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Developing Psychometric Property on the Psychological Capital Scale for Vocational High Schools in Indonesia

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Abstract. Efforts to understand psychological capital (PsyCap) in positive psychological intervention efforts in education are believed to improve teacher performance. The development of a PsyCap scale in vocational education is very important because it has not been widely implemented in Indonesia. This study aims to develop a new, valid, and reliable Teachers' Psychological Capital Scale (TPCS) based on a psychometric approach uses research development. In all, there are nine processes involved in the three stages (item development, scale development, and scale evaluation) of establishing a rigorous scale. Data analysis to test the validity of the items using structural equation models (SEM) with confirmatory factor analysis (CFA) techniques. The TPCS measurement tool consists of 24 items that describe four dimensions, i.e. self-efficacy, optimism, hope, and resilience. The research subjects were vocational school teachers (N = 300) spread across 10 districts in Indonesia. The results of the study show that the PsyCap measurement model fits significantly with the data, meaning that TPCS has strong psychometric feasibility and the deviation from the existing measurements is not substantial. Thus, TPCS is suitable for assessing teachers' PsyCap in a more general sense. Further research into TPCS is made easier now that scientists and practitioners have a deeper grasp of the ontology and technique of scale building and validation thanks to this work.

Keywords: hope; optimism; resiliency; self-efficacy; Teacher Psychological Capital

1. Introduction

Positive psychological approaches to organizational behavior and culture in public companies have been included into contemporary theories of management (Buchanan, 2015). Committed personnel that take pride in their job and actively contribute to the establishment of industry-leading benchmarks are essential in today's competitive business environment (Ben Moussa & El Arbi, 2020). Proactively encouraging a positive psychological approach and avoiding highlighting the negative with regards to instructors and pupils is essential for

schools to follow the contemporary organizational ideas (Um-E-Rubbab & Mehdi Raza Naqvi, 2020). When applied to employees, stakeholders, and the company as a whole, positive psychology has a tendency to spark innovation and revitalize operations (Zafar et al., 2017). When confronting complicated conditions and the new normal that has emerged in the wake of the Covid-19 epidemic, the positive psychology method is often regarded as an effective tool for educational intervention. To combat the spread of the CoVD19 pandemic, classes were held online, which led to some students experiencing emotional and behavioral difficulties. As far as the kids' and the instructors' mental health are concerned, the majority of research have only found bad news.

Strategically equipping students with several skills for the future is one of a teacher's primary responsibilities (Valtonen et al., 2021). Teachers have a significant impact on student learning, particularly when they are provided with a stress-free environment that fosters innovation and creativity (Wang & Tahir, 2020). School-based treatments informed by positive psychology are generally well-received (Ryff, 2022). This field of research focuses on the many beneficial characteristics of the educational psychology system. Education in the new normal requires positive psychology interventions to revive the joy of learning and raise both instructors' and students' hopes and self-assurance. Since it is expected that returning to school would have a favorable effect on both instructors' and students' emotional well-being, it is crucial that they be immersed in a supportive and encouraging atmosphere.

Psychological capital (PsyCap) is the most important factor in teacher success, according to the field of organizational psychology. PsyCap refers to the process of cultivating one's psychological fortitude in order to take on and master the difficulties and skillsets inherent in one's chosen endeavors (Luthans & Youssef-Morgan, 2017). PsyCap refers to a psychological factor that predicts how invested an employee is in their work, and it includes things like feeling appreciated and having input into how they are evaluated. The use of psychological capital in academia is expanding quickly, particularly with the aim of enhancing the efficiency of institutional administration. In recent years, there has been a growing recognition among researchers and professionals of the importance of, and potential for, psychological capital in achieving one's full potential in the workplace. Several studies show that teachers' happiness is related to their satisfaction with their working conditions and their connections with their pupils, suggesting that teachers' psychological capital plays a role in their sense of happiness in the classroom. Multiple studies (Esmaeili et al., 2019; Rand, 2009) demonstrate the benefit of PsyCap creation on teacher performance and its favorable effect on student success, motivation, and emotional development. Many students' attitudes and actions in the classroom may be attributed to two PsyCap constructs: the theory of expectancies (Snyder, 2000) and the theory of self-efficacy (Bandura, 2006). The domains of self-efficacy in this study include beliefs about the teacher's ability to direct motivation and sources of cognition, carry out a number of activities needed to achieve goals, and success in carrying out tasks in the context of learning management (Youssef & Luthans, 2007).

There are four components that make up one's psychological capital: self-efficacy, optimism, hope, and resiliency (Luthans & Youssef-Morgan, 2017). Hope is described as a constructive outlook grounded on a learned agency and a strategy for achieving one's goals via interaction (Yim et al., 2017). A person's self-efficacy is their confidence in their own capacity to behave appropriately and successfully in a particular circumstance (Lyu et al., 2020). According to Bandura (2006), one's confidence in their abilities is influenced by four things: prior successes, exposure to role models, persuasive arguments, and feelings of excitement. Expert teachers may boost their pupils' self-esteem by setting a good example. Self-efficacy is a predictor of work stress, job performance, turnover intention, and burnout (tiredness), among other cognitive aspects, depending on the data source and analytic technique. Someone who is not confident in his abilities is more likely to experience anxiety and tension when confronted with obstacles, which can have a chilling effect on their output. (Lyu et al., 2020). Cognitively motivated goal attainment and improved performance are both connected with hope (Brosch & Steg, 2021; Brundin et al., 2021). Evidence suggests that hope may be applied to and has a bearing on a wide range of performance variables, including those associated with the workplace and the people within an organization (Luthans & Youssef-Morgan, 2017; Shanahan et al., 2020). Educators who set lofty goals for their students tend to reap financial benefits, have more job satisfaction, and remain in their positions for longer (Azizi et al., 2021; Piwowar-Sulej, 2021).

Individuals may have a predisposition for optimism, but it is also a trait that may be taught and changed by one's environment (Vos et al., 2021). An optimistic outlook on life has been shown to have beneficial effects on both physical and mental health (Hoşgör & Yaman, 2022). The likelihood of developing both mental and physical health issues is lower in more optimistic people (Cho et al., 2021). Furthermore, optimistic people have better coping mechanisms than pessimists. Having the mental fortitude to persevere in the face of adversity and emerge stronger on the other side is the definition of resilience (Delgado et al., 2017). Workplace stress may be mitigated in part by cultivating good emotions like resilience (Çam, 2017). Having a high resilience level is linked to better health, happiness, success in the workplace, and overall contentment with life. Employees who practice positive resilience are less likely to quit their professions, have fewer mental health issues including weariness and depression, and have higher levels of professional and personal satisfaction. In light of the preceding, it is clear how crucial it is for contemporary educational institutions to reveal their teachers' Psychological Capital, especially in times of crisis and mounting difficulty. As the discipline evolves and new research questions are posed, the need for a PsyCap scale or instrument designed specifically for use in the classroom arises. Many studies on PsyCap have been conducted in other countries, but in Indonesia, particularly in the sector of vocational education, there have been surprisingly few. Even among Indonesia's vocational education instructors, empirical notions concerning PsyCap are still uncommon.

It is our inability to make direct judgments about abstract concepts like attitudes, actions, and theoretical constructs that gives rise to the need for scales to quantify these concepts. Behaviors, emotions, and activities that cannot be measured by a

single object or variable are commonly measured using scales. More precise results can be achieved by the use of numerous items to assess the underlying latent construct by explaining and isolating the measurement errors of a single item. In the fields of social science, psychology, and education, thousands of scales have been devised to assess a wide range of traits and events. However, progress on a large scale is seldom simple, clear, or straightforward.

The process of developing a scale is lengthy, costly, and requires intricate statistical analysis. Despite the availability of a huge volume of technical material on the theory and scale development (Bai et al., 2008) (Raykov & Marcoulides, 2011). When doing scientific research, we often utilize incomplete measures to assess students' cognitive and behavioral abilities, both of which are crucial to vocational training.On the other hand, the theoretical agreement on the PsyCap construct results in the many dimensions of the measurement scale of this construct in a variety of specific jobs. One difficulty that arises for psychologists and human resources researchers is how to measure a teacher's PsyCap in a reliable and relatively unbiased way. A way to overcome the current impasse is to conduct studies with a focus on the problem of the teacher's PsyCap measurement scale and on the assessment to test the extent to which the construction is measured according to the facts on the ground. Therefore, our goal is to develop the PsyCap scale for vocational Teachers in Indonesia in a simple, valid, and reliable format, in addition to helping to scale up existing ones. By testing the structure in different versions of TPCS the authors expect to obtain a valid and reliable measurement scale so that it can be applied to a wider scope and level of education.

2. Methods

This study used a development research method consisting of design. Development, and Evaluation (DDR). DDR is described as "the systematic study of the design, development, and evaluation processes with the purpose of developing an empirical foundation for the design of instructional and non-instructional goods and tools, and new or upgraded models that govern their development" (Richey & Klein, 2007, p.1). The first kind of DDR focuses on products and tools, while the second kind examines models (Richey & Klein, 2007). Type II is used in this investigation. Create a rigorous scale by following these three stages: item development, scale development, and scale evaluation (Boateng et al., 2018).

2.1 Population dan Sample

The population is VHS teachers in Indonesia. The research population is VHS teachers in Indonesia. While the research sample was determined using a purposive sampling technique, with the requirements: (1) VHS teachers with permanent status (both government and private teachers), (2) are productive study teachers, (3) are teachers who are responsible for a class, (4) have work experience for at least 1 year, and (5) willing to volunteer as a participant. The minimum sample size required to reduce bias in all types of SEM estimates is 200 (Loehlin, 1998). So the researchers set a sample size of 300, spread across 10 regencies in Indonesia. Teachers have the status of government employees

(Permanent Teachers) as many as 220 people (73.3 %) and Non-Permanent Teachers as many as 180 (26.7 %). The gender distribution was 178 males (59.3 %) and 122 females (40.7 %). The characteristics of the sample indicate that it corresponds to the data of the selected study subject by purposive sampling. Participants in the study were also selected voluntarily, with all participants surveyed at data collection locations or where they worked. TPCS is anonymous and data is handled collectively. Only teachers have the authority and responsibility for their classes/study groups for at least one full year serving as teachers at VHS. This research was conducted following the principles and code of ethics of the APA (Team, 2017).

2.2 Item and Scale Development

The TPCS development process consists of nine stages, which are as follows: Initial questions for the scale are posed during (1) item development, which include determining the domain and creating the items. 2) taking into account the content's veracity in terms of its subject-matter appropriateness, domain-wide representativeness, and technological excellence; Thirdly, researchers pre-test questions to see if they accurately reflect the focus of the study and produce reliable results in terms of measurement. Four) The Conducting of Surveys and Sampling (5) Applying Item Response Theory (IRT) and Classical Test Theory (CTT) to eliminate unnecessary questions: extraction of latent factors to find the best fit between a collection of items and a number of factors or domains (step 6). Dimensionality reduction testing, often known as the "dimensionality test," looks at the latent structure of scale items and their underlying linkages to see if they match up with hypothesized structures. Tests of validity look at whether the score predicts future outcomes, how strongly the scale score correlates with criteria measurements made close to the time of administration, and so on. Tests of reliability evaluate the internal consistency of the scale to see if participants' performance can be repeated; that is, how consistent their scores are over time.

2.3 Teachers' Psychological Capital Scale

Twenty-four questions make up the PsyCap questionnaire, which was developed by a team of experts following extensive literature review and consideration of context (Luthans et al., 2007; Luthans & Youssef, 2007). We created a survey to get a sense of whether or not respondents thought second-order components should be part of the proposed model. Here, the researchers employ the Psychological Capital Questionnaire-24 (PCQ-24) developed by Luthans and colleagues (Luthans et al., 2007; Youssef and Luthans, 2007) to measure PsyCap. Self-efficacy, optimism, hope, and resilience are the four facets of the PsyCap construct that this tool may assess. Six items are used to symbolize these dimensions. This instrument's items are based on and adapted from those of four other measuring instruments that have been field-tested and published in a wide range of studies: (1) the Hope Scale (Snyder et al., 1996), (2) the Resilience Scale (Delgado & Reevy, 2018), (3) the Optimism Scale (Scheier & Carver, 1985), and (4) the Self-Efficacy Scale (Greco et al., 2022). After adapting, a measuring tool for teacher psychological capital was created called the Teacher Psychological Capital Scale (TPCS).

Table 1: Dimensions of teacher psychological capital scale

Dimensions	Description	No. of Item
Self-efficacy	An educator's self-assurance in his ability to steer students' motivation and knowledge toward the achievement of learning objectives and the completion of tasks.	1, 2, 3, 4, 5, 6
Hope	VHS educators' drive and optimism arise from the dynamic interplay between the potency of desire and the discipline of planning, which they use to accomplish their goals and address the challenges they face in the here and now and in the foreseeable future.	7, 8, 9, 10, 11, 12
Resiliency	VHS educators' resilience in the face of setbacks, disagreements, and failures, as well as success, advancement, and additional responsibilities.	13*, 14, 15, 16, 17, 18
Optimism	A persistent image in positive psychology of the educator as a positive future hope who is open to self-development.	19, 20*, 21, 22, 23*, 24

Note: *) question items are unfavourable

Table 1 also shows the description and item count of the TPCS dimension. The self-efficacy dimension consists of 6 items, starting with numbers 1, 2, 3, 4, 5, and 6; Hope consists of 6 items numbered 7, 8, 9, 10, 11, and 12; Resiliency consists of 6 items numbered 13*, 14, 15, 16, 17, and 18, and Optimism consists of 6 items numbered 19, 20*, 21, 22, 23*, and 24.

2.4 PsyCap Measurement

Each participant was asked to describe "how you may think about yourself right now," a phrase chosen to highlight the "state-like" aspect of the measure. Then, the TPCS relied on a 5-point Likert scale for all replies: 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree or agree, 4 = agree , and 5 = strongly agree. For unfavorable items, the scale scoring is the opposite of the scoring rule, starting from a score of 1 for the "Strongly Agree (SS)" option to a score of 5 for the "Strongly Disagree (STS)" option.

2.5 Scale Evaluation

The research objective was to develop the Teachers Psychological Capital Scale (TPCS) based on psychometric analysis using the Confirmatory Factor Analysis (CFA) approach. The validity test was carried out using the Confirmatory Factor Analysis (CFA) method with the help of AMOS SPSS software. According to Kenny & Editor (2007) the steps in testing the validity of this research scale are as follows: (1) Do the CFA test with an undimensional model and look at the resulting Chi-Square value. If the Chi-Square value is not significant ($p > 0.05$) it means that all items have been measured according to the theory, and can be continued by looking at the loading factor for each item. If the Chi-Square value is significant ($p<0.05$), a modification of the measurement model is required; (2) Modify the measurement model by estimating the correlation between

measurement errors on several items that may be multidimensional. This means that in addition to an item measuring the construct that should be measured (according to theory), it can also be seen whether the item measures something else (measuring more than one thing). If after some measurement errors are freed to correlate with each other and finally a fit (undimensional) model is obtained; (3) Then see if there are items with negative factor loading. If there is, the item must be dropped or not included in the factor score calculation analysis; (4) By using SPSS and the unidimensional model then the true score value of the variable is estimated.

When the group's interests are uniform across the spectrum of the latent construction's direction and strength of the link to the observed variables, this gives empirical evidence for the invariance hypothesis of the measuring instrument. Therefore, the goal of this type of research is to determine if the measuring model consistently produces the same scale or feature (Pitts et al., 1996). To ensure that the versions of TPCS they develop can be used across regions and levels of vocational education, the authors use traditional methods to evaluate measurement variance (Schmitt & Kuljanin, 2008). Identifying the model with the greatest potential for generalization may be done by evaluating many alternatives (Hair et al., 2017).

Extracting a model's projected component or factor structure and putting it to the test over many time periods in longitudinal research, or preferably on a new sample, is what's known as a dimensionality test (Kenny & Editor, 2007). Dimension verifies whether or whether the same item, component, or function has been measured consistently across several samples or throughout time. The examination may be carried out using an independent cluster model (ICM), such a confirmatory factor analysis (CFA), bifactor modeling, or measurement invariance.

Confirmatory factor analysis is a sort of psychometric assessment that utilizes fit assessment processes and the calculation of links between latent constructs to systematically compare various a priori component structures after accounting for measurement error (Morin et al., 2015). It relies on an extremely stringent ICM that presupposes there is no connection between items and off-target variables (Morin et al., 2015). A primary suitable bound specifies the method for selecting pairings.

Criteria for determining model fit with data are: (a) Chi-square test of model fit has been assessed to be overly sensitive to sample size and to vary when dealing with non-normal variables. Hence, the use of non-normal data, a small sample size (n =180–300), and highly correlated items make the chi-square approximation inaccurate; (b) Root Mean Square Error of Approximation (RMSEA) ≤ 0.05 as indicative of close fit, 0.05 ≤ RMSEA ≤ 0.08 as indicative of fair fit, and values >0.10 as indicative of poor fit between the hypothesized model and the observed data; (c) Tucker Lewis Index (TLI), that models with overall fit indices of <0.90 0 are generally inadequate and can be improved substantially; (d) Comparative Fit Index (CFI) ≥ 0.95 is often considered an acceptable fit; and (e) Standardized Root

Mean Square Residual (SRMR), threshold for acceptable model fit is SRMR ≤ 0.08 (Botaeng et al., 2018; Kenny & Editor, 2007).

2.6 Measurement Invariance

A further technique for evaluating dimensions is known as measurement invariance, also known as factorial invariance or measurement equivalency (Vandenberg & Lance, 2000). To what extent can the observed indicators' psychometric qualities be generalized (transferred) across groups or across time is what is meant by "measurement invariance" (Sideridis et al., 2015). Indicators include things like factor structure, regression slope and intercept, and residual variance. Invariance was checked at five distinct levels: configurational, metric, scalar, strict (residual), and structural (Kyriazos, 2018; Vandenberg & Lance, 2000). In order to determine if the structure of the hypothesized component is constant across samples, the dimension test focuses on the invariant of the configuration. However, if this assumption is not correct, then any further investigation is pointless (Kyriazos, 2018; Vandenberg & Lance, 2000).

Table 2. Descriptive statistics for TPCS

No	Item	Mean	SD	Skewness	Kurtosis
1.	When educating other educators or technicians, I have no uncertainties about expressing my knowledge.	3.71	.583	-.407	.636
2.	I am prepared to contribute to the establishment of my department's aims and objectives.	3.63	.669	-.006	-.227
3.	I'm comfortable adding my two cents to the conversation on how to improve education.	3.66	.516	-.934	-.116
4.	I have no problems about looking at the big picture to figure out how to fix things.	3.57	.733	-.033	.021
5.	I think I have something worthwhile to add to the conversation about pedagogical tactics at school.	3.76	.628	-.117	-.046
6.	I have no problem having meaningful conversations about important topics with adults outside of the classroom (parents, industry, business).	3.94	.654	.026	-.556
7.	I am now succeeding in all of my planned activities.	4.16	.802	-1.218	2.302
8.	Numerous options have occurred to me for addressing the issue.	4.58	.547	-.808	-.431
9.	If I encounter difficulties, I can find a way out	3.84	.676	.172	-.754
10.	As a school vocational instructor, I feel like I've really hit my stride recently.	3.55	.653	.100	-.256
11.	My current focus is on fulfilling my work's ultimate goals.	3.61	.610	.111	-.398

No	Item	Mean	SD	Skewness	Kurtosis
12.	Many options exist for me to reach my present professional objectives.	3.92	.679	-.423	.677
13.	The results of my efforts as a vocational educator were never satisfying.	4.19	.747	-.464	-.654
14.	In the face of academic uncertainty, I tend to have a positive outlook.	3.75	.787	-.146	-.096
15.	I try to look at the bright side of things and believe that making a mistake is unavoidable.	3.77	.762	.011	-.604
16.	I always see the positive side of everything about my work.	3.68	.560	.083	-.663
17.	At this point in time, I feel like I'm doing a good job of navigating the trip.	3.69	.659	.309	-.613
18.	In general, I have a positive outlook on life.	3.47	.581	-.118	-.551
19.	I know I can get through the challenging moment at work because I have been through it before.	3.46	.733	.432	-.194
20.	Every issue has several potential answers.	3.69	.714	-.212	-.108
21.	I had a hard time getting back on track after encountering workplace failures.	3.59	.642	.104	-.331
22.	At work, I can find "privacy" to conduct private conversations if I need to.	3.63	.648	.104	-.313
23.	I'm comfortable offering my thoughts on potential educational reforms.	3.63	.607	.104	-.621
24.	I'm comfortable offering my thoughts on potential.	3.60	.591	.104	-.617

From Table 2, the mean of all items is in the range of scores from 3.46 to 4.58, meaning that it is in the high category. The slope coefficient and kurtosis were calculated to verify the multivariate normality assumption. All skewness coefficients and kurtosis on each item are in the value range -2 to 2, significant ($p < 0.001$), implying a violation of the assumption of normality.

Each proposed dimension must be independently verified for unidimensionality, regardless of whether the postulated structure has two or more dimensions. Confirmatory factor analysis is another method for doing this. Items' latent structures may be evaluated based on their index precise model fit and the strength of their factor loadings (refer to Table 2) (Boateng et al., 2018). After a successful first factor analysis, CFA on a new sample often yields a poor global model fit. No excellent matches allow for more wasted parts. Items with loading scores below .3 may be removed. Mplus and other SEM tools provide a modification index to help identify regions that need improvement. In certain cases, one or more "super" factors are utilized to describe the relationship between the original components. Statistical analysis techniques can also assess it (SPSS).

The last item of the dimensional test may be used to generate a scale score, which can subsequently be applied to more in-depth analyses, such as reliability and validity testing. Scale scores can be calculated with or without the use of weights. Standardized item scores can be added to raw item scores or vice versa, and raw item scores can be averaged. A weighted technique of calculating scale scores may be developed with the use of statistical tools. The interpretation of the loading factor is found in the results of modeling with the CFA or the entire model using structural equation modeling (SEM). A loading factor measures the strength of the relationship between an indicator and the latent construct being measured (Vandenberg & Lance, 2000). In several types of social science research, indicators are used to quantify a construct indirectly. High loading factors indicate that an indicator is more helpful in explaining its latent concept. But indicators with low factor loadings contribute less to the explanation of the hidden concept. Sample sizes greater than 300 for CFA analysis are considered legitimate, and a loading factor of more than 0.30 is considered to indicate validity (Hair, 2017).

3. Results and Discussion

This subsection will analyze the data analysis results in light of the questions posed by the research. To begin comparing structural invariances across populations, this study's major objective was to create a measurement model for TPCS. The results of the confirmatory factor analysis (CFA) in Table 3 show that the value of S-B $\chi 2$ is 1096,432, degrees of freedom = 246, at statistical significance (p=.000). This shows that the model fits significantly with the data.

Table 3. Goodness of fit indices for CFA models of the TPCS (N = 300)

Model	S-B χ 2	df	GFI	RMSEA	SRMR	NFI	RFI	CFI	TLI
Default model	1096.432	246	.688	.138	.008	.909	.897	.916	.958
Saturated model	-	-	-	-	.000	1.00	-	1.000	-
Independence model	-	-	.091	.450	.229	.000	.000	.000	.000

Based on the results of the factor analysis, the TPCS measurement obtained a GFI value of .688 which is below .950, meaning that the model does not fit the data. A Root Mean Squared Error of Approximation (RMSEA) value of .138 (> 0.10) indicates a mismatch between the hypothesized model and the observed data. However, a TLI index of .958 (>0.90) indicates a substantially adequate scale or has a sensitivity to variations and sample sizes or shows items are very accurately used for the measurement process. Likewise, a Standardized Root Mean Square Residual (SRMR) threshold value of .008 (<1.0) indicates a fit model with the observed data. But a Comparative Fit Index (CFI) value of .916 (<0.95) is considered a less acceptable match.

Researchers also used other fit measures before concluding the fit model with the research data. Standardized Regression Weights (SRW) estimation values of 24 TPCS items have high scores in the range of .923 to .995. This suggests that all

standard regression coefficients are estimated to be statistically significant (> .2; p = .01), meaning that all items are valid and reliable. This means that the basic model confirms the dimensions of the TPSCS construct which includes self-efficacy, hope, resiliency, and optimism. Likewise Cronbach's alpha value of the first-order constructs is .976 was greater than .70, indicating acceptable consistency (Creswel, 2018). The AVE values of all the sub-constructs also exceeded the cut-off point, indicating construct validity.

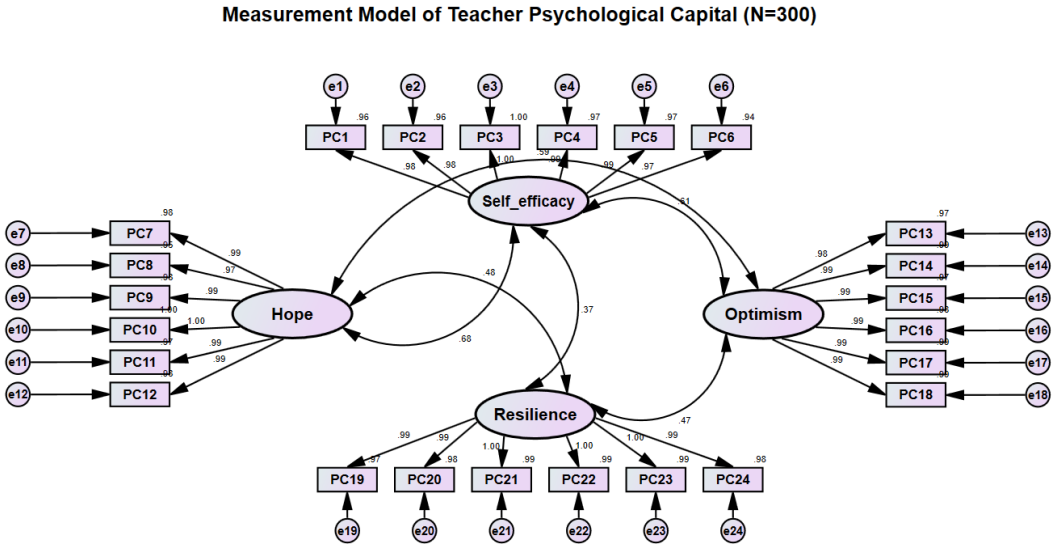

Figure 1: TPCS Model Measurement

Figure 1 shows the estimated correlation between the dimensions of the TPCS model. Estimate correlations between model variables, including self-efficacy and hope (.683), self-efficacy and resiliency (.372), self-efficacy and optimism (.613), optimism and hope (.590), resilience and hope (.484), and optimism and resilience (.469). TPCS appears psychometrically feasible and deviates from insignificant invariant metrics. Researchers use these four-dimensional PsyCap metrics to examine multi-group structural invariance because they have a good fit index.

The above study demonstrates that the TPCS may be effectively utilized to gauge the mental health of Indonesia's VHS educators. The importance of the Psychological Capital Measurement Model for VHS Teachers in motivating educators to raise student achievement by focusing on their individual strengths and interests cannot be overstated. According to (Gomes da Costa et al., 2021), the positive psychological factors of self-efficacy, hope, resilience, and optimism all contribute to positive mental health and, in turn, boost performance. This agrees with the view of Jansen et al. (2020) that a teacher with high self-efficacy might draw on past experience to raise their performance expectations on the job. Other research has found that schools with higher expectations for their teachers see greater profits, employee retention, and dedication from their staff. Similarly, if a teacher's relic ensure experience is positive, it will boost the educator's sense of autonomy and self-reliance, enhance their professional capabilities and job and life satisfaction, lessen the impact of mental health issues like exhaustion and depression, and prevent them from quitting their job (Çam, 2017). Hope and

optimism as predictors of academic performance and subjective well-being in college students (Kevin, 2020).

Table 4: Teachers psychological capital scale

No.	Item
1	When educating other educators or technicians, I have no uncertainties about expressing my knowledge.
2	I am prepared to contribute to the establishment of my department's aims and objectives.
3	I'm comfortable adding my two cents to the conversation on how to improve education.
4	I have no problems about looking at the big picture to figure out how to fix things.
5	I think I have something worthwhile to add to the conversation about pedagogical tactics at school.
6	I have no problem having meaningful conversations about important topics with adults outside of the classroom (parents, industry, business).
7	I am now succeeding in all of my planned activities.
8	Numerous options have occurred to me for addressing the issue.
9	If I encounter difficulties, I can find a way out
10	As a school vocational instructor, I feel like I've really hit my stride recently.
11	My current focus is on fulfilling my work's ultimate goals.
12	Many options exist for me to reach my present professional objectives.
13	The results of my efforts as a vocational educator were never satisfying.
14	In the face of academic uncertainty, I tend to have a positive outlook.
15	I try to look at the bright side of things and believe that making a mistake is unavoidable.
16	I always see the positive side of everything about my work.
17	At this point in time, I feel like I'm doing a good job of navigating the trip.
18	In general, I have a positive outlook on life.
19	I know I can get through the challenging moment at work because I have been through it before.
20	Every issue has several potential answers.
21	I had a hard time getting back on track after encountering workplace failures.
22	At work, I can find "privacy" to conduct private conversations if I need to.
23	I'm comfortable offering my thoughts on potential educational reforms.
24	I'm comfortable offering my thoughts on potential.

Since the study of PsyCap in vocational education teachers in Indonesia is also still rare, the existence of a reliable and reliable Teachers Psychological Capital Scale is very important not only for new teachers but also teachers who have long work experience. The emerging issue of how to measure the reliable, practical, easy, and relatively unbiased PsyCap of vocational teachers in Indonesia has been answered through this study. The findings of this study strengthen the theory developed by Luthan & Youssef (Luthans & Youssef, 2007).

regarding the constructs and dimensions of the Teacher Psychological Capital Scala. PsyCap is an individual's positive psychological state of development and is characterized by having high levels of HERO (i.e., hope, efficacy, resilience, and optimism) (Luthans & Youssef, 2007; Ohlin, 2020). Researchers consider PsyCap to be a fundamental asset for authentic, unique, and vital leadership. This is in accordance with Bao's research (2015) which says that authentic leaders have many things hope, efficacy, resilience, and optimism.

This measurement of psychological capital is believed to be able to support studies of the application of positive psychology in the management of the education system organization in this modern era, especially to arouse the enthusiasm of teachers in working, creating, and innovating according to their potential. Although research on positive psychology in the world of education has been widely carried out abroad, in Indonesia there are still very few, so after all the results of this study will eventually be able to contribute to the progress of vocational education and general education in Indonesia. It does not support full-scale equality, which means that group scores must be compared with other factors that also have a strong influence. From this point of view, further research adopting TPCS would require the use of other measures to evaluate the discriminant validity of the scale (e.g., personal growth initiative, or organizational structure). Because of the results of this study, the authors propose the following guidelines for the use and development of TPCS at other levels of education in the future. From a theoretical point of view, this research confirms (especially in the field of vocational education) the importance of social aspects and the organizational structure of schools to determine teacher performance. PsyCap helps teachers become committed to carrying out their duties, and maintain dedication under the most extraordinary circumstances. But most importantly, PsyCap helps teachers to motivate and foster students' interest in learning. To achieve all of the above, nurse leaders need to invest in developing their teachers' PsyCap through long-term and short-term interventions. The first step that school organizations can take is to develop a teacher's PsyCap. Educational institution leaders simply introduce teachers to the concept by empowering them to recognize and raise their own personal HERO level and encourage them to do the same for others. Because we rarely hear this concept used in professional settings, implementing these steps is essential maximize teacher performance.

The findings of this study prove that psychological capital is influenced by psychological aspects of teachers such as self-efficacy, hope, resilience, and optimism, which are closely related to the work environment. The relationship between items and latent factors, as well as the number of described variances, observed all seem to point in this direction. Nevertheless, this does not mean ignoring other aspects that were not involved in this study. Furthermore, the basic invariant of the TPCS measurement modeling our study subjects provides valuable evidence for the relatively stable dimensions of PsyCap.

On the methodological side, the teacher's PsyCap measurement is most appropriately performed with a small number of items. From the author's

experience in developing the TPCS, we conclude that the PsyCap indicator as a whole helps to evaluate and understand the construction understudy. However, it also seems beneficial to include a small number of more specific items to create a more comprehensive framework that allows researchers to explore its effects simultaneously. One of the possible explanations for the excellent psychometric TPCS is the inclusion of specific indicators that further complement and amplify the overall TPCS scale. Finally, from a practical point of view, the ease of filling out questionnaires, the time to answer questions, and the interpretation of questions in this instrument prove that this scale can be applied on a wider scale because it is short, practical, and easy to use for leaders, researchers, and education practitioners to collect data on teachers' psychological capital in schools. The results of the TPCS scale's predictive validity assessment are adapted or newly developed and intended for vocational education, but can be applied to general schools, even relevant to other fields such as health, social, and behavioral sciences.

4. Conclusion

This study evaluates the validity of TPCS items in VHS in 10 districts in Indonesia. By looking at the parameters of the CFA results shown from the Chi-square score, the GFI, NFI, CFI, and RMSEA values show that the TPCS measurement model is fit with the data. Likewise, from the score of estimate correlations between the latent variables of the developed model it can be concluded that the dimensions of TPCS have strong psychometric feasibility and deviations from insubstantial invariant measurements. The CFA demonstrated a model of PsyCap measurement in an educational context that includes four dimensions: self-efficacy, hope, resiliency, and optimism proven fit with data in the field. This means that the four dimensions can explain the variance in the Psychological Capital of vocational teachers as a whole. Likewise, of the 24 TPCS items, all of them are valid and reliable. In general, the results showed that TPCS had strong psychometric feasibility and deviations from insubstantial invariant measurements. So this instrument is feasible to use to measure the PsyCap level of vocational teachers. This study's results imply that in the future it will be necessary to further test the teacher psychological capital scale over a wider area. The importance of measuring teachers' mental states in the face of increasingly severe challenges and prolonged social crises is critical.

5. Author Contribution

This article's writers have confirmed that they have no financial or personal stakes in the subjects or outcomes of the study. Tri Wrahatnolo conducted the research, compiled the literature review, and oversaw the whole writing process. Research methodology was written by Ekohariadi and data input was completed by Ekohariadi. All statistical work and interpretation of data was done by Yeni Anistyasari.

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