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Development of a purpose in life scale for Thai adolescents: A mixed-method study

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Article Info

Abstract

Purpose in life (PIL) is a crucial component of positive youth development. Understanding and promoting PIL requires a suitable assessment tool. This study aimed to develop and test the validity and reliability of the Purpose in Life Scale for Thai Adolescents (PILTA), to support PIL assessment in non-western countries. The study utilized: (1) item generation among 27 students; (2) scale construction among 540 students; and (3) scale evaluation among 2,466 students. Results showed that the PILTA is appropriate to measure adolescents aged 15–19 in the Thai context. The scale comprised 95 questions, categorized into seven components: (1) connectedness to oneself and others; (2) meaning of life; (3) self-worth; (4) goal orientation; (5) self-belief; (6) determination; and (7) gratitude to oneself and others. The model fit-test showed that the PILTA had a good fit with the observed data ($\chi^2 = 7.83$; df = 9; $p = .551$; Comparative Fit Index = 1.00; the Goodness of Fit Index = .99; the Adjusted Goodness of Fit Index = .98; the Root Mean Square Error of Approximation = .000; $\chi^2/df = .87$). The Cronbach's alpha for the scale was .92. The PILTA had a significant positive correlation with the Seeking of Noetic Goals Scale and the PIL scale but had a significant negative correlation with the Beck Hopelessness Scale. The development of country norm measurement showed a normal T-score ranging from T22 to T67. In conclusion, the PILTA is a culturally sensitive assessment of PIL. It adds an explanation of the "process" of assessing PIL.

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Introduction

Purpose in life (PIL) is associated with the flourishing of adolescents' physical and mental health (Burrow et al., 2014; Sharma & De Alba, 2018) and wellness (Balthip et al., 2017). PIL is important to a meaningful existence. As globalization has drastically transformed technological and social landscapes in societies around the world, people struggle to identify such meanings. While playing significant roles in the social structure, adolescents are vulnerable to these social and cultural shifts as they struggle to navigate the challenging period in their own life. Promoting and developing PIL thus is necessary, but requires a proper assessment scale, especially one that is responsive to specific cultural contexts. Existing PIL assessment scales were developed in North America and Europe, hence are Eurocentric and not suitable in the Thai context. As a result, there is a pressing need for a PIL tool that would be culturally responsive to Thai adolescents.

This study aimed to develop the Purpose in Life Scale for Thai Adolescents (PILTA). In the item generation phase, the Grounded Theory (GT) methodology was selected, and the interview guide followed Damon et al. (2003), who described PIL as "a stable and generalized intention to accomplish something that is at once meaningful to the self and of consequence to the world beyond the self" (p. 121). The PILTA was then tested for its psychometric properties.

Literature Review

Most of the PIL assessments have been devised in North America and Europe (Bronk, et al., 2018; Schulenberg et al., 2011) where perceptions may differ from those in the Thai culture, rooted as it is in Buddhist principles. For example, gratitude, a key characteristic of Thai cultural identity, strongly influences PIL (Balthip et al., 2017). This underscores the need for a more culturally responsive PIL. Also, some scholars have argued that PIL was developed primarily for adults entering retirement or the final stage of life, not for adolescents (Bronk et al., 2018).

Previous research focused on PIL as a well-being indicator rather than on its development process.

As a result, the current PIL tool comprises too few dimensions or question items. For example, with the Purpose in Life-Short Form (PIL-SF), the reliability of the scale was .86, and it consisted of only four items that narrowly focused on the life goal (Schulenberg et al., 2011). In the Claremont Purpose Scale (CPS), the internal consistency for CPS and PIL in a previous study ranged between .81–.92. It includes three dimensions of the PIL: goal-directedness, personal meaning, and beyond-the-self orientation that focuses exclusively on understanding the perception of PIL rather than "what gives purpose in life?" (Bronk et al., 2018). Thus, the assessment does not reflect the process of enhancing PIL.

Methodology

This mixed-method study consisted of three phases: (1) item generation using GT; (2) scale construction using survey and exploratory factor analysis and item-total correlational coefficient analyses to analyze the data; and (3) scale evaluation using confirmatory factor analysis and model testing. This study also added criterion-related validity and the known group technique construct validity to further strengthen the validity of this newly developed scale.

Participants

The inclusion criteria for this study were: (1) Thai students aged 15–19; (2) studying in public or private high schools or vocational schools from all regions of Thailand; (3) willing to participate in this study; and (4) able to communicate in Thai. The exclusion criteria were mental health problems.

Data Collection

The study was conducted between February 2017 and August 2018. The researchers followed Boateng et al. (2018) to develop the PILTA.

Phase I: Item generation
The GT was selected to ensure that data were gathered in natural settings and concurrently analyzed (Strauss & Corbin, 1990).

In-depth interviews were conducted with 27 students to understand: (1) how PIL was important to them; (2) how they developed their PIL; and (3) what positive consequences they perceived of having PIL. The duration of each interview was 45–60 minutes. Data collection and data analysis were conducted concurrently to achieve data saturation. As a result, three subcategories and 100 question items were identified and reviewed for content validity by three experts who had in-depth experience in the areas of adolescent development, PIL, and tool development.

The 100 question items of the PILTA were formatted into a four-level rating scale. The scale content validity was analyzed for item objective congruence (IOC). Acceptable IOC were .5 (Rovinelli & Hambleton, 1976) and .75 for four experts (Turner & Carlson, 2003). There were three experts for this study, therefore the question items that had IOC greater than .7 were kept. In the end, a total of 95 question items and seven

components remained for further analysis, as shown in Table 1.

Phase II: Scale construction

This phase included corrected item-total correlation (CITC), item-total correlational coefficient analyses, and exploratory factor analysis (EFA). The CITC and item-total correlational coefficient analyses were performed among 200 students. The item-total correlation coefficient between item score and the total score of the PILTA was analyzed. The questions with Pearson's product moment correlation coefficient (r) of .2 or higher were retained for EFA (Wang et al., 2017). The EFA was analyzed among 140 students. Any question item that did not show correlation with the others was not included for confirmatory factor analysis (CFA). The question items that had a correlation greater than .3 were included for further analysis (Polit & Beck, 2008). In the end, seven components of the PILTA were further assessed (as shown in Table 1 and Table 2).

Table 1 Number of question items and number of items that obtained objective congruence

Indicators and components	Number of constructed items	Number of items obtained IOC from three experts
Component 1: Connectedness to oneself and others	25	25
Component 2: Meaning of life	17	17
Component 3: Self–worth	18	18
Component 4: Goal orientation	10	10
Component 5: Self-belief	15	15
Component 6: Determination	4	4
Component 7: Gratitude to oneself and others	6	6

Note: The selected items had a validity ratio of .67 or higher. IOC = item objective congruence.

Table 2 Exploratory factor analysis for suitability of the data

($N = 140$)

Indicator	M	SD	KMO	Bartlett's Test	Correlation							p	Component Matrix
					1	2	3	4	5	6	7		
			0.884	χ^2 750.45 df 7 Sig .000									
Component 1	3.63	0.85			1.00							.000	0.830
Component 2	3.82	0.94			0.600	1.00						.000	0.870
Component 3	3.13	0.78			0.491	0.575	1.00					.000	0.816
Component 4	2.98	0.68			0.562	0.769	0.663	1.00				.000	0.798
Component 5	3.22	0.92			0.458	0.425	0.563	0.645	1.00			.000	0.896
Component 6	3.10	0.89			0.589	0.436	0.655	0.562	0.655	1.00		.000	0.810
Component 7	3.00	0.93			0.532	0.462	0.456	0.632	0.498	0.595	1.00	.000	0.762

Note: Extraction Method: PCA; Rotation Method: Varimax with Kaiser Normalization; Total variance explained 70.377%.

Phase III: Scale evaluation

This phase included CFA, criterion-related validity, construct validity evaluation using known group technique, and the norm of the PILTA. Two hundred and eighty-one students were recruited to test the construct validity and to evaluate the consistency of the proposed model. The Linear Structure Equation Model (LISREL) computer program was used to test the proposed model. The fit indices for this study were: (1) Comparative Fit Index (CFI) of higher than .95; (2) the Goodness of Fit Index (GFI), and the Adjusted Goodness of Fit Index (AGFI) of higher than .90 and closer to 1.0; (3) the Root Mean Square Error of Approximation (RMSEA) of less than .08; and (4) the relative Chi-square (χ^2/df), of less than 3.0 (Newsom, 2020).

The Criterion-Related Validity was assessed among 165 students by using the Pearson Correlation Coefficient on the total score of the PILTA together with the total score from three psychological assessments, which included the Seeking of Noetic Goals scale translated by Tuicomepee (2011), the PIL scale translated by Tuicomepee (2011), and the Beck Hopelessness scale translated by Pattarayuttawat (2008). The results are shown in Table 3. Then, the construct validity using the known group technique was done to test if the PILTA can differentiate the low score groups from the high score group. One hundred students were divided into two groups to complete the PILTA. The first group consisted of 50 nursing students who perceived themselves as persons with clear PIL (evidenced by their current pursuit of a nursing career) and who had a clear career goal. The second group consisted of 50 students from other faculties who perceived themselves as having an uncertain goal or path to employment. At the end of this step, the norm of the PILTA was tested using percentile rank and normalized T score. As suggested by Wiratchai (1999), 1,920 students were recruited to assess the norm of the PILTA using percentile rank and normalized T score.

Data Analysis

The data analysis was divided into two main processes: qualitative data analysis and quantitative data analysis. In the item generation phase, the data collected from the in-depth interview were analyzed based on Strauss and Corbin (1990). In the scale construction phase, the quantitative data collected from survey was analyzed by using the SPSS for Windows (Statistical Package for Social Science), Microsoft Office Excel, and LISREL and by the following methods: (1) Analyzing itemized PILTA using Pearson Correlation for Corrected Item-Total Correlation; (2) Obtaining Internal Consistency and reliability using Cronbach's Alpha Coefficient; (3) Analyzing the construct validity using EFA; (4) Analyzing the construct validity using LISREL for CFA to obtain consistency between the proposed scale and the collected data; and (5) Setting the normative score using Percentile and T-Score.

Ethical Considerations

The ethics review committee for research on human subjects at the Centre for Social and Behavioural Sciences Institutional Review Board, Prince of Songkla University, granted approval for this study (Ref. no: NREC 2017_002, 24 January 2017). The participants received a detailed explanation verbally and in writing, outlining the research aims and processes, participant involvement, data collection methods, and assurance about confidentiality. Identifying information would be removed.

Results

The following procedures show that the PILTA was developed in accordance with the process of scale development.

Table 3 The correlation coefficient between the PILTA scale and the psychological assessments

(*N* = 165)

Scale	Correlation coefficients of PILTA			
	1	2	3	4
1. PILTA	1.11	-	-	-
2. Seeking of Noetic Goals scale	0.601**	1.00	-	-
3. Purpose in Life scale	0.597**	0.414**	1.00	-
4. Beck Hopelessness scale	-0.616**	-0.495**	-0.637**	1.00

Note: ** p < .01 (two-tailed).

Phase I: Item Generation

Data collected from in-depth interviews were synthesized by the researchers to develop 100 question items, which obtained content validity from the three experts. The 100 question items were divided into three subcategories: conditions, strategies, and consequences. The "conditions" comprised three themes: (1) realizing self-worth; (2) receiving love, care, and support from others; and (3) awareness of life-exemplar. The "strategies" comprised three themes: (1) setting the life purpose; (2) having self-discipline; and (3) providing love, care, and support to others. The "consequences" comprised two themes: (1) happiness; and (2) promoting peace in the community and world.

The scale revision was made to comply with the experts' comments, including grouping any repeated questions into a single question, making language clearer to understand, and adjusting words to be more suitable for the target group. As a result, five questions were deleted. In the end, a total of 95 items in seven components were retained. The 95-item PILTA was tested among 30 students for its reliability and yielded the Cronbach's alpha of .92. The 95-item are shown in Table 1.

Examples of question items in each component are (1) *Connectedness to oneself and others*, "You think you must have a good future to make your parents proud"; (2) *Meaning of life*, "Your self plays an important role to gain success in life"; (3) *Self–worth*, "Your life's direction depends mostly on yourself"; (4) *Goal orientation*, "To be successful, one needs to use his full capacity to do what he intends"; (5) *Self-belief*, "You think you can solve the problem"; (6) *Determination*, "You try to reach your intended goal"; and (7) *Gratitude to oneself and others*, "You wish to take care of your parents when they are old".

Phase II: Scale Construction

The 95-question PILTA was further tested for: (1) CITC and item-total correlational coefficient analyses; and (2) EFA. The CITC and item-total correlational coefficient analyses were performed among the 200 participants. All 95 question items remained for EFA. The EFA was performed using varimax with Kaiser Normalization and allowed for 100 rotations, and used

the factor loading of .3 as the cut-off point to include or delete the question items. None of the 95-question items was deleted. The EFA results showed seven components on the 95-question items. The Kaiser-Meyer-Olkin (KMO) was .884, which indicated an appropriateness for the analysis ($\chi^2 = 2876.84$; df = 78; $p < .0005$). The correlation matrix was not an identity matrix. The factor loading for question items in this study ranged between .76 and .89. There was no multicollinearity among the seven components. The correlation coefficients among the seven components were all positive and ranged between .42 and .65 at a significance level of .001. The Bartlett's Test of Sphericity was 750.45 ($p < .0005$), indicating that the correlation matrix was significantly inconsistent with the identity matrix. The Principal Component Analysis (PCA) showed that all seven components were able to explain approximately 70.377 percent of the PILTA as shown in Table 2.

The Cronbach's alpha coefficients for the seven components were .89, .89, .87, .82, .83, .77, and .75 respectively. The reliability for the whole scale was .92.

Phase III: Scale Evaluation

In the scale evaluation phase, the 95-item scale was tested for dimensionality to confirm the scale construction, validity using the criterion-related validity with three other comparable scales, and reliability for the total PILTA as well as for each dimension of the PILTA.

As the PILTA was developed based on grounded theory during the item generation phase, the researchers used the EFA to explore the number of components. While other similar assessments obtained one to six components among three to 20 questions (Nilchantuk, 2020), the PILTA in this study was found to have seven components in 95 question items.

The researchers used CFA to further confirm the construct of these seven components. The CFA results showed that the proposed model had a good fit with the observed data. Therefore, the construct validity of the PILTA was obtained. The factor loading for each observed variable ranged between .50 and .65 at the significant level of .01 as shown in Figure 1.
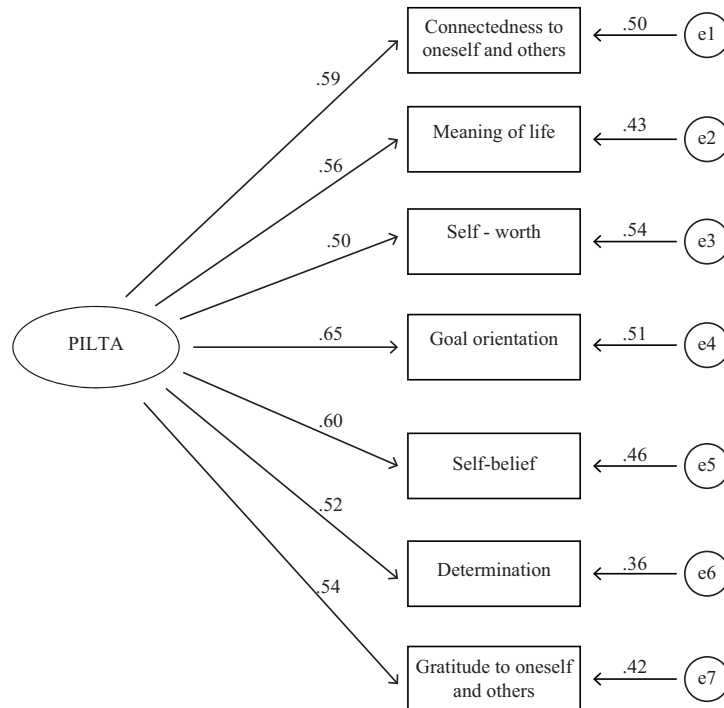
Figure 1   Confirmatory factor analysis of the PILTA's model
Note: PILTA = Purpose in Life Scale for Thai Adolescents.

Each factor loading and each observed variable had covariance with the major component ranging from 36 percent to 54 percent as shown in Figure 1. The CFA showed that the proposed model had a good fit with the observed data (x^2 = 7.83; df = 9; p =.551; CFI = 1.00; GFI = .99; AGFI = .98; RMSEA = .000; x^2/df = .87).

The proposed PILTA was further assessed for the criterion-related validity using the Pearson Correlation Coefficient with the three Thai version scales as aforementioned. The results showed that the PILTA scale had a positive correlation with the Seeking of Noetic Goals scale (r = .601) and the PIL scale (r = .597) at a significance level of .01. The PILTA scale had a negative correlation with the Beck Hopelessness scale (r = -.616) at a significance level of .01, as shown in Table 3.

To further strengthen the construct validity of the PILTA, the known group technique was used to assess the construct validity. The result showed the mean scores of the whole scale of the PILTA between those two groups were significantly different at .001 (t = 13.63, p = .001). The Cronbach's alpha coefficient for the whole scale was .92. The norm of the PILTA scale was calculated using

percentile rank and normalized T-score. From the total score of 380, the norm of the 95-question PILTA ranged between 264 and 380. The results of the T-score showed that the PILTA had a normal T-score ranging between T22 and T67.

Discussion

Existing PIL scales are developed in North America and Europe (Bronk et al., 2018; Schulenberg et al., 2011) and are mainly suitable for adults. This study aimed to construct new scales that would be more appropriate to assess Thai adolescents. The PILTA was developed using a mixed method, based on Damon et al. (2003) along with the GT. With this study design, the question items could assess the process of developing PIL, which was supported by Burrow et al. (2014) who illustrated the process of enhancing purpose including exploration and commitment. The PILTA can be viewed as an early assessment of PIL that explains the process of developing purpose, which is still lacking in existing PIL scales.

This study developed a measurement scale that adapted the PIL for Thai adolescents. As a promising new

tool, the PILTA demonstrates good psychometric properties and strong internal consistency combined with a good, discriminant construct validity. Six out of the PILTA's seven components – connectedness to oneself and others, meaning of life, self–worth, goal orientation, self-belief, and determination – are partially congruent with the three dimensions of the CPS "Claremont Purpose Scale" that have been used to assess the goal-directedness, personal meaningfulness, and beyond-the-self dimensions of PIL among adolescents (Bronk et al., 2018). Moreover, within the seven PILTA components, a dimension of "gratitude to oneself and others" is considered to be a significant characteristic in the Thai context (Balthip et al., 2017). This dimension essentially represents the Thai values in which gratitude and generosity are foundational to promoting resiliency amidst uncertainty and change.

The PILTA confirms the knowledge that constructs the existing PIL assessments. However, the PILTA further enhances the cultural relevancy and the "process" aspect of the PIL. The PILTA also adds "conditions" such as "what gives purpose in life?" to illustrate the "strategies" that educate how to achieve life purpose, as well as the consequences.

Conclusion and Recommendation

With its seven components, the PILTA is able to illustrate the process of purpose in life development. It offers a useful new tool for any developmental scientists who might be interested in studying PIL. The process of developing the PILTA used mixed-method approach among Thai adolescents. As a result, it adds an explanation of the "process" of purpose in life development. This culturally specific assessment tool may therefore be more suitable for assessing Thai adolescents and can be adjusted in other contexts to assess, enhance and develop PIL among adolescents in general.

However, because the PILTA was developed from qualitative grounded theory based on the Thai culture, its application may be limited to use in other countries. Researchers in other countries need to test the PILTA to ensure its suitability for their populations and cultures. For generalizability, the authors encourage future interested researchers to conduct a benchmark study across different cultures and countries.

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