) and CWS (dimension and total) between PsyCap and TWB (dimension and total) in the Ethiopian higher education setting. Therefore, the direct effect of PsyCap, WTM and CWS on TWB using Structural Equation Modeling (SEM), a bootstrapping method, was tested. Besides, cross-cultural adapataion and validation was necessary before examining the mediation model.

As a result, an adapted instrument for the new target population is needed because of the current study area is culturally and linguistically different. And the instruments have been extensively tested and found psychometrically sound in different cultural contexts but new in the Ethiopia context (Davidov et al., 2014, 2018). Consequently, the scales, namely the Psychological Capital Questionnaire (PCQ-12), Work Task Motivation of Teachers (WTMST), Coping With Stress Questionnaire (CWS-Q) and Teacher Well-Being Scale (TWBS) psychometric properties, were examined using several recommended methods to ensure the validity and reliability of the measures before applying mediation model. To achieve the aim of this study, we addressed 13 research hypotheses in both parts of cross-cultural validation and the main study, which are discussed in chapter 5. In the first phase of this study, a psychometric validation was done based on theoretically driven measures.

The PCQ-12, WTMST, CWS-Q and TWBS measures were grounded as a theoretical framework of psychological and educational theoretical models. These instruments were developed for North American and Asian samples. Crucially, the suitability of the PCQ-12, WTMST, CWS-Q and TWBS should be investigated to match with diverse cultural contexts before making inferences.

As a result, the PCQ-12, WTMST, CWS and TWBS proved good reliability and acceptable construct validity (based on the measures of convergent and discriminant validity). These findings are also consistent with our proposed research hypotheses. Besides, in this study, the PCQ-12, WTMST, CWS-Q and TWBS measures from the three competing CFA models (the correlated factor, bi-factor, and higher-order model) indicated a good fit for the data. However, the single-factor model was unfitted with the existing data in this study, indicating the multi-dimensional nature of the constructs' measurement model. Consequently, the bi-factor model for TWBS and WTMST and the correlated factor model for PCQ-12 and CWS-Q showed better fit indices by TLI, CFI, RMSEA, AIC and BIC among the four competing models. Therefore, the bi-factor model for WTMST and TWBS and the correlated factor model for PsyCap and CWS were used for further measurement invariance (MI) tests across genders and university types.

Concerning MI, all four criteria (configural, metric, scalar, and residual) were satisfied in the four constructs, PCQ-12, WTMST, CWS-Q and TWBS and fulfilled in all groups. The existing literature supported the present study's findings and indicated that the measurement invariance would be indispensable to proving the measures' psychometric properties and standardized validation (Millsap, 2011; Putnick & Bornstein, 2016; Vandenberg & Lance, 2000). The validation study done in study one made a bridge move to study two of the mediation role of WTM in the relationship between PsyCap and TWB.

The second phase of this study examined the mediation role of work task motivation in the relationship between PsyCap and teacher well-being in the Ethiopian higher education context. The three research hypotheses were set to address in sub-study two. In this sub-study, we confirmed the reliability and construct validity measures. Furthermore, the measurement and structural model of each meditation model was assessed based on the recommendation of Hair et al. (2019) and Kline (2016). Initially, the absence of multicollinearity was confirmed by inspecting the determinant of the correlations among the values of the constructs, which should be less than 0.90, and by checking the assumption of normality using skewness and kurtosis. Outliers of the constructs were also examined following Kline (2016) and Tabachnick and Fidell (2018). Thus, the data was normality distributed and met the criteria of absence of multicollinearity. This study also confirmed a significant positive correlation between PsyCap and intrinsic motivation, identified regulation, workload well-being, organizational well-being, student interaction well-being, and teacher's well-being. However, PsyCap had a significant

and negative relationship with external regulation and amotivation but no relationship with introjected regulation. The findings are in line with those of Ferraro et al.(2018).

As the second phase, the main study was carried out to investigate the mediation role of WTM and CWS in the relationship between PsyCap and TWB in Ethiopia. This study phase had three main parts to examine the answer to the proposed hypothesis (PsyCap, WTM, and CWS) on university TWB. The first part of the main study investigated the mediation role of WTM (total and dimension) in the link between PsyCap and TWB (total and dimensions) on university sample teachers. The findings proved our hypothesis that the standardized direct effect path from PsyCap to WTM of teachers and TWB was positive and significant. Similarly, WTM directly and positively affected TWB. Besides, the indirect effect of PsyCap on TWB mediated through WTM was positive and significant, supporting our hypothesis. In addition, this study proved the fitness of measurement and structural models. This implies that WTM was mediating between PsyCap and TWB, and PsyCap is a very effective and positive construct for healthy teachers' work life.

PsyCap on the dimensions of TWB (workload, organizational and student interaction) had a direct and positive effect. This result is similar to our previous study (Zewude & Hercz, 2021a).

Similarly, like the previous findings by Ferraro et al. (2018), we proved that PsyCap significantly and positively affected the identified regulation and intrinsic motivation. However, PsyCap has negatively impacted external regulation and amotivation but did not relate to introjected regulation in our study. But it had a significant negative effect on introjected motivation.

Finally, the dimensions of WTM fully meditated the relationship between PsyCap and dimensions of teacher well-being. Therefore, we confirmed our stated hypothesis that PsyCap indirectly affects the workload and organizational and student interaction well-being through the dimensions of WTM. However, PsyCap did not indirectly affect student interaction well-being through intrinsic motivation, identified regulation and amotivation. Besides, PsyCap did not indirectly affect the three dimensions of TWB through introjected regulation.

The second part of the main study investigated the validation and measurement invariance of CWS-Q and its mediation role (total and dimensions) between the general PsyCap model and the total and dimensions TWB in Ethiopia. In this sub-study, we tested three research hypotheses that addressed this mediation model. Stress is one of the most potential negative factors that affect TWB. For example, stressful life events impair teacher well-being and

decrease their coping abilities to deal with stress (Folkman & Moskowitz, 2000;2004). Therefore, teaching is a stressful profession and needs to be investigated concerning coping strategies. Based on the nature of teaching professions and actual teachers' work life, we added the CWS variable by considering its practical importance. To assess CWS, we adapted a standardized questionnaire developed by Rabenu et al. (2016); the most applicable that assesses teacher well-being and the findings were found in the validation section. Hence, the original instrument was in English and developed in the Israeli (Asia) cultural context. However, the present study was in the Ethiopian Amharic language (Ethiopia) cultural context, followed by back-forward translation procedures.

PsyCap has been positively associated with coping and teacher well-being (Rabenu et al., 2016; Rabenu & Yaniv, 2017; Zewude & Hercz, 2021). The conclusion drawn from the authors is that an individual with more positive psychological elements (hope, efficacy, resilience, optimism) will use coping through acceptance and change and avoid coping through withdrawal(Rabenu & Yaniv, 2017a). In addition, Rabenu et al. (2016) and Lazarus & Folkman (1984) asserted that PsyCap would serve as a positive individual resource for coping while resources came first and positively impacted coping. Therefore, coping with stress and PsyCap are relevant variables and essential; we included it in study three as a core component. This study indicated that the adapted CWS-Q instrument was reliable, valid in discriminant, convergent, and the best fit in construct validity. Furthermore, the CWS construct significantly mediated the relationship between PsyCap and TWB, supporting our hypothesis. Furthermore, PsyCap had a positive direct effect on CWS and TWB. The direct effect of CWS also played a positive direct effect on TWB. From these findings, we can conclude that CWS fully mediated the relationship between PsyCap and TWB. Several findings support our results. For example, coping with stress mediates the relationship between PsyCap and TWB (Rabenu et al., 2016; Zewude & Hercz, 2021). In addition, this finding was strongly supported by theoretical models such as Positive Psychology Theory (Seligman & Csikszentmihalyi, 2000), Conservation Resource Theory (Hobfoll, 1989), and the Broaden-and-Build Theory of Positive Emotion (Fredrickson, 2004c) and Stress-Appraisal Theory (Lazarus & Folkman, 1984).

In addition, this study proved that the indirect effect of PsyCap (through coping with acceptance, change and withdrawal) was significant for workload, organizational and student interaction well-being. The model had acceptable and confirmed structural and measurement validity (Hair et al., 2019; Kline, 2016; Tabachnick & Fidell, 2018). The results also showed that PsyCap positively influenced teachers' well-being, and the core coping with stress strategies would enhance and can be used as a resource to flourish their work-life and establish

the best relationship with their students and institutions. The findings implied that the CWS-Q and the mediation role of coping with stress were appropriate for assessing Ethiopian higher education teachers and improving the teachers' well-being. Therefore, CWS with PsyCap played a significant role for university teachers.

The third and last part of the main study investigated the mediation role of WTM and CWS, with the whole main study on the relationship between PsyCap and TWB. This study also tested Ethiopian university teachers' well-being, PsyCap, TWB, WTM and CWS across various socio-demographic groups (age, education, university type and experience). In this sub-study, we had already set four research hypotheses that both WTM and CWS were potential mediators between PsyCap and TWB. This holistic model might improve TWB and strengthen the direct and indirect impact of PsyCap through CWS and WTM. The findings of the ANOVA in this study proved that there were statistically significant differences obtained for teachers' reports of age, education, university type and years of experience in teaching on PsyCap, TWB, WTM and CWS. The Tukey HSD multiple groups' comparisons test result also showed that the age, educational qualification, and experience in teaching increased 'teachers' well-being, PsyCap and coping skills; however, these demographic variables decreased the work task motivation. Based on these findings, age, educational qualification, and experience in teaching were highly associated with an external type of motivation. This hypothesis has one distinct reason. In Ethiopia's higher education system, it is a fact that education and experience have no additional benefits. This might be the main reason why WTM is decreass.

In this sub-study, the structural model tested the direct and indirect effect of PsyCap on TWB mediated through WTM and CWS. Before assessing the mediation model, this study established the construct validity and reliability of all primary constructs to ensure the construct validity and reliability. The PCQ-12, the CWS-Q, WTMST, and the TWBS had been researched in studies 1, 2, and 3 and had good construct validity and reliability. Also, the reliability and construct validity using confirmatory factor analysis in each study data is recommended by Kline (2016) and Tabachnick and Fidell (2018) and proven in this study. This sub-study three confirmed that WTM and CWS positively and directly predicted TWB and played a mediator role between PsyCap and TWB. These results suggested that motivational types, coping stress strategies, and positive psychological capital resources could improve TWB. Thus, positive psychology intervention approaches, coping strategies, and motivation as positive resources should be designed to strengthen teachers' flourishing life and develop high motivation and coping skills to nurture their well-being. Therefore, the PsyCap, WTM and CWS have

appreciated factors based on Ethiopian university teachers. To put it in a nutshell, all research hypotheses were successfully addressed by the research aim. Hence, our expected research hypotheses are mostly answered in this research.

6.2. Practical and Theoretical Contributions

6.2.1. Practical Implications

First, it has extended our understanding of the constructs of Psychological Capital (PsyCap), Work Task Motivation (WTM), Coping With Stress (CWS) and Teacher Well-Being (TWB) in different ways. Specifically, the findings have supported a multi-dimensional construct of PsyCap (hope, efficacy, resilience and optimism), WTM (intrinsic motivation, identified regulation, external regulation, introjected regulation and amotivation) and TWB (workload, organizational and student interaction well-being). Moreover, the present study is relevant for today's higher education teachers and applicable in educational psychology to study TWB and its association with PsyCap, WTM, and CWS.

Second, as for practical implications, the present study should be vital for intervention in university TWB by fostering PsyCap, improving motivation and creating a conducive university environment. PsyCap is cognitive, whereas WTM and CWS are both cognitive and affective domains, so we can foster them by changing our cognition and affection (Li, 2018; Rabenu et al., 2016). In addition, PsyCap would serve as a critical personal resource for coping (Rabenu et al., 2016) and WTM (Ferraro et al., 2018), since resources precede and influence coping (Lazarus & Folkman, 1984) and motivation (Ryan & Deci, 2017). And also, PsyCap has a positive outcome for individuals, organizations, and societies (M. Seligman, 2018).

Third, the use of Structural Equation Modeling (SEM) allowed an examination of a complex theoretical model, as hypothesized in our study. Considering our sample from different types of universities, researchers, practitioners, and policymakers will benefit, and this study will guide future research.

Fourth, this study also confirmed that PsyCap is a potential resource to help individuals combat the effects of stress using coping, fostering their inner strength and nurturing their well-being. Fredrickson's (2004) broaden-and-build theory underlined that the form and function of a subset of positive emotions, including interest, hope, optimism, efficacy, joy, contentment,

and love, are potent for coping with stress. Therefore, PsyCap has a determinant role as a resource to cope with stress, improve motivation, and enhance well-being.

Fifth, this study has practical contributions for researchers, students and practitioners working in the area. For example, for researchers interested in researching TWB and its association with WTM, CWS and PsyCap, this model is well verified by different advanced methods and can easily apply in the teaching profession and to teachers.

Six, this dissertation research work has introduced a variety of future implications for researchers, such as the validated multi-faceted measure for PsyCap, CWS, WTM and TWB of teachers in the Ethiopian context. Hence, psychometrically suitable measures are required to make the best decisions in educational settings. Also, these studies increased an understanding of the suitability of the Psychological Capital Questionnaire (PCQ-12), Work Task Motivation Scale for Teachers (WTMST), Coping With Stress Questionnaire (CWS-Q), and Teacher Well-Being Scale (TWBS) through a multi-dimensional lens, offering evidence of convergent, discriminant, divergent, construct validity with model comparison and measurement invariance across different groups seems recommendable to reach a conclusive result on PCQ-12, WTMST, CWS-Q, and TWBS, leading to practical implications. Moreover, these instruments used as a global guiding framework, especially for more than 130 million Amharic-speaking population, are easily and locally accessible. Therefore, the instrument validation and scientific evidence may prove helpful to researchers, practitioners, and policymakers seeking to understand their decisive roles in fostering teachers' positive work life.

Seven, the result of this study carries some implications for university managers. Positive education in tertiary education played a vital role in enhancing TWB and improving the WTM of university teachers. For example, Li (2018) pointed out that university leaders or managers can enhance TWB by increasing their meaning in life or PsyCap.

6.2.2. Theoretical Contributions

The findings of this study have a theoretical contribution. First, this study should be valuable for practical intervention in university teachers' well-being by applying Positive Psychology Theory (PPT), Self-Determination Theory (SDT), Broaden and Build of Positive Emotion Theory (BBPE) and Conservation Resource Theory (COR**)** to foster TWB and PsyCap, improve motivation and their use of coping skills. And it has also expanded the scientific literature by recommending that SDT is a helpful model for investigating how PsyCap

and motivation relate to organizational, workload and student interaction well-being. Józsa and Morgan (2015) also suggested the importance of motivation for children and adults in developing intervention programs. Besides, the positive psychology theory connects PsyCap and CWS to organizational, workload and student interaction well-being. Secondly, researchers might use the newly developed final meditation and specific models as a guiding theoretical framework for further research. Third, this study's findings could be of great importance for theorists in educational psychology to understand the type of PsyCap, WTM, CWS and TWB. Finally, this study also has the effectiveness of Ethiopian university teachers' positive and healthy work functioning.

6.3. Recommendation

Different researchers in education and psychology studied the importance of WTM TWB, CWS, the potential role of PsyCap, and their practical importance to higher education. However, several gaps are recommended for future studies.

1. PsyCap helps as a positive resource and promises to enhance university teachers' well-being; WTM and CWS will be used for further intervention. Therefore, we recommend using these comprehensive and verified models to improve TWB.
2. Understanding TWB can significantly reduce illness and diseases and improve an organization's success, economics, and productivity, determine the overall quality of life and it is also essential for individuals' outcomes at work (Kaur & Singh, 2019; Rath & Harter 2010). Therefore, as a long-term goal, we suggest practitioners and researchers broadly focus on the PPT, SDT, BBPE and COR theories paradigm to enhance TWB using the latest scientific findings and advanced statistical techniques.
3. Well-being is broad, and each professional task is different; therefore, we recommended examining it in other contexts to address each employee's problem. Hence, this model will apply in various educational, clinical, marketing, and other organizations.
4. Previous studies have paid more attention to organizational settings, mainly in North America and Europe. Therefore, we recommended further research across cultures on PsyCap, WTM, CWS and TWB because these constructs are critical for teachers and students.
5. Although PsyCap, WTM, and CWS are the best predictors of TWB, we recommend using these models to conduct further research by considering both public and private universities and colleges to get diverse opinions about the teachers.

6. Based on the identified gaps in this study, on positive psychological resources, teachers can be offered coping strategies and SDT training in universities to improve their well-being, WTM and coping skills.
7. A study in Africa showed that culture, economic system, religion, ethnicity, kinship system, marriage, gender, age, education, employment and institutional practices played a pivotal role in teachers' well-being. Therefore, future studies should take the opportunity to examine these basic and essential demographic variables using multi-variate analysis by taking cross-cultural samples.
8. Future studies should consider school administrators, students, and teachers using PCQ-12, WTMST, CWS-Q and TWBS for the substantiated program development and promotion of TWB at all levels.
9. Even though we performed the common method Bises (CMB) in studies 2, 3, and 4 using the Herman single-factor solution, all the data from the four studies were derived from a single source or subjects' self-reports. A self-report and mono-method bias is one methodological issue affecting a study's validity. Even though this study had such strength, future research should consider qualitative, longitudinal and quasi-experimental studies to minimize such problems.
10. In this study, the data was collected from Public university teachers'. However, this research did not address private universities and elementary and high school teachers. Therefore, future studies should consider three levels of education—elementary, high school, and university (both public and private)—across various cultures, using positive psychology and SDT models to enhance TWB.
11. For future directions, this study would be fascinating to study the potential role of psychological capital on university teachers' well-being through work task motivation and coping with stress in different educational settings. We believe that in this study, the proposed hypotheses warrant further research inquiry, along with applied PsyCap at the university and other relevant variables such as WTM, CWS and socio-demographic factors that can serve as new resources for TWB. We hope that our findings will have positive implications for teachers and educational settings in the future of positive psychology research, especially in higher education. We hope our results hold future implications of positive psychological research for teachers and school settings, especially in higher education.

6.4. Limitations of the Studies and Further Research Implication

Several limitations of the study must be acknowledged. First, only university instructors participated in this study which limits generalizability to instructors at other tertiary institutes (e .g., private universities, teacher education colleges, technology institutes). Future studies should seek to involve lecturers, university administrative employees, and managers since PsyCap, WTM, CWS and TWB may be both directly and indirectly affected by the stakeholders in universities. Second, we collected data using self-report measures susceptible to social desirability bias. Future studies should utilize observational and self-report data for more accurate findings. Moreover, future studies should consider surveying both schools, university administrators, and students to corroborate teacher survey findings (Mankin et al., 2018). Nonetheless, teachers' PsyCap, WTM, CWS and well-being are highly important. The PCQ-12, WTMST, CWS-Q and TWBS appear to be valuable tools for assessing 'teachers' well-being for intervention design in the Ethiopian higher education setting.

6.4 Research Originality

The researcher declared that this dissertation work entitled" The mediation role of WTM and CWS in the relationship between PsyCap and TWB" is the original and independent work by the author, Girum Tareke Zewude. This dissertation research contributed to the cross-cultural adaptation and validation of PCQ-12, WTMST, CWS-Q, and TWBS tools in the Ethiopian higher educational context. This dissertation work was granted by the Institutional Review Board (IRB) of the Doctoral School of Education, the University of Szeged and the Amhara Regional State University Forum with the Certificate number, Ref. 26/2019 and ARSUF.1,1712/2022., respectively.

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APPENDICES

Appendix 1 Psychological Capital Questionnaire (PCQ-12) both English and Amharic Version

Items	Original English Version	Amharic Version
	In the context of your current employment role, below are statements that describe how you may think about yourself right now. Use the following scales to indicate your level of agreement or disagreement with each statement	አሁን ካለህበት/ሽበት የስራ ድርሻ አንፃር፣ ስለራስህ/ሽ አሁን እንዴት እንደምታስብ /ቢ የሚገልጹ መግለጫዎች አሉ። ከእያንዳንዱ መግለጫ ጋር ያለዎትን የስምምነት ደረጃ ወይም አለመግባባት ለማመልከት የሚከተሉትን ሚዛኖችን ይጠቀሙ ::
1	I feel confident in representing my work area in meetings with management	ከአስተዳደር ጋር በሚደረጉ ስብሰባዎች የስራ አካባቢዬን በመወከሌ በራስ መተማመን ይሰማኛል።
2	I feel confident contributing to discussions about the university's strategic plan	ስለ ዩኒቨርሲቲው ስትራቴጂክ እቅድ ውይይቶች ላይ አስተዋጽዖ ስለማደርግ በራስ መተማመን ይሰማኛል::
3	I feel confident presenting information to a group of colleagues	መረጃን ለሥራ ባልደረቦች በማካፈሌ በራስ መተማመን ይሰማኛል።
4	If I should find myself in stuff at work, I could think of many ways to get out of it.	በሥራ ቦታ ራሴን ማግኘት ካለብኝ፣ ከእሱ ለመውጣት ብዙ መንገዶችን ማሰብ እችላለሁ።
5	Right now, I see myself as being successful at work.	አሁን፣ ራሴን በስራ ላይ የማየው በጣም ስኬታማ እንደሆንኩ ነው ።
6	I can think of many ways to reach my current work goals.	አሁን ያስቀመጥኳቸው የስራ ግቦቼ ላይ ለመድረስ ብዙ መንገዶችን ማሰብ እችላለሁ።
7	At this time, I am meeting the work goals that I have set for myself.	በአሁኑ ጊዜ፣ ለራሴ ያስቀመጥኳቸውን የስራ ግቦች እያሳካሁ ነው።
8	I can be "on my own," so to speak, at work if I have to.	ስለ ሥራ ጉዳይ መናገር ካለብኝ እራሴን ሆኜ መናገር እችላለሁ::
9	I usually take stressful things at work in stride.	ብዙውን ጊዜ በሥራ ቦታ አስጨናቂ ነገሮችን በእርጋታ አሳልፋልሁ።
10	I can get through difficult times at work because I have experienced difficulty before.	በሥራ ቦታ አስቸጋሪ ጊዜዎችን ማለፍ እችላለሁ ምክንያቱም ከዚህ በፊት ችግር አጋጥሞ ኝ ያውቃል::
11	I always look on the bright side of things regarding my job.	ሁል ጊዜ ሥራዬን በሚመለከቱ ጉዳዮች በብሩህ ጎን እመለከታቸዋለሁ።
12	I am optimistic about what will happen to me in the future pertaining to work.	ሥራን በሚመለከት ወደፊት በብሩህ ተስፋዬ እና ቀና አመላካከት ምን እንደሚደርስብኝ እገምታለሁ።
Scoring: Original-English Version		Amharic Version
1 Strongly disagree	6 Strongly agree	1 በጣም አልስማማም / 6 በጣም እስማማለሁ

Note: Items 1-3= efficacy, Items 4-7= hope, Items 8-10=resilience, Items 11-12=optimism

Appendix 2. Both English and Amharic Version of Work Task Motivation Scale for Teachers (WTMST)

Items	Original English Version	Amharic Version
	Using the scale below indicates to what extent each of the following items presently corresponds to one of the reasons why are you doing the teaching?	ከዚህ በታች ያለውን ሚዛን መጠቀም ከሚከተሉት ምክንያቶች ውስጥ እያንዳንዳቸው ምን ያህል እንደሚመሳሰሉ ያሳያል። ለምን የማስተማር ሙያ ይሠራሉ?
1	Because it is pleasant to carry out this task.	ምክንያቱም ይህን ተግባር መፈፀም ደስ የሚል ነው።
2	Because I find this task interesting to do.	ምክንያቱም ይህ ሥራ መሥራት አስደሳች ሆኖ አግኝቼዋለሁ።
3	Because I like doing this task.	ምክንያቱም ይህን ተግባር መሥራት እወዳለሁ።
4	Because it is crucial for me to carry out this task.	ምክንያቱም ይህን ተግባር መስራት ለእኔ አስፈላጊ ነው::
5	Because this task allows me to attain work objectives that I consider important.	ምክንያቱም ይህ ተግባር አስፈላጊ ብዬ የማስበውን የሥራ የን ዓላማ እንዳሰካ ስለሚያስለኝ ነው።
6	Because I find this task important for the academic success of my students.	ምክንያቱም ይህ ተግባር ለተማሪዎቼ ትምህርታዊ ስኬት አስፈላጊ ሆኖ አግኝቼዋለሁ።
7	Because if I do not carry out this task, I will feel bad.	ምክንያቱም ይህን ተግባር ካላከናወንኩ መጥፎ ስሜ ይሰማኛል::
8	Because I would feel guilty not doing it.	ምክንያቱም ባለማድረግ የጥፋተኝነት ስሜት ይሰማኛል።
9	To not feel bad if I do not do it.	ካላደረግኩት መጥፎ ስሜት እንዳይሰማኝ::
10	Because my work demands it.	ምክንያቱም ስራዬ ይፈልገኛል።
11	Because the school obliges me to do it.	ምክንያቱም ትምህርት ቤቱ እንድሠራ ያስገድደኛል።
12	Because I'm paid to do it.	ምክንያቱም እኔ ለምሠራው ሥራ ስለ ሚከፈለኝ ነው
13	I do not know; I do not always see the relevance of carrying out this task.	አላውቅም, የማስተማር ስራ አስፈላጊነት ሁልጊዜ አይታየኝም::
14	I used to know why I was doing this task, but I don't see the reason anymore.	የማስተማር ስራ ለምን እንደሰራሁ አውቃለሁ ፣ ግን ምክንያቱን ከአሁን በኋላ አይታየኝም።
15	I do not know; sometimes, I do not see its purpose	አላውቅም, አንዳንድ ጊዜ ዓላማው አይታየኝም::
Scoring: Original-English Version		Amharic Version
1 Does not correspond at all	7 Correspond completely	1 በፍጹም አይዛመድም	7 ሙሉ በሙሉ ይዛመዳል።

Note: Items 1-3= Intrinsic Motivation, 4-6= Identified Regulation, 7-9 = Introjected Regulation, 10-12= External Regulation, 13-15= Amotivation

Appendix 3. Teacher Well-being Scale (TWBS) both English and Amharic Version

Items	Original English Version	Amharic Version
	Currently, how do the following aspects of being a teacher affect your well-being as a teacher? Well-being refers to open, engaged, and healthy functioning as a teacher.	በአሁኑ ጊዜ የመምህርነት ሙያ የሚከተሉትን ገጽታዎች በአስተማሪነት ደህንነትዎ ላይ ምን ያክል ተጽዕኖ ያሳድራሉ? ደህንነት ማለት እንደ አስተማሪ ግልፅ ፣ ተግባራዊ እና ጤናማ ተግባርን ያመለክታል።
W1	Marking work	የተማሪ ዉጤትን ማጠናቀር ሥራ
O1	Relations with administrators at my school	በትምህርት ቤቴ ውስጥ ካሉ አስተዳዳሪዎች ጋ ያለኝ ግንኙነት
S1	Student behavior	የተማሪ ባህሪ
W2	Fitting everything into the allotted time	ሁሉንም ነገር በተመደበው ጊዜ ውስጥ ማመቻቸት
O2	Support offered by school leadership	በት / ቤት አመራር የሚሰጥ ድጋፍ
S2	Relations with students in my class	በክፍሌ ውስጥ ካሉ ተማሪዎች ጋር ያሉ ግንኙነቶች
W3	Administrative work related to teaching	ከማስተማር ጋር ተያያዥነት ያለው የአስተዳደር ሥራ
O3	Recognition for my teaching	ለመምህርነት ሙያየ ዕውቅና መስጠት
S3	Student motivation	የተማሪ ተነሳሽነት ሥራ
W4	Work I complete outside of school hours for teaching	የማስተማር ስራ ከትምህርት ሰዓት ውጭ አጠናቅቃለሁ
O4	School rules and procedures that are in place	በሥራ ላይ ያሉ የትምህርት ቤት ሕጎች እና ሂደቶች
W5	Working to finish my teaching tasks	የማስተማር ሥራዎቼን ለመጨረስ መሥራት
O5	Communication between members of the school	በትምህርት ቤቱ አባላት መካከል መግባባት
S4	Classroom management	የመማሪያ ክፍል አስተዳደር
W6	Staying late after work for meetings and activities	ለስብሰባዎች እና ለድርጊቶች ከሥራ በኋላ ዘግይተው መቆየት
O6	Participation in school-level decision making	በትምህርት ቤት ደረጃ ውሳኔ አሰጣጥ ተሳትፎ
Scoring: Original-English Version		Amharic Version
1 Negatively	7 Positively	1 በአሉታዊው 7 በአዎንታዊ

Note: W1-W6= Workload well-being factor, O1-O6= Organisational well-being factor, S1-S4=Student interaction well-being factor

Appendix 4. Coping with Stress Questionnaire (CWS-Q) both English and Amharic Version

Items	Original English Version	Amharic Version
	During stressful situations at work	በውጥረት ሁኔታዎች ስራ ቦታ ላይ
1	Adapt to the requirements	ከሁኔታዎች ጋር መላመድ
2	Considering how to adapt	እንዴት ከሁኔታዎች ጋር መላመድ እንደሚቻል ግምት ውስጥ ማስገባት::
3	I Re-evaluate the situation as positive	ሁኔታዎችን በአወንታዊ አያቸዋለሁ/እገመግማቸዋለሁ ::
4	Feel comfortable looking for another job	ሌላ ሥራ መፈለግ ይመቸኛል::
5	Examining other job opportunities	ሌሎች የሥራ እድሎችን መፈለግ
6	Have more hobbies and social activities	ብዙ የትርፍ ጊዜ ማሳለፊያዎች እና ማህበራዊ እንቅስቃሴዎች መሣተፍ::
7	Work to reduce stress	ውጥረትን ለመቀነስ ሥራ መስራት
8	Feel challenged to reduce stress	ውጥረትን ለመቀነስ ተግዳሮት መሰማት
9	examine ways to reduce stress	ውጥረትን ለመቀነስ መንገዶችን መመርመር

Scoring: Original-English Version		Amharic Version	
1	6	1	6
Very Infrequently	Very frequently	በጣም አልፎ አልፎ	በጣም በተደጋጋሚ

Note: Items 1-3= Coping through acceptance, 4-6= Coping through withdrawal, 7-9=coping through change

Appendix 5. English Version Questionnaires for Study 1 and 2

University of Szeged
Doctoral School of Education
Programme of Psychology

Questionnaire to Be Filled by University Instructors
(Study 1 and Study 2)

This questionnaire aims to obtain some relevant information about teacher well-beir psychological capital, work task motivation of teachers, and coping with stress measur Therefore, the responses obtained from you are essential to validate these measures.

The study can be accomplished only when you complete all the items honestly and genuine

The information and responses obtained from this questionnaire will be used only for tl research purpose, and your answer will be kept confidential.

Do not write your name at any place in the questionnaire.

Thank you very much for your kind cooperation!
Girum Tareke (girumtareke27@gmail.com) and Hercz Maria (Professor)

Part I- General Background Information

Direction: Here are some items about your background information. For some of the iten you are required to write the needed information in the blank space provided. For the items the form of choices, you are required to indicate your response by encircling the number your appropriate answer.

1. **Gender:** (1) Female (2) Male
2. **Age**_____
3. **University**_____
4. **Educational qualification** (1) Bachelor (2) Master (3) PhD and above
5. **Years of Teaching** (1) Below 5 years (2) 6-10 years (3) 11 years and above

Part II- Positive Psychological Capital Questionnaire (PCQ-12)

Direction: Please read each of the following statements that describe how you may think about yourself right now. And then, **encircle** one of the six alternative numbers that best describe how Strongly you Agree or Disagree with the statement about yourself. The numbers represent:

1 =strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = somewhat agree, 5 = agree, 6 = strongly agree

No	In the context of your current employment role, below are statements that describe how you may think about yourself right now. Use the following scales to indicate your level of agreement or disagreement with each statement	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
1	I feel confident in representing my work area in meetings with management	1	2	3	4	5	6
2	I feel confident contributing to discussions about the university's strategic plan	1	2	3	4	5	6
3	I feel confident presenting information to a group of colleagues	1	2	3	4	5	6
4	If I should find myself in stuff at work, I could think of many ways to get out of it.	1	2	3	4	5	6
5	Right now, I see myself as being successful at work.	1	2	3	4	5	6
6	I can think of many ways to reach my current work goals.	1	2	3	4	5	6
7	At this time, I am meeting the work goals that I have set for myself.	1	2	3	4	5	6
8	I can be "on my own," so to speak, at work if I have to.	1	2	3	4	5	6
9	I usually take stressful things at work in stride.	1	2	3	4	5	6
10	I can get through difficult times at work because I have experienced difficulty before.	1	2	3	4	5	6
11	I always look on the bright side of things regarding my job.	1	2	3	4	5	6
12	I am optimistic about what will happen to me in the future pertaining to work.	1	2	3	4	5	6

Part III- Work Task Motivation Scale for Teachers

Direction: Using the scale below indicates to what extent each of the following items presently corresponds to one of the reasons, why you are doing the teaching? And then, encircle one of the Seven alternative numbers that best describes Does not correspond at all or correspond completely with the statement about yourself.
The numbers represent 1 = It does not correspond at all, 2 = Correspond very little, 3 = Correspond a little, 4 = Correspond moderately, 5 = Correspond strongly,6= Correspond very strongly, 7=Correspond completely

No.	Statement	It does not correspond at all	Correspond very little	Correspond a little	Correspond moderately	Correspond strongly	Correspond very strongly	Correspond completely
13	Because it is pleasant to carry out this task.	1	2	3	4	5	6	7
14	Because I find this task interesting to do.	1	2	3	4	5	6	7
15	Because I like doing this task.	1	2	3	4	5	6	7
16	Because it is crucial for me to carry out this task.	1	2	3	4	5	6	7
17	Because this task allows me to attain work objectives that I consider important.	1	2	3	4	5	6	7
18	Because I find this task important for the academic success of my students.	1	2	3	4	5	6	7
19	Because if I do not carry out this task, I will feel bad.	1	2	3	4	5	6	7
20	Because I would feel guilty not doing it.	1	2	3	4	5	6	7
21	To not feel bad if I do not do it.	1	2	3	4	5	6	7
22	Because my work demands it.	1	2	3	4	5	6	7
23	Because the school obliges me to do it.	1	2	3	4	5	6	7
24	Because I'm paid to do it.	1	2	3	4	5	6	7
25	I do not know; I do not always see the relevance of carrying out this task.	1	2	3	4	5	6	7
26	I used to know why I was doing this task, but I don't see the reason anymore.	1	2	3	4	5	6	7
27	I do not know; sometimes, I do not see its purpose	1	2	3	4	5	6	7

Part IV- Teacher Well-being Scale

Direction: Please read each of the following statements carefully. For each item, think about how the following aspects of being a teacher affect your well-being as a teacher? And then, encircle one of the 7 (seven) alternative numbers that best describe how negatively or positively with the statement about yourself now.
The numbers represent 1= Negatively, 2= Mostly Negatively, 3 = More negatively than Positively, 4 = Neither Positively nor Negatively, five = More Positively than Negatively, 6 = Mostly Positively,7= Positively

Currently, how do the following aspects of being a teacher affect your well-being as a teacher? Well-being refers to open, engaged, and healthy functioning as a teacher.	Negatively	Mostly Negatively	More negatively than positively	Neither Positively nor Negatively	More Positively than Negatively	Mostly Positively	Positively
28. Marking work	1	2	3	4	5	6	7
29. Relations with administrators at my school	1	2	3	4	5	6	7
30. Student behavior	1	2	3	4	5	6	7
31. Fitting everything into the allotted time	1	2	3	4	5	6	7
32. Support offered by school leadership	1	2	3	4	5	6	7
33. Relations with students in my class	1	2	3	4	5	6	7
34. Administrative work related to teaching	1	2	3	4	5	6	7
35. Recognition for my teaching	1	2	3	4	5	6	7
36. Student motivation	1	2	3	4	5	6	7
37. Work I completed outside of school hours for teaching	1	2	3	4	5	6	7
38. School rules and procedures that are in place	1	2	3	4	5	6	7
39. Working to finish my teaching tasks	1	2	3	4	5	6	7
40. Communication between members of the school	1	2	3	4	5	6	7
41. Classroom management	1	2	3	4	5	6	7
42. Staying late after work for meetings and activities	1	2	3	4	5	6	7
43. Participation in school-level decision making	1	2	3	4	5	6	7

Part V. Global Satisfaction with Life Scale (SWLS)

Directions: Below are five statements that you may agree or disagree with satisfaction with Life Scale. SWLS is designed to measure global cognitive judgments of satisfaction with one's life. Using the 1 - 7 scale below, indicate your agreement with each item by encircling one of the 7 (seven) alternative numbers that best describe how strongly you agree or disagree with the statement about yourself now.

The numbers represent: 1= Strongly disagree, 2= Disagree, 3 = Slightly disagree, 4 = Neither agree nor disagree, 5 = Slightly agree, 6 = Agree, 7 - Strongly agree

During stressful situations at my teaching	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
44. In most ways, my life is close to my ideal.	1	2	3	4	5	6	7
45. The conditions of my life are excellent.	1	2	3	4	5	6	7
46. I am satisfied with my life.	1	2	3	4	5	6	7
47. So far**,** I have gotten the important things I want in life.	1	2	3	4	5	6	7
48. If I could live my life over, I would change almost nothing.	1	2	3	4	5	6	7

VI. Patient Health Questionnaire for Anxiety and Depression

Directions: The following set of statements deals with how you might feel about yourself and your life. Please remember that there are neither right nor wrong answers. Circle the number that best describes the degree to which you agree or disagree with each statement. The numbers indicate: 1=Not at all, 2= several days, 3= More than half the days 4=Nearly every day

During stressful situations in teaching	Not at all	several days	More than half the days	Nearly every day
49. Feeling nervous, anxious or on edge?	1	2	3	4
50. Unable able to stop or control worrying?	1	2	3	4
51. Feeling down, depressed, or hopeless?	1	2	3	4

Note: *Global Satisfaction with Life Scale and Patient Health Questionnaire for Anxiety and Depression were not included in study 2.*

Appendix 6. Amharic Version of Questionnaire for Study 1 and 2

የ ሰገድ ዩኒቨርሲቲ
የዶክትሬት ትምህርት ቤት
የሳይኮሎጂ ፕሮግራም ክፍል
በዩኒቨርሲቲ መምህራን የሚሞላ መጠይቅ

የተከበሩ የጥናቱ ተሳታፊ፡ የዚህ መጠይቅ ዋና ዓላማ ለ3ኛ ጀግሪ መመረቂያ የሚውል ስለ አስተማሪዎች ስነልቦናዊ ደህንነት፣ ስነልቦናዊ ሃብት፣ የስራ ተነሳሽነት እና ውጥረትን ለመቋቋም እና የሚያስወግዱበት እርምጃዎችን ለመመዘን የተዘጋጀ ነው:: የምትሰጡት መረጃ ሙለ በሙለ ለጥናት ብቻ የሚዉል ሲሆን ለሌላ ሰዉ ሳይነገር በሚስጥር የሚያዝ ይሆናል። ስለዚህ መልሶቻችሁን በግልፅ እና በታዕማኝነት እንዴትሰጡ በትህትና እጠይቃለሁ።

ማሳ ሰቢ: በመጠይቁ ውስጥ በማንኛውም ቦታ ስምዎን አይጻፉ::

ስለ መልካም ትብብርዎ በጣም እናመሰግናለን !

ክፍል 1፡ ጠቅላላ መረጃ
መግለጫ፡ ለተቁ 1, 4 እና 5 መልስያን በመክበብ እና አንድሁም በባዶ ቦታው መልስ በማስቀመጥ መልሶችን ያመላክቱ።
1. ጾታ፡ (1) ሴት (2) ወንድ
2. ዕድሜ_____
3. ዩኒቨርሲቲ _____
4. የትምህርት ደረጃ (1) ባችለር (2) ማስተር (3) ፒኤችዲ እና ከዚያ በላይ
5. የማስተማር ዓመታት (1) ከ 5 ዓመት በታች (2) ከ6-10 ዓመት (3) 11 ዓመት እና ከዚያ በላይ

ክፍል ሁለት: አዎንታዊ የስነ-ልቦና ሀብት መጠይቅ (Psychological Capiatl Questionnaire)

<u>አቅጣጫ፡</u>ከዚህ በመቀጠል የቀረቡት ዐረፍተ ነገሮች አሁን ካለህበት/ሽበት የስራ ድርሻ አንፃር ስለራስህ/ሽ አሁን እንዴት እንደምታስብ /ቢ የሚገልጹ መግለጫዎች አሉ። ከእያንዳንዱ መግለጫ ጋ ያለዎትን የስምምነት ደረጃ ወይም አለመግባባት ለማመልከት የሚከተሉትን ሚዛኖችን ይጠቀሙ ::
1 = በጣም አልስማማም ፣ 2 = አልስማማም ፣ 3 = በመጠኑ አልስማማም ፣ 4 = በመጠኑ እስማማለሁ ፣ 5 = እስማማለሁ ፣ 6 = በጣም እስማማለሁ

በሚከተሉት ዐ/ነገሮች በምን ያህል መጠን መስማማታችሁን ወይም አለመስማማታችሁን በማክበብ ግለፁ	በጣም አልስማማም	አልስማማም	በመጠኑ አልስማማም	በመጠኑ እስማማለሁ	እስማማለሁ	በጣም እስማማለሁ
1. ከአስተዳደር ጋር በሚደረጉ ስብሰባዎች የስራ አካባቢዬን በመወከሌ በራስ መተማመን ይሰማኛል።	1	2	3	4	5	6
2. ስለ ዩኒቨርሲቲው ስትራቴጂክ እቅድ ውይይቶች ላይ አስተዋጽዖ ስለማደርግ በራስ መተማመን ይሰማኛል ።	1	2	3	4	5	6
3. መረጃን ለሥራ ባልደረቦች በማካፈሌ በራስ መተማመን ይሰማኛል።	1	2	3	4	5	6
4. በሥራ ቦታ ራሴን ማግኘት ካለብኝ፣ ከእሱ ለመውጣት ብዙ መንገዶችን ማሰብ እችላለሁ።	1	2	3	4	5	6
5. አሁን፣ ራሴን በስራ ላይ የማየው በጣም ስኬታማ እንደሆንኩ ነው ።	1	2	3	4	5	6
6. አሁን ያስቀመጠኳቸው የስራ ግቦቼ ላይ ለመድረስ ብዙ መንገዶችን ማሰብ እችላለሁ።	1	2	3	4	5	6
7. በአሁኑ ጊዜ፣ ለራሴ ያስቀመጠኳቸውን የስራ ግቦች እያሳካሁ ነው።	1	2	3	4	5	6
8. ስለ ሥራ ጉዳይ መናገር ካለብኝ እራሴን ሆኜ መናገር እችላለሁ ።	1	2	3	4	5	6
9. ብዙውን ጊዜ በሥራ ቦታ አስጨናቂ ነገሮችን በእርጋታ አሳልፋለሁ።	1	2	3	4	5	6
10. በሥራ ቦታ አስቸጋሪ ጊዜዎችን ማለፍ እችላለሁ ምክንያቱም ከዚህ በፊት ችግር አጋጥሞ ኝ ያውቃል ።	1	2	3	4	5	6
11. ሁል ጊዜ ሥራዬን በሚመለከቱ ጉዳዮች በብሩህ ጎን እመለከታቸዋለሁ።	1	2	3	4	5	6
12. ሥራን በሚመለከት ወደፊት በብሩህ ተስፋዬ እና ቀና አመላካከት ምን እንደሚደርስብኝ እገምታለሁ።	1	2	3	4	5	6

ክፍል ሶስት፡የመምህራን የሥራ ተነሳሽነት መለኪያ(Work Task Motivation Scale for Teachers)

መመሪያ፡- ቀጥሎ በተመለከተዉ ሰንጠረዥ ዉስጥ የእርስዎን የሥራ ተነሳሽነት የሚገለፁ ዓ.ነገሮች ተዘርዝሯል፡፡በእያንዳንዱ ዓ.ነገር ፊትለፊት ድጋፉን የመፈፀም ሁኔታ የሚያመለክቱ (ከ1-7) ነጥቦች) ሚዛን ተቀምጧል፡፡ከ1-7 ከቀረቡት ነጥቦች ያንችን/ተን ሁኔታ በትክክል ይገልፃል ብለህ/ሽ የምታስበዉን /ዊን ነጥብ በእያንዳንዱ ዓ.ነገር ፊት ለፊት ከተቀመጡት አማራጮች አንዱን ክበብ/ቢ፡፡የሚከተሉትን ሚዛኖችን የሚወክሉት 1 = በፍጹም አይዛመድም ፣ 2 = በጣም ትንሽ ይዛመዳል ፣ 3 = ትንሽ ይዛመዳል ፣ 4 = በመጠኑ ይዛመዳል ፣ 5 = በጥብቅ ይዛመዳል ፣6= በጣም በጥብቅ ይዛመዳል ፣ 7= ሙሉ በሙሉ ይዛመዳል።

ከዚህ በታች ያለውን ሚዛን መጠቀም ከሚከተሉት ምክንያቶች ውስጥ እያንዳንዳቸው ምን ያህል እንደሚመሳሰሉ ያሳያል። ለምን የማስተማር ሙያ ይሠራሉ?	በፍጹም አይዛመድም	በጣም ትንሽ ይዛመዳል	ትንሽ ይዛመዳል	በመጠኑ ይዛመዳል	በጥብቅ ይዛመዳል	በጣም በጥብቅ ይዛመዳል	ሙሉ በሙሉ ይዛመዳል
13. ምክንያቱም ይህን ተግባር መፈፀም ደስ የሚል ነው።	1	2	3	4	5	6	7
14. ምክንያቱም ይህ ሥራ መሥራት አስደሳች ሆኖ አግኝቼዋለሁ።	1	2	3	4	5	6	7
15. ምክንያቱም ይህን ተግባር መሥራት እወዳለሁ።	1	2	3	4	5	6	7
16. ምክንያቱም ይህን ተግባር መስራት ለእኔ አስፈላጊ ነው::	1	2	3	4	5	6	7
17. ምክንያቱም ይህ ተግባር አስፈላጊ ብዬ የማስበውን የሥራ የን ዓላማ እንዳሳካ ስለሚያስለኝ ነው።	1	2	3	4	5	6	7
18. ምክንያቱም ይህ ተግባር ለተማሪዎቼ ትምህርታዊ ስኬት አስፈላጊ ሆኖ አግኝቼዋለሁ።	1	2	3	4	5	6	7
19. ምክንያቱም ይህን ተግባር ካላከናወንኩ መጥፎ ስሜት ይሰማኛል ::	1	2	3	4	5	6	7
20. ምክንያቱም ባለማድረግ የጥፋተኝነት ስሜት ይሰማኛል።	1	2	3	4	5	6	7
21. ካላደረግኩት መጥፎ ስሜት እንዳይሰማኝ ::	1	2	3	4	5	6	7
22. ምክንያቱም ስራዬ ይፈልገኛል።	1	2	3	4	5	6	7

ክፍል ሶስት፡የመምህራን የሥራ ተነሳሽነት መለኪያ(Work Task Motivation Scale for Teachers)

መመሪያ፡- ቀጥሎ በተመለከተዉ ሰንጠረዥ ዉስጥ የእርስዎን የሥራ ተነሳሽነት የሚገለፁ ዓ.ነገሮች ተዘርዝሯል፡፡በእያንዳንዱ ዓ.ነገር ፊትለፊት ድጋፉን የመፈፀም ሁኔታ የሚያመለክቱ (ከ1-7) ነጥቦች) ሚዛን ተቀምጧል፡፡ከ1-7 ከቀረቡት ነጥቦች ያንችን/ተን ሁኔታ በትክክል ይገልፃል ብለህ/ሽ የምታስበዉን /ዊን ነጥብ በእያንዳንዱ ዓ.ነገር ፊት ለፊት ከተቀመጡት አማራጮች አንዱን ክበብ/ቢ፡፡የሚከተሉትን ሚዛኖችን የሚወክሉት 1 = በፍጹም አይዛመድም ፣ 2 = በጣም ትንሽ ይዛመዳል ፣ 3 = ትንሽ ይዛመዳል ፣ 4 = በመጠኑ ይዛመዳል ፣ 5 = በጥብቅ ይዛመዳል ፣6= በጣም በጥብቅ ይዛመዳል ፣ 7= ሙሉ በሙሉ ይዛመዳል።

ከዚህ በታች ያለውን ሚዛን መጠቀም ከሚከተሉት ምክንያቶች ውስጥ እያንዳንዳቸው ምን ያህል እንደሚመሳሰሉ ያሳያል። ለምን የማስተማር ሙያ ይሠራሉ?	በፍጹም አይዛመድም	በጣም ትንሽ ይዛመዳል	ትንሽ ይዛመዳል	በመጠኑ ይዛመዳል	በጥብቅ ይዛመዳል	በጣም በጥብቅ ይዛመዳል	ሙሉ በሙሉ ይዛመዳል
23. ምክንያቱም ይህን ተግባር መፈፀም ደስ የሚል ነው።	1	2	3	4	5	6	7
24. ምክንያቱም ይህ ሥራ መሥራት አስደሳች ሆኖ አግኝቼዋለሁ።	1	2	3	4	5	6	7
25. ምክንያቱም ይህን ተግባር መሥራት እወዳለሁ።	1	2	3	4	5	6	7
26. ምክንያቱም ይህን ተግባር መስራት ለእኔ አስፈላጊ ነው::	1	2	3	4	5	6	7
27. ምክንያቱም ይህ ተግባር አስፈላጊ ብዬ የማስበውን የሥራ የን ዓላማ እንዳሳካ ስለሚያስለኝ ነው።	1	2	3	4	5	6	7
28. ምክንያቱም ይህ ተግባር ለተማሪዎቼ ትምህርታዊ ስኬት አስፈላጊ ሆኖ አግኝቼዋለሁ።	1	2	3	4	5	6	7
29. ምክንያቱም ይህን ተግባር ካላከናወንኩ መጥፎ ስሜት ይሰማኛል ::	1	2	3	4	5	6	7
30. ምክንያቱም ባለማድረግ የጥፋተኝነት ስሜት ይሰማኛል።	1	2	3	4	5	6	7
31. ካላደረግኩት መጥፎ ስሜት እንዳይሰማኝ ::	1	2	3	4	5	6	7
32. ምክንያቱም ስራዬ ይፈልገኛል።	1	2	3	4	5	6	7

ከዚህ በታች ያለውን ሚዛን መጠቀም ከሚከተሉት ምክንያቶች ውስጥ እያንዳንዳቸው ምን ያህል እንደሚመሳሰሉ ያሳያል። ለምን የማስተማር ሙያ ይሠራሉ?	በፍጹም አይዛመድም	በጥም ትንሽ ይዛመዳል	ትንሽ ይዛመዳል	በመጠኑ ይዛመዳል	በጥብቅ ይዛመዳል	በጣም በጥብቅ ይዛመዳል	ፍጹም ሉመሀ ሉመ
33. ምክንያቱም ትምህርት ቤቱ እንድሠራ ያስገድደኛል።	1	2	3	4	5	6	7
34. ምክንያቱም እኔ ለምሠራው ሥራ ስለ ሚከፈለኝ ነው።	1	2	3	4	5	6	7
35. አላውቅም, የማስተማር ስራ አስፈላጊነት ሁልጊዜ አይታየኝም::	1	2	3	4	5	6	7
36. የማስተማር ስራ ለምን እንደሰራሁ አውቃለሁ ፣ ግን ምክንያቱን ከአሁን በኋላ አይታየኝም።	1	2	3	4	5	6	7
37. አላውቅም, አንዳንድ ጊዜ ዓላማው አይታየኝም::	1	2	3	4	5	6	7

ክፍል አራት: የመምህርነት ሙያ የስነ ልቦና ደህንነት መለኪያ ስኬል(Teacher Well-being Scale)

ከዚህ በመቀጠል የቀረቡት ዐረፍተ ነገሮች ስለ ራሳችንና የመምህርነት ሙያ የስነ ልቦና ደህንነት የሚሰማንን ስሜት ለመለካት የተዘጋጀ ነው። በዚህ ሂደት ላይ ትክክል ወይም ስህተት መልስ አለመኖሩን ማሳሰብ እንወዳለን። ሚዛኖችን የሚወክሉት 1= በአሉታዊነት መልኩ 2= በአብዛኛው በአሉታዊ፣ 3 = አሉታዊ ከአውንታዊ የበለጠ፣ 4 =አዎንታዊም አሉታዊ ም፣ 5 = አውንታዊ ከአሉታዊ የበለጠ. 6 = በአብዛኛው በአዎንታዊ መልኩ፣7= በአዎንታዊ መልኩ፣

በአሁኑ ጊዜ የመምህርነት ሙያ የሚከተሉትን ገጽታዎች በአስተማሪነት ደህንነትዎ ላይ ምን ያክል ተጽዕኖ ያሳድራሉ? ደህንነት ማለት እንደ አስተማሪ ግልፅ ፣ ተግባራዊ እና ጤናማ ተግባርን ያመለክታል።	በአሉታዊነት መልኩ	በአብዛኛው በአሉታዊ	ሉታታዊ ከአውንታዊ የበለጠ	አዎንታዊም አሉታዊ ም ያልሆነ	አውንታዊ ከአሉታዊ የበለጠ	በአብዛኛው አዎንታዊ መልኩ	በአዎንታዊ መልኩ
38. የተማሪ ዉጤትን ማጠናቀር ሥራ	1	2	3	4	5	6	7
39. በትምህርት ቤቴ ውስጥ ካሉ አስተዳዳሪዎች ጋር ያለኝ ግንኙነት	1	2	3	4	5	6	7
40. የተማሪ ባህሪ	1	2	3	4	5	6	7
41. ሁሉንም ነገር በተመደበው ጊዜ ውስጥ ማመቻቸት	1	2	3	4	5	6	7
42. በት / ቤት አመራር የሚሰጥ ድጋፍ	1	2	3	4	5	6	7
43. በክፍሌ ውስጥ ካሉ ተማሪዎች ጋር ያሉ ግንኙነቶች	1	2	3	4	5	6	7
44. ከማስተማር ጋር ተያያዥነት ያለው የአስተዳደር ሥራ	1	2	3	4	5	6	7
45. ለመምህርነት ሙያየ ዕውቅና መስጠት	1	2	3	4	5	6	7
46. የተማሪ ተነሳሽነት ሥራ	1	2	3	4	5	6	7
47. የማስተማር ስራ ከትምህርት ሰዓት ውጭ አጠናቅቃለሁ	1	2	3	4	5	6	7
48. በሥራ ላይ ያሉ የትምህርት ቤት ሕጎች እና ሂደቶች	1	2	3	4	5	6	7
49. የማስተማር ሥራዎቼን ለመጨረስ መሥራት	1	2	3	4	5	6	7
50. በትምህርት ቤቱ አባላት መካከል መግባባት	1	2	3	4	5	6	7
51. የመማሪያ ክፍል አስተዳደር	1	2	3	4	5	6	7
52. ለስብሰባዎች እና ለድርጊቶች ከሥራ በኋላ ዘግይተው መቆየት	1	2	3	4	5	6	7
53. በትምህርት ቤት ደረጃ ውሳኔ አሰጣጥ ተሳትፎ	1	2	3	4	5	6	7

ክፍል አምስት፡ ዓለም አቀፋዊ የህይወት እርካታን መለኪያ ስኬል(Global Satisafction with Life Scale)

<u>መመሪያ</u>፡ ቀጥል በተመለ ከተዉ ሰንጠረዥ ዉስጥ ስለራስዎ የህይወት እርካታን የሚሰጡትን ግምት ለመዲሰስ የቀረቡ ዓ.ነገሮች ተዘርዝረዋል። በእያንዲንዱ ዓ.ነገር ፊት ለፊት ጭግሞ እርስዎን የሚመለክቱ (ከ1-7 ነጥቦች) አማራጮች ተቀምጠዋል። ከ 1-7 ከ ቀረቡት ነጥቦች የዕርስዎን ሁኔታ ና ህይዎት በትክክል ይገልፀኛል ብለዉ የሚያምኑበትን አማራጭ በእያንዲንዱ ዐረፍተ ነገር ፊት ለፊት ከተቀመጡት አማራጮች አንዱን ይምረጡ።

በውጥረት ሁኔታዎች ስራ ቦታ ላይ	በጥም አልስማማም	አልስማማም	ትንሽ አልስማማም	ትንሽ እስማማለሁ	እስማማለሁ	በጥም እስማማለሁ
1. በአብዛኛዎቹ በህይወቴ የምከተላቸው መንገዶች ወደፊት ህልሜ ጋር ተቀራርቧል::	1	2	3	4	5	6	7
2. ህይወቴ እጅግ በጣም ጥሩ ሁኔታ ላይ ይገኛል	1	2	3	4	5	6	7
3. በህይወቴ እርካታ ይሰማኛል	1	2	3	4	5	6	7
4. እስካሁን ድረስ ለህይወቴ ውስጥ የምፈልጋቸውን አስፈላጊ ነገሮች አግኝቻለሁ ::	1	2	3	4	5	6	7
5. በህይወቴ በህይወቴ እንደገና የመኖር እድል ባገኝ ምንም አልለውጥም ነበር::.							

ክፍል ስድስት፡የጭንቀት እና ድብርት በተመለከተ የጤንነት ሁኔታን ለመለካት የተዘጋጀ መጠይቅ (PATIENT HEALTH QUESTIONNAIRE FOR ANXIETY AND DEPRESSION)

ቀጥል በተመለ ከተዉ ሰንጠረዥ ዉስጥ እርስዎን የሚመለክቱ (ከ1-4 ነጥቦች) አማራጮች ተቀምጠዋል። ከ 1-4 ከ ቀረቡት ነጥቦች የዕርስዎን ሁኔታ በትክክል ይገልፀኛል ብለዉ የሚያምኑበትን አማራጭ በእያንዲንዱ ዐረፍተ ነገር ፊት ለፊት ከተቀመጡት አማራጮች አንዱን ይምረጡ።ሚዛኖችን የሚወክሉት 1=በፍፁም 2=ብዙ ቀናት 3=ከቀን ከግማሽ በላይ 4=በየቀኑ ማለት ይቻላል

ባለፉት ሁለት ሳምንታት ውስጥ፣ ምን ያህል ጊዜ ከሚከተሉት ታይቶ በዎታል?	በፍፁም	ብዙ ቀናት	ከቀን ከግማሽ በላይ	በየቀኑ ማለት ይቻላል
6. ጭንቀትን ማቆም ወይም መቆጣጠር አለመቻል?	1	2	3	4
7. የመንፈስ ጭንቀት፣ የመንፈስ ጭንቀት ወይም ተስፋ መቁረጥ?	1	2	3	4
8. የመንፈስ ጭንቀት፣ የመንፈስ ጭንቀት ወይም ተስፋ መቁረጥ?	1	2	3	4
9. ነገሮችን ለመስራት ትንሽ ፍላጎት ወይም ደስታ መኖር?	1	2	3	4

Appendix 7. English Version of Questionnaire for study 3 and 4

University of Szeged
Doctoral School of Education
Programme of Psychology

Questionnaire to Be Filled by University Instructors
(Study 3 and Study 4)

This questionnaire aims to obtain some relevant information about teacher well-being, psychological capital, work task motivation of teachers, and coping with stress measures. Therefore, the responses obtained from you are essential to validate these measures.

The study can be accomplished only when you complete all the items honestly and genuinely.

The information and responses obtained from this questionnaire will be used only for this research purpose, and your answer will be kept confidential.

Do not write your name at any place in the questionnaire.

Thank you very much for your kind cooperation!
Girum Tareke (girumtareke27@gmail.com) and Hercz Maria (Professor)

Part I- General Background Information

Direction: Here are some items about your background information. For some of the items, you are required to write the needed information in the blank space provided. For the items in the form of choices, you are required to indicate your response by encircling the number of your appropriate answer.

1. **Gender:** (1) Female (2) Male
2. **Age**_____
3. **University**_____
4. **Educational qualification** (1) Bachelor (2) Master (3) PhD and above
5. **Years of Teaching** (1) Below 5 years (2) 6-10 years (3) 11 years and above

Part II- Positive Psychological Capital Questionnaire (PCQ-12)

Direction: Please read each of the following statements that describe how you may think about yourself right now. And then, **encircle** one of the six alternative numbers that best describe how Strongly you Agree or Disagree with the statement about yourself. The numbers represent:

1 =strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = somewhat agree, 5 = agree, 6 = strongly agree

No	In the context of your current employment role, below are statements that describe how you may think about yourself right now. Use the following scales to indicate your level of agreement or disagreement with each statement	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
1	I feel confident in representing my work area in meetings with management	1	2	3	4	5	6
2	I feel confident contributing to discussions about the university's strategic plan	1	2	3	4	5	6
3	I feel confident presenting information to a group of colleagues	1	2	3	4	5	6
4	If I should find myself in stuff at work, I could think of many ways to get out of it.	1	2	3	4	5	6
5	Right now, I see myself as being successful at work.	1	2	3	4	5	6
6	I can think of many ways to reach my current work goals.	1	2	3	4	5	6
7	At this time, I am meeting the work goals that I have set for myself.	1	2	3	4	5	6
8	I can be "on my own," so to speak, at work if I have to.	1	2	3	4	5	6
9	I usually take stressful things at work in stride.	1	2	3	4	5	6
10	I can get through difficult times at work because I have experienced difficulty before.	1	2	3	4	5	6
11	I always look on the bright side of things regarding my job.	1	2	3	4	5	6
12	I am optimistic about what will happen to me in the future pertaining to work.	1	2	3	4	5	6

Part III- Work Task Motivation Scale for Teachers

Direction: Using the scale below indicates to what extent each of the following items presently corresponds to one of the reasons, why you are doing the teaching? And then, encircle one of the Seven alternative numbers that best describes Does not correspond at all or correspond completely with the statement about yourself.
The numbers represent 1 = It does not correspond at all, 2 = Correspond very little, 3 = Correspond a little, 4 = Correspond moderately, 5 = Correspond strongly,6= Correspond very strongly, 7=Correspond completely

No.	Statement	It does not correspond at all	Correspond very little	Correspond a little	Correspond moderately	Correspond strongly	Correspond very strongly	Correspond completely
13	Because it is pleasant to carry out this task.	1	2	3	4	5	6	7
14	Because I find this task interesting to do.	1	2	3	4	5	6	7
15	Because I like doing this task.	1	2	3	4	5	6	7
16	Because it is crucial for me to carry out this task.	1	2	3	4	5	6	7
17	Because this task allows me to attain work objectives that I consider important.	1	2	3	4	5	6	7
18	Because I find this task important for the academic success of my students.	1	2	3	4	5	6	7
19	Because if I do not carry out this task, I will feel bad.	1	2	3	4	5	6	7
20	Because I would feel guilty not doing it.	1	2	3	4	5	6	7
21	To not feel bad if I do not do it.	1	2	3	4	5	6	7
22	Because my work demands it.	1	2	3	4	5	6	7
23	Because the school obliges me to do it.	1	2	3	4	5	6	7
24	Because I'm paid to do it.	1	2	3	4	5	6	7
25	I do not know; I do not always see the relevance of carrying out this task.	1	2	3	4	5	6	7
26	I used to know why I was doing this task, but I don't see the reason anymore.	1	2	3	4	5	6	7
27	I do not know; sometimes, I do not see its purpose	1	2	3	4	5	6	7

Part IV- Teacher Well-being Scale

Direction: Please read each of the following statements carefully. For each item, think about how the following aspects of being a teacher affect your well-being as a teacher? And then, encircle one of the 7 (seven) alternative numbers that best describe how negatively or positively with the statement about yourself now.
The numbers represent 1= Negatively, 2= Mostly Negatively, 3 = More negatively than Positively, 4 = Neither Positively nor Negatively, five = More Positively than Negatively, 6 = Mostly Positively,7= Positively

Currently, how do the following aspects of being a teacher affect your well-being as a teacher? Well-being refers to open, engaged, and healthy functioning as a teacher.	Negatively	Mostly Negatively	More negatively than positively	Neither Positively nor Negatively	More Positively than Negatively	Mostly Positively	Positively
28. Marking work	1	2	3	4	5	6	7
29. Relations with administrators at my school	1	2	3	4	5	6	7
30. Student behavior	1	2	3	4	5	6	7
31. Fitting everything into the allotted time	1	2	3	4	5	6	7
32. Support offered by school leadership	1	2	3	4	5	6	7
33. Relations with students in my class	1	2	3	4	5	6	7
34. Administrative work related to teaching	1	2	3	4	5	6	7
35. Recognition for my teaching	1	2	3	4	5	6	7
36. Student motivation	1	2	3	4	5	6	7
37. Work I completed outside of school hours for teaching	1	2	3	4	5	6	7
38. School rules and procedures that are in place	1	2	3	4	5	6	7
39. Working to finish my teaching tasks	1	2	3	4	5	6	7
40. Communication between members of the school	1	2	3	4	5	6	7
41. Classroom management	1	2	3	4	5	6	7
42. Staying late after work for meetings and activities	1	2	3	4	5	6	7
43. Participation in school-level decision making	1	2	3	4	5	6	7

Part V. Coping with Stress Questionnaire (CWS-Q)

Directions: The following statements are measures that deal with your behaviour in stressful conditions. And then**, circle one** of the 6(six) alternative numbers that best describe yourself. The numbers represent 1=Very infrequently, 2=Infrequently, 3=Quite infrequently, 4=Quite frequently, 5=Frequently, 6= Very frequently

During stressful situations in teaching	Very infrequently	Infrequently	Quite infrequently	Quite frequently	Frequently	Very frequently
44. Adapt to the requirements	1	2	3	4	5	6
45. Considering how to adapt	1	2	3	4	5	6
46. I re-evaluate the situation as positive	1	2	3	4	5	6
47. Feel comfortable looking for another job	1	2	3	4	5	6
48. Examining other job opportunities	1	2	3	4	5	6
49. Have more hobbies and social activities	1	2	3	4	5	6
50. Look for another job	1	2	3	4	5	6
51. Work to reduce stress	1	2	3	4	5	6
52. Feel challenge to reduce stress	1	2	3	4	5	6
53. examine ways to reduce stress	1	2	3	4	5	6

Note: Item 50, "Look for another job" was discarded in study 4 due to the poor factorial loading in study 3.

Appendix 8. Amharic Version of Questionnaire for Studies 3 and 4

የ ሰገድ ዩኒቨርሲቲ
የዶክትሬት ትምህርት ቤት
የሳይኮሎጂ ፕሮግራም ክፍል
በዩኒቨርሲቲ መምህራን የሚሞላ መጠይቅ

የተከበሩ የጥናቱ ተሳታፊ፡ የዚህ መጠይቅ ዋና ዓላማ ለ3ኛ ጀግሪ መመረቂያ የሚውል ስለ አስተማሪዎች ስነልቦናዊ ደህንነት፣ ስነልቦናዊ ሃብት፣ የስራ ተነሳሽነት እና ውጥረትን ለመቋቋም እና የሚያስወግዱበት እርምጃዎችን ለመመዘን የተዘጋጀ ነው:: የምትሰጡት መረጃ ሙለ በሙለ ለጥናቱ ብቻ የሚዉል ሲሆን ለሌላ ሰዉ ሳይነገር በሚስጥር የሚያዝ ይሆናል። ስለዚህ መልሶቻችሁን በግልፅ እና በታዕማኝነት እንዴትሰጡ በትህትና እጠይቃለሁ።

ማሳ ሰቢ: በመጠይቁ ውስጥ በማንኛውም ቦታ ስምዎን አይጻፉ::

ስለ መልካም ትብብርዎ በጣም እናመሰግናለን !

ክፍል 1፡ ጠቅላላ መረጃ

መግለጫ፡ ለተቁ 1, 4 እና 5 መልስያን በመክበብ እና አንድሁም በባዶ ቦታው መልስ በማስቀመጥ መልሶችን ያመላክቱ።

1. ጸታ፡ (1) ሴት (2) ወንድ
2. ዕድሜ_____
3. ዩኒቨርሲቲ _____
4. የትምህርት ደረጃ (1) ባችለር (2) ማስተር (3) ፒኤችዲ እና ከዚያ በላይ
5. የማስተማር ዓመታት (1) ከ 5 ዓመት በታች (2) ከ6-10 ዓመት (3) 11 ዓመት እና ከዚያ በላይ

ክፍል ሁለት: አዎንታዊ የስነ-ልቦና ሀብት መጠይቅ (Psychological Capiatl Questionnaire)

አቅጣጫ፡ከዚህ በመቀጠል የቀረቡት ዐረፍተ ነገሮች አሁን ካለህበት/ሽበት የስራ ድርሻ አንፃር፣ ስለራስህ/ሽ አሁን እንዴት እንደምታስብ /ቢ የሚገልጹ መግለጫዎች አሉ። ከእያንዳንዱ መግለጫ ጋር ያለዎትን የስምምነት ደረጃ ወይም አለመግባባት ለማመልከት የሚከተሉትን ሚዛኖችን ይጠቀሙ ::
1 = በጣም አልስማማም ፣ 2 = አልስማማም ፣ 3 = በመጠኑ አልስማማም ፣ 4 = በመጠኑ እስማማለሁ ፣ 5 = እስማማለሁ ፣ 6 = በጣም እስማማለሁ

በሚከተሉት ዐ/ነገሮች በምን ያህል መጠን መስማማታችሁን ወይም አለመስማማታችሁን በማክበብ ግለፁ	በጣም አልስማማም	አልስማማም	በመጠኑ አልስማማም	በመጠኑ እስማማለሁ	እስማማለሁ	በጣም እስማማለሁ
1. ከአስተዳደር ጋር በሚደረጉ ስብሰባዎች የስራ አካባቢዬን በመወከሌ በራስ መተማመን ይሰማኛል።	1	2	3	4	5	6
2. ስለ ዩኒቨርሲቲው ስትራቴጂክ እቅድ ውይይቶች ላይ አስተዋጽዖ ስለማደርግ በራስ መተማመን ይሰማኛል::	1	2	3	4	5	6
3. መረጃን ለሥራ ባልደረቦች በማካፈሌ በራስ መተማመን ይሰማኛል።	1	2	3	4	5	6
4. በሥራ ቦታ ራሴን ማግኘት ካለብኝ፣ ከእሱ ለመውጣት ብዙ መንገዶችን ማሰብ እችላለሁ።	1	2	3	4	5	6
5. አሁን፣ ራሴን በስራ ላይ የማየው በጣም ስኬታማ እንደሆንኩ ነው ።	1	2	3	4	5	6
6. አሁን ያስቀመጠኳቸው የስራ ግቦቼ ላይ ለመድረስ ብዙ መንገዶችን ማሰብ እችላለሁ።	1	2	3	4	5	6
7. በአሁኑ ጊዜ፣ ለራሴ ያስቀመጠኳቸውን የስራ ግቦች እያሳካሁ ነው።	1	2	3	4	5	6
8. ስለ ሥራ ጉዳይ መናገር ካለብኝ እራሴን ሆኜ መናገር እችላለሁ::	1	2	3	4	5	6
9. ብዙውን ጊዜ በሥራ ቦታ አስጨናቂ ነገሮችን በእርጋታ አሳልፋልሁ።	1	2	3	4	5	6
10. በሥራ ቦታ አስቸጋሪ ጊዜዎችን ማለፍ እችላለሁ ምክንያቱም ከዚህ በፊት ችግር አጋጥሞ ኝ ያውቃል::	1	2	3	4	5	6
11. ሁል ጊዜ ሥራዬን በሚመለከቱ ጉዳዮች በብሩህ ጎን እመለከታቸዋለሁ።	1	2	3	4	5	6
12. ሥራን በሚመለከት ወደፊት በብሩህ ተስፋዬ እና ቀና አመላካከት ምን እንደሚደርስብኝ እገምታለሁ።	1	2	3	4	5	6

ክፍል ሶስት፡የመምህራን የሥራ ተነሳሽነት መለኪያ(Work Task Motivation Scale for Teachers)

መመሪያ፡- ቀጥሎ በተመለከተዉ ሰንጠረዥ ዉስጥ የእርስዎን የሥራ ተነሳሽነት የሚገለፁ ዓ.ነገሮች ተዘርዝሯል።በእያንዳንዱ ዓ.ነገር ፊትለፊት ድጋፉን የመፈፀም ሁኔታ የሚያመለክቱ (ከ1-7) ነጥቦች) ሚዛን ተቀምጧል።ከ1-7 ከቀረቡት ነጥቦች ያንችን/ተን ሁኔታ በትክክል ይገልፃል ብለህ/ሽ የምታስበዉን/ዊን ነጥብ በእያንዳንዱ ዓ.ነገር ፊት ለፊት ከተቀመጡት አማራጮች አንዱን ክበብ/ቢ።የሚከተሉትን ሚዛኖችን የሚወክሉት 1 = በፍጹም አይዛመድም ፣ 2 = በጣም ትንሽ ይዛመዳል ፣ 3 = ትንሽ ይዛመዳል ፣ 4 = በመጠኑ ይዛመዳል ፣ 5 = በጥብቅ ይዛመዳል ፣6= በጣም በጥብቅ ይዛመዳል ፣ 7= ሙሉ በሙሉ ይዛመዳል።

ኒህ በታች ያለውን ሚዛን መጠቀም ከሚከተሉት ክንያቶች ውስጥ እያንዳንዳቸው ምን ያህል ደሚመሳሰሉ ያሳያል። ለምን የማስተማር ሙያ ሥራሉ?	በፍጹም አይዛመድም	በጣም ትንሽ ይዛመዳል	ትንሽ ይዛመዳል	በመጠኑ ይዛመዳል	በጥብቅ ይዛመዳል	በጣም በጥብ	ሙሉ በሙሉ ይዛመዳል
ምክንያቱም ይህን ተግባር መፈፀም ደስ የሚል ነው።	1	2	3	4	5	6	7
ምክንያቱም ይህ ሥራ መሥራት አስደሳች ሆኖ አግኝቼዋለሁ።	1	2	3	4	5	6	7
ምክንያቱም ይህን ተግባር መሥራት እወዳለሁ።	1	2	3	4	5	6	7
ምክንያቱም ይህን ተግባር መስራት ለእኔ አስፈላጊ ነው::	1	2	3	4	5	6	7
ምክንያቱም ይህ ተግባር አስፈላጊ ብዬ የማስበውን የሥራ የን ዓላማ እንዳሳካ ስለሚያስለኝ ነው።	1	2	3	4	5	6	7
ምክንያቱም ይህ ተግባር ለተማሪዎቼ ትምህርታዊ ስኬት አስፈላጊ ሆኖ አግኝቼዋለሁ።	1	2	3	4	5	6	7
ምክንያቱም ይህን ተግባር ካላከናወንኩ መጥፎ ስሜት ይሰማኛል::	1	2	3	4	5	6	7
ምክንያቱም ባለማድረግ የጥፋተኝነት ስሜት ይሰማኛል።	1	2	3	4	5	6	7
ካላደረግኩት መጥፎ ስሜት እንዳይሰማኝ::	1	2	3	4	5	6	7
. ምክንያቱም ስራዬ ይፈልገኛል።	1	2	3	4	5	6	7
. ምክንያቱም ትምህርት ቤቱ እንድሠራ ያስገድደኛል።	1	2	3	4	5	6	7
. ምክንያቱም እኔ ለምሠራው ሥራ ስለ ሚከፈለኝ ነው።	1	2	3	4	5	6	7

ክፍል አራት: የመምህርነት ሙያ የስነ ልቦና ደህንነት መለኪያ ስኬል(Teacher Well-being Scale)

ከዚህ በመቀጠል የቀረቡት ዐረፍተ ነገሮች ስለ ራሳችንና የመምህርነት ሙያ የስነ ልቦና ደህንነት የሚሰማንን ስሜት ለመለካት የተዘጋጀ ነው። በዚህ ሂደት ላይ ትክክል ወይም ስህተት መልስ አለመኖሩን ማሳሰብ እንወዳለን። ሚዛኖችን የሚወክሉት 1= በአሉታዊነት መልኩ 2= በአብዛኛው በአሉታዊ፣ 3 = አሉታዊ ከአውንታዊ የበለጠ፣ 4 =አዎንታዊም አሉታዊ ም፣ 5 = አውንታዊ ከአሉታዊ የበለጠ. 6 = በአብዛኛው በአዎንታዊ መልኩ፣7= በአዎንታዊ መልኩ፣

በአሁኑ ጊዜ የመምህርነት ሙያ የሚከተሉትን ገጽታዎች በአስተማሪነት ደህንነትዎ ላይ ምን ያክል ተጽዕኖ ያሳድራሉ? ደህንነት ማለት እንደ አስተማሪ ግልፅ ፣ ተግባራዊ እና ጤናማ ተግባርን ያመለክታል።	በአሉታዊነት መልኩ	በአብዛኛው በአሉታዊ	አሉታዊ ከአውንታዊ የበለጠ	አዎንታዊም አሉታዊ ም ያልሆነ	አውንታዊ ከአሉታዊ የበለጠ	በአብዛኛው አዎንታዊ መልኩ	በአዎንታዊ መልኩ
1. የተማሪ ዉጤትን ማጠናቀር ሥራ	1	2	3	4	5	6	7
2. በትምህርት ቤቴ ውስጥ ካሉ አስተዳዳሪዎች ጋር ያለኝ ግንኙነት	1	2	3	4	5	6	7
3. የተማሪ ባህሪ	1	2	3	4	5	6	7
4. ሁሉንም ነገር በተመደበው ጊዜ ውስጥ ማመቻቸት	1	2	3	4	5	6	7
5. በት / ቤት አመራር የሚሰጥ ድጋፍ	1	2	3	4	5	6	7
6. በክፍሌ ውስጥ ካሉ ተማሪዎች ጋር ያሉ ግንኙነቶች	1	2	3	4	5	6	7
7. ከማስተማር ጋር ተያያዥነት ያለው የአስተዳደር ሥራ	1	2	3	4	5	6	7
8. ለመምህርነት ሙያየ ዕውቅና መስጠት	1	2	3	4	5	6	7
9. የተማሪ ተነሳሽነት ሥራ	1	2	3	4	5	6	7
10. የማስተማር ስራ ከትምህርት ሰዓት ውጭ አጠናቅቃለሁ	1	2	3	4	5	6	7
11. በሥራ ላይ ያሉ የትምህርት ቤት ሕጎች እና ሂደቶች	1	2	3	4	5	6	7
12. የማስተማር ሥራዎቼን ለመጨረስ መሥራት	1	2	3	4	5	6	7
13. በትምህርት ቤቱ አባላት መካከል መግባባት	1	2	3	4	5	6	7
14. የመማሪያ ክፍል አስተዳደር	1	2	3	4	5	6	7
15. ለስብሰባዎች እና ለድርጊቶች ከሥራ በኋላ ዘግይተው መቆየት	1	2	3	4	5	6	7
16. በትምህርት ቤት ደረጃ ውሳኔ አሰጣጥ ተሳትፎ	1	2	3	4	5	6	7

ክፍል አምስት፡ የውጥረት ሁኔታዎች ስራ ቦታ ላይ በተመለከተ

መመሪያ፡- ቀጥሎ በተመለከተዉ ሰንጠረዥ ዉስጥ ስራ ቦታ ላይ የሚያጋጥሙ የውጥረት ሁኔታዎች በተመለከተ የሚያመለክቱ ዓ.ነገሮች ተዘርዝሯል።በእያንዳንዱ ዓ.ነገር ፊትለፊት ድጋፉን የመፈፀም ሁኔታ የሚያመለክቱ (ከ1-6) ነጥቦች) ሚዛን ተቀምጧል።ከ1-6 ከቀረቡት ነጥቦች ያንችን/ተን ሁኔታ በትክክል ይገልፃል ብለህ/ሽ የምታምንበትን/ችበትን ነጥብ በእያንዳንዱ ዓ.ነገር ፊት ለፊት ከተቀመጡት አማራጮች አንዱን ክበብ/ቢ::ቁጥሮቹ የሚወክሉት 1 = በጣም አልፎ አልፎ፣ 2 = አልፎ አልፎ ፣ 3 = በመጠኑ አልፎ አልፎ ፣ 4 = በመጠኑ በተደጋጋሚ፣ 5 = በተደጋጋሚ ፣6= በጣም በተደጋጋ

በውጥረት ሁኔታዎች ስራ ቦታ ላይ	በጣም አልፎ አልፎ	አልፎ አልፎ	በመጠኑ አልፎ አልፎ	በመጠኑ በተደጋጋሚ	በተደጋጋሚ	በጣም በተደጋጋ
1. ከሁኔታዎች ጋር መላመድ	1	2	3	4	5	6
2. እንዴት ከሁኔታዎች ጋር መላመድ እንደሚቻል ግምት ውስጥ ማስገባት::	1	2	3	4	5	6
3. ሁኔታዎችን በአወንታዊ አያቸዋለሁ/እገመግማቸዋለሁ ::	1	2	3	4	5	6
4. ሌላ ሥራ መፈለግ ይመቸኛል::	1	2	3	4	5	6
5. ሌሎች የሥራ እድሎችን መፈለግ	1	2	3	4	5	6
6. ብዙ የትርፍ ጊዜ ማሳለፊያዎች እና ማህበራዊ እንቅስቃሴዎች መሣተፍ::	1	2	3	4	5	6
7. ሌላ ሥራ በማፈላለግ ላይ ነኝ	1	2	3	4	5	6
8. ውጥረትን ለመቀነስ ሥራ መስራት	1	2	3	4	5	6
9. ውጥረትን ለመቀነስ ተግዳሮት መሰማት	1	2	3	4	5	6
10. ውጥረትን ለመቀነስ መንገዶችን መመርመር	1	2	3	4	5	6

Appendix 9. Psychological Capital Questionnaire Research Permission

Psychological Capital Questionnaire Research Permission

Fred Luthans, Bruce J. Avolio, and James B. Avey

Prepared on February 8, 2019 for:

Girum Tareke

You completed your evaluation at 1:20 pm EST on February 08, 2019.

mind garden

To whom it may concern,

This letter is to grant permission for Girum Tareke to use the following copyright material:

Instrument: ***Psychological Capital (PsyCap) Questionnaire (PCQ)***

Authors: ***Fred Luthans, Bruce J. Avolio & James B. Avey.***

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for his/her thesis/dissertation research.

Three sample items from this instrument may be reproduced for inclusion in a proposal, thesis, or dissertation.

The entire instrument may not be included or reproduced at any time in any other published material.

Sincerely,

Mind Garden, Inc.
www.mindgarden.com

Appendix 10. Psychological Capital Questionnaire Translation Permission

Effective date is February 3, 2022 for:

Girum Tareke

You submitted your translation agreement request at 7:51 am EDT on September 27, 2019.

Appendix 11. Ethical Approval Letter from Institutional Review Board, Doctoral School of Education

University of Szeged
Institutional Review Board
Doctoral School of Education

6722 Szeged, 30-34 Petőfi S. Av., Hungary
Phone/fax: +36 62 544-032

Girum Tareke ZEwude
PhD Student: Doctoral School of Education
Reference number: 26/2019
Subject: Ethical evaluation of a research project

ETHICAL APPROVAL

The Insitutional Review Board (IRB) of the Doctoral School of Education, University of Szeged has recently reviewed your application for an ethical approval (Title of the Research Project: "*The Role of Psychological Capital in prediction of Higher Education Teachers' Well-being in Ethiopia: Motivation as a Mediator*", senior researcher: Herz Mária). This proposal is deemed to meet the requirements of the ethical conducts on social research with human subjects of the Doctoral School of Education, University of Szeged.

IRB decision: approved

Justification: The research project meets the requirements of the professional-ethical criteria of the social research including human subjects within the field of educational science. The overall study including the research has been sponsored by Stipendium Hungaricum Scholarship of Tempus Public Foundation, Hungary and financial support from Ministry of Technology and Higher Education, Ethiopia. Participants are teachers from universities in Ethiopia. The data will be collected by questionnaires (paper-and-pencil). All participants will be asked for informed consent in written form. Participation in data collection is voluntary. Confidentiality and anonymity will be guaranteed. Procedure of the data collection does not harm their privacy law, it does not have an impact on the students' mental or physical health. Data cannot be handled by persons to whom they are not concerned.

In a summary, full ethical approval has been granted.

We wish you all the best for the conduct of the project.

Date: 17 November, 2019

Prof. Dr. Bettina Pikó
IRB coordinator

Appendix 12. Permission Letter for Data Collection from the Amhara Regional State Universities Forum

በአማራ ክልል የሚገኙ የከፍተኛ ትምህርት ተቋማት ፎረም
Forum for Higher Educational Institutions in the Amhara Region

ቁጥር፡ አዩፍ /1.712 /14
Ref. No.
ቀን፡ 16 May / 2022
Date

Subject: **Collaboration to Conduct Research in the Universities**

Kindly be informed that collaboration letter to conduct research for your fulfillment of your doctoral degree in our Forum member universities found in Amhara Region, herewith granted in all four phases of inquiry by Girum Tareke Zewude.

I appreciate in advance the universities to cooperate and support the data collection process as well as material support, if need, procedurally to ensure that the research ethics are adhered to and disruption of the data collection is avoided. Furthermore, we humbly request the student to share your research findings to the universities or to research directorate offices of each respective university.

I wish you the best in conducting your research and I look forward to hearing from you soon.

Best regards,

አስማረ ደጀን ደመቀ (ዶ/ር)
ዋና ፀሀፊ
Asmare Dejen Demeke (PhD)
Secretariat General

☎ 0583206064 ✉ 1843 E-mail:
forumunianrs14@gmail.com

Together, we can make a difference!!

Appendix 13. ANOVA Table Summary of the Socio-demographic Factors

	Age groups	N	Mean	Std. Deviation		Sum of Squares	df	Mean Square	F	Sig.
TWBS	25-35	651	65.562	9.602	Between Groups	7267.783	2	3633.892	37.731	.000
	36-45	258	70.705	10.167	Within Groups	92940.250	965	96.311		
	46 & above	59	73.576	10.531						
	Total	968	67.421	10.179	Total	100208.033	967			
PSYCAP	25-35	651	50.399	7.497	Between Groups	7567.896	2	3783.948	67.916	.000
	36-45	258	55.511	7.608	Within Groups	53764.794	965	55.715		
	46 & above	59	58.881	6.371						
	Total	968	52.278	7.964	Total	61332.690	967			
MOT	25-35	651	50.863	8.099	Between Groups	613.478	2	306.739	4.660	.010
	36-45	258	49.077	7.982						
	46 & above	59	49.695	8.810	Within Groups	63521.791	965	65.826		
	Total	968	50.316	8.144	Total	64135.269	967			
CWS	25-35	651	30.915	5.889	Between Groups	1568.470	2	784.235	21.431	.000
	36-45	258	33.112	6.594	Within Groups	35312.026	965	36.593		
	46 & above	59	35.034	5.249						
	Total	968	31.752	6.176	Total	36880.496	967			
TWBS	Bachelor	368	64.122	8.344	Between Groups	7267.783	2	3633.892	37.731	.000

	Master	496	68.223	10.310	Within Groups	92940.250	965	96.311		
	PhD & above	104	75.269	10.481						
	Total	968	67.421	10.180	Total	100208.033	967			
PSYCAP	Bachelor	368	48.578	6.420	Between Groups	11570.223	2	5785.112	112.186	.000
	Master	496	53.451	7.953	Within Groups	49762.467	965	51.567		
	PhD & above	104	59.778	5.682						
	Total	968	52.278	7.964	Total	61332.690	967			
MOT	Bachelor	368	53.108	8.095	Between Groups	4852.348	2	2426.174	39.493	.000
	Master	496	48.324	6.804						
	PhD & Above	104	49.932	10.935	Within Groups	59282.921	965	61.433		
	Total	968	50.316	8.143	Total	64135.269	967			
CWS	Bachelor	368	30.497	6.238	Between Groups	2935.573	2	1467.786	41.727	.000
	Master	496	31.685	5.802	Within Groups	33944.923	965	35.176		
	Phd & Above	104	36.509	5.397						
	Total	968	31.752	6.176	Total	36880.496	967			
TWBS	Research University	361	68.617	10.310	Between Groups	928.967	2	464.484	4.515	.011
	Applied University	299	67.120	9.115	Within Groups	99279.066	965	102.880		
	General University	308	66.287	10.915						
	Total	968	67.421	10.180	Total	100208.033	967			
PSYCAP	Research University	361	53.534	8.322	Between Groups	1660.289	2	830.144	13.425	.000
	Applied University	299	52.662	7.852	Within Groups	59672.401	965	61.837		

	General University	308	50.435	7.301						
	Total	968	52.278	7.964	Total	61332.690	967			
MOT	Research University	361	48.892	7.727	Between Groups	2603.665	2	1301.832	20.417	.000
	Applied University	299	49.602	8.326						
	General University	308	52.678	7.944	Within Groups	61531.604	965	63.763		
	Total	968	50.316	8.144	Total	64135.269	967			
CWS	Research University	361	33.199	6.077	Between Groups	64135.269	967	655.744	17.791	.000
	Applied University	299	31.392	6.535	Within Groups	1311.489	2	36.859		
	General University	308	30.468	5.545		35569.007	965			
	Total	968	31.752	6.175	Total	36880.496	967			
TWBS	Below 5years	368	64.152	8.385	Between Groups	1311.489	2	655.744	17.791	.000
	6-10 years	217	68.331	10.449	Within Groups	35569.007	965	36.859		
	11 years &above	383	70.047	10.741						
	Total	968	67.421	10.180	Total	36880.496	967			
PSYCAP	Below 5years	368	48.527	6.323	Between Groups	8859.422	2	4429.711	81.464	.000
	6-10 years	217	53.364	7.842	Within Groups	52473.268	965	54.376		
	11 years &above	383	55.269	8.011						
	Total	968	52.2789	7.964	Total	61332.690	967			
MOT	Below 5years	368	53.098	8.095	Between Groups	4623.041	2	2311.521	37.482	.000
	6-10 years	217	48.318	6.924						
	11 years &above	383	48.775	8.107	Within Groups	59512.227	965	61.671		

	Total	968	50.316	8.144	Total	64135.269	967			
CWS	Below 5years	368	30.489	6.226	Between Groups	1137.099	2	568.550	15.350	.000
	6-10 years	217	31.778	5.466	Within Groups	35743.396	965	37.040		
	11 years &above	383	32.950	6.278						
	Total	968	31.752	6.175	Total	36880.496	967			

Appendix 14. The Tukey Post hoc Multiple Comparisons Test

	Age of the Respondent	**Mean Difference**		
		25-35	**36-45**	**46 & above**
Teacher well-Being	25-35	–		
	36-45	-5.14321*	–	–
	46 & above	-8.01406*	-2.87084	–
PsyCap	25-35	-		–
	36-45	-5.11224*	–	–
	46 & above	-8.48197*	-3.36973*	–
Work task Motivation	25-35	–	–	–
	36-45	1.78577*	–	–
	46 & above	1.16837	-.61740	–
Coping with Stress	25-35	–	–	–
	36-45	-2.19689*	–	–
	46 & above	-4.11838*	-1.92150	–
	Educational Qualification			
	Categories	Mean Difference **Bachelor**	**Master**	**Ph.D. & above**
Teacher well-Being	Bachelor	–		
	Master	-4.10151*	–	–
	PhD & above	-11.14695*	-7.04544*	–
PsyCap	Bachelor	-		–
	Master	-4.87281*	–	–
	PhD & above	-11.20004*	-6.32723*	–
Teacher Motivation	Bachelor	–	–	–
	Master	4.78410*	–	–
	PhD & above	3.17600*	-1.60810	–
Coping with Stress	Bachelor	–	–	–

	Master	-1.18820*	–	–
	PhD & above	-6.01233*	-4.82413	–

University Type

	University Types	**Mean Difference**		
		Research University	**Applied University**	**General University**
Teacher well-Being	Research University	–		
	Applied University	2.33010*	–	–
	General University	1.49760	-.83250	–
PsyCap	Research University	-		–
	Applied University	.87242	–	–
	General University	3.09956*	2.22714*	–
	Research University	–	–	–
Teacher Motivation	Applied University	-.71004	–	–
	General University	-3.78660*	-3.07656*	–
Coping with Stress	Research University	–	–	–
	Applied University	2.73122*	–	–
	General University	1.89750*	-.83372	–

Teaching Experience

	Categories	Mean Difference		
		Below 5years	**6-10 years**	**11 years & above**
	Below 5years	–		
Teacher well-Being	6-10 years	-4.17962*	–	–
	11 years &above	-5.89482*	-1.71520	–
PsyCap	Below 5years	–		
	6-10 years	-4.83688*	–	–
	11 years &above	-6.74176*	-1.90487*	–
	Below 5years	-		–
Teacher Motivation	6-10 years	4.77985*	–	–
	11 years &above	4.32237*	-.45748	–
Coping with Stress	Below 5years	–	–	–

6-10 years	-1.28967*	–	–
11 years &above	-2.46126*	-1.17159	–