Original Article

The Development of the Thai Psychological Capital Inventory: Version 44 Items

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Objective: The present study aimed to develop the Thai Psychological Capital Inventory as the standard assessment for Thai people by studying its validity and reliability.

Materials and Methods: The research process was conducted in 2 processes; (1) Document study: the process of gathering essential information to create the conceptual framework. The Thai Psychological Capital Inventory was developed in this process (2) Field study: the process of collecting data from the sample population: Thai people age between 12 to 87 years old. In this study, the data was collected from 2,855 with voluntarily acceptance of consent from.

Results: The results revealed that The Thai Psychological Capital Inventory consisted of 44 items for assessing 4 state-like components of Psychological Capital; hope, self-efficacy, resilience and optimism. The research instrument was validated by 5 experts: content validity and item objective congruence. The exploratory factor analysis fitted the pooled Thai Psychological Capital items by a principal component analysis, followed by a series of Varimax rotations and item analysis method that were performed. The reliability coefficient of total Thai-Psychological Capital Inventory was 0.98.

Conclusion: The research showed that The Thai-Psychological Capital Inventory was good psychometric properties and suitable for Thai people.

Keywords: Thai-Psychological Capital Inventory, Thai PsyCap

Positive psychology is part of an existential-humanistic theory which emphasized positive self-improvement opportunities[1,2] and empowerment, rather than the disorders itself. Positive psychology focused on positive behaviors of normal people and encouraged their strong points as power against adversities and to become resilient. World Health Organization [WHO] defined the word "Mental Health" as the state of well-being, self-awareness and ability to deal with stressful events while retaining the ability to perform efficiently[3]. In Thailand, the government also employed similar methods by emphasizing "Person-Centre" strategy in the 11th National Economic and Social Development Policy (2012 to 2016); "Person-Centre" strategy aimed to elevate human's capacity of problem-tolerance in individual, family, community and national level[4]. In conclusion, to develop mental health is significant and necessary for human beings because people will be able to conquer any burdens and survive.

Therefore, 'Positive Psychology' is an attractive and challenging strategy aimed to strengthen mental health well-being in rapidly changing society. According to literature review, early adults and working age individuals have the potential to be productive, and at the same time, they have to deal with the most complicated tasks as well[5]. Moreover, many people in the working age group are responsible for earning their family's living, so, mental health well-being is critical for them as well. Many studies related to positive psychology showed that there are various factors that

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influence working age group's mental health such as working satisfaction (r = 0.39, $p<0.001$)[6], state of well-being[7], stress, and fatigue from work (r = 0.35, $p<0.0001$, n = 416)[8]. According to positive organization behavior theory, which is popular in organization development science[9], these factors, also referred to as "psychological capital", reside in every person.

Psychological capital has a unique characteristic which can be measured as state-liked so that it could be learned and developed in each individual. Psychological capital is composed of variety characteristics such as efficiency/confidence, resilience, optimism, and hope. All of these components influence and contribute to many domains of life in positive or negative ways such as productivity and capability in work, proper manner, membership of community and social boundary. There are other domains such as Emotional Quotient [EQ] and Psychological well-being that need to be studied and explored. Department of Mental Health, Thailand, has developed the Resilience Quotient (One component of psychological capital) tool to assess people's strengths. The present study aimed to study and develop "Thai Psychological Capital Inventory" in order to have a standardized measurement of human's strength. It would be very beneficial if people can assess their strengths in order to discover their potential and promoted these characteristics. Subsequently, the assessment provided an opportunity to enhance their problem-solving abilities more effectively.

Objective

To develop the Thai Psychological Capital Inventory as the standard assessment for Thai people by studying its validity and reliability.

Materials and Methods
Subjects

The samples have been selected by purposive sampling from 2,855 Thai people age between 12 to 87 years old volunteers who signed a written consent form.

Procedure and measurement

The present study was conducted into 2 phases;

1) Document study: the process of gathering essential information to create the conceptual framework of "Thai Psychological Capital".

2) Field study: the process of collecting data from the sample population: Thai people age between 12 to 87 years old. In this study, the data has been collected from 2,855 volunteers who gave written consent. Four subtypes of setting were propositional allocated in the sample groups: 1) two secondary schools (one private and one public), 2) two universities (one private and one public), 3) Two kinds of organizations (commercial and trade, government sectors) and, 4) Two elderly associations (one private and one public).

The data were collected by the researchers and research assistants who were qualified and experienced with instruments such as group testing.

Instruments

1) General information part (Checklist) consisting of personal information and family background.

2) The Thai Psychological Capital Inventory (self-report: 5 rating scale; 5 = absolutely agree, 4 = moderately agree, 3 = agree and disagree sometimes, 2 = moderately disagree and 1 = absolutely disagree) consisted of state-like components; self-efficacy, hope, optimism and resilience. Interpretation by mean according to Best (1981) which has been classified into 5 level; very low, moderately low, fair, moderately high, and very high.

Analysis

The data were analyzed using PASW 18.0 (SPSS Inc., Chicago, Illinois, US). 1) Demographic data and test items were analyzed by descriptive statistics. 2) Statistical analysis for reliability (internal consistency technique) and validity of Thai Psychological Capital Inventory were analyzed by content validity and constructed validity by factor analysis.

Ethical consideration

This study was conducted with the approval of the Siriraj Institutional Review Board [SIRB], Faculty of Medicine, Siriraj Hospital, Mahidol University; S124/ 2012.

Results
Part 1: The demographic data of the samples

Table 1 demonstrated ratio between male and female was about 1: 2. Age distribution were quite equal between age groups. Most participants were single (67.04%) and married (31.56%). Most of the sample had educational level as Secondary High School (35.48%) and Junior High School (21.37%) and occupation are employees (62.70%).

Part 2: The characteristic of the Thai Psychological Capital Inventory

Content validity

The research instrument was validated by 5 experts; content validity and item objective congruence [IOC]. The congruent items were selected with 0.50 and above[10]. Correcting the items due to the experts suggestions. Then, the approved instrument of 127 items was piloted in a group of 30 participants who were Thai in adult age group in order to be qualified.

Construct validity

The Thai Psychological Capital Inventory was verified with the factor analysis by principal component analysis [PCA] and found that the eigenvalues for factor selection at more than 1.00 yielded 4 factors: The factor I explained variance 56.491 percent, while all 4 factors explained variance 67.05 percent (Table 2).

In order to identify the relationship of the extracted psychological capital factors clearly, the orthogonal rotation was performed by varimax method. This yielded factor loading a simple structure and made the coefficient of the principal axis positive manifold. The results of analysis and axis rotation by selection of the factors loading at 0.40 or more represented each component shown as follows: the 4 factor solutions provided the most interpretable factor structure. Factor I had 12 items; R1-R12 which measured equanimity, meaningfulness and perseverance that named 'Resilience', Factor II had 10 items; H1-10 which measured goal and willpower that named 'Hope', Factor III 10 items; O1-10 which measured 'Optimism', Factor IV had 12 items; E1-12 which measured confidence to do their function and expressed their opinion that named 'Self-Efficacy'. The details are illustrated in Table 3.

Part 3: Reliability coefficients of the Thai-psychological capital inventory

Table 4 demonstrated the Cronbach's alpha coefficient value of each factor. Along with the reliability coefficient of total Thai-Psychological Capital Inventory (44 items) was 0.98. The standardized item alpha value was 0.98. These results showed that data collection in this study was reliable at a high level.

Discussion

Psychometric properties of the Thai-psychological capital inventory

The Thai psychological capital inventory was based on design properties that was constructed to

Table 1. The demographic data

Demographic data	Frequency	Percent
Gender		
Male	952	33.4
Female	1,903	66.7
Age (years)		
12 to 20	524	18.4
21 to 30	523	18.3
31 to 40	533	18.7
41 to 50	557	19.5
51 to 60	444	15.6
60 +	274	9.6
Marital status		
Single	1,914	67.1
Married	901	31.6
Divorced/separated/widowed	40	1.4
Level of education		
Elementary school	455	15.9
Junior high school	610	21.4
Secondary high school	1,013	35.5
Certificate/diploma	220	7.7
Bachelor's degree	457	16.1
Master's degree	73	2.6
Others	27	0.9
Occupation		
Unemployee	751	26.3
Employee	1,790	62.7
Government officer	76	2.7
Argiculture	160	5.6
Others	78	2.7

Table 2. Unrotated principal axes analysis of the Thai-PCI

Factor	Eigenvalues >1	Percent of variance	Cumulative percent
1	45.64	56.49	56.49
2	3.15	4.75	61.24
3	2.07	3.16	64.40
4	1.65	2.66	67.05

Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.98
Bartlett's Test of Sphericity = 25,624.42; $p \leq 0.001$; df = 2,247.

measured state-like characteristics[6,11]. The scoring and interpretation of the statistics were also apparent[12]. Moreover, the basic of psychometric properties found 3 portions:

Part 1: to verify the content validity by 5 expert opinions (in field clinical psychology and psychology) with item objective congruence; IOC. Then, it was

Table 3. Name of factors on the Thai PCI 44-Item and the confidence level (Alpha) of the Thai-PCI (n = 2,855).

Factor	Item	Item-total correlation	α (95% CI)
Resilience	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12	0.73 to 0.89	0.9821 (0.9820 to 0.9821)
Hope	H1, H2, H3, H4, H5, H6, H6, H7, H8, H9, H10	0.75 to 0.81	0.9820 (0.9819 to 0.9821)
Optimism	O1, O2, O3, O4, O5, O6, O7, O8, O9, O10	0.76 to 0.89	0.9821 (0.9819 to 0.9822)
Self-efficacy	E1, E2, E3, E5, E6, E7, E8, E9, E10, E11, E12	0.71 to 0.91	0.9823 (0.9821 to 0.9824)

piloted in Thai working age group of 30 participants. This result demonstrated that the alpha coefficient value was 0.97 placing it at high reliability[10]. Qualify of the measure can be used to collect the data.

Part 2: to identify construct validity by exploratory factor analysis [PCA] found that the eigenvalues for factor selection at more than 1.00 yielded 4 factors: factor I explained the variance of 56.49 percent, while all 4 factors explained variance 67.054 percent. Likewise, Luthans et al[13] studied psychological capital in Chinese working age group by using the Psychological Capital Questionnaire-Chinese version 30 items. They validated with exploratory factor analysis that found a single factor which had the eigenvalues for factor selection at more than 1.00 yielded. Their result explained 84% of totally variance of psychological capital. According to Brandt et al[14] their study in a 4 state-like components of psychological capital which consisted of 33 items. Their consequence were analyzed by principal component analysis that described the variance of 33%. Thereby, several researchers confirmed all 4 dimensions of psychological capital[15].

Part 3: to demonstrate reliability coefficient of the Thai Psychological Capital Inventory. The internal consistency was analyzed by Cronbach's alpha coefficient and found that it had high reliability (α = 0.98). Each scale of primary factor measurement was between 0.98 to 0.98. This result was similar to the study of Luthans et al which studied the same age group as this research. It was found that the Psychological Capital Questionnaire [PCQ-24] also has high level of reliability. (α = 0.88 to 0.89) Similarly, the study of Brandt et al which psychological capital questionnaire (33 items) had the reliability score between 0.75 to 0.89. Therefore, Thai Psychological Capital Inventory (44 items) had high consistency in measuring psychological capital in Thai context. Presently, there are many studies regarding psychological capital and several researchers that found the relationship between psychological capital with a greater number of variables
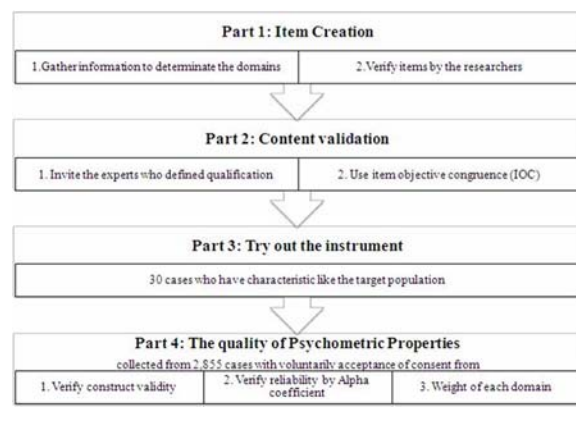

Fig. 1 Process of the development of the Thai-Psychological Capital Inventory Version 44-Item.

such as well-being[6,11,16-18], performance[16-18], coping resources[19] and decrease in stress[18]. Knowledge about psychological capital especially in working-age group would be applied in the field of developing human strengths and potential.

Conclusion

Thai Psychological Capital Inventory (5 rating scale) consisted of 44 items for assessment of 4 state-like components of Psychological Capital; Self-Efficacy, Hope, Optimism and Resilience. The verification of the confident level by internal consistency found that alpha coefficient of each factor between 0.98 to 0.98 and total reliability coefficient was 0.98. It indicated that the Thai Psychological Capital Inventory had high reliability.

For content validity, it was proved by comparison of the item objective congruence which was conducted by 5 experts. For construct validity it was done by exploratory factor analysis and found 4 factors that explained variance 67.05 percent, and the construct of psychological capital concept had 4 state-like components. Factor I assessed Resilience, Factor II assessed Hope in regard to Goal and Agency, Factor III assessed Optimism, and Factor IV assessed Self-

Efficacy. Overall, this research demonstrated that Thai-Psychological Capital Inventory is a good quality instrument, suitable for Thai people.

What is already known on this topic?

Thai Psychological Capital Inventory (5 rating scale) consisted of 44 items for the assessment of 4 state-like components of Psychological Capital; Self-Efficacy, Hope, Optimism and Resilience.

What this study adds?

Thai Psychological Capital Inventory has good psychometric properties, suitable for Thai people.

Potential conflicts of interest

None.

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