



# A Confirmatory Factor Analysis of Moral courage of Undergraduate Students in Higher Education Institutions of Northeastern Region, Thailand

**Prasarn Sripongplerd**, Doctor of Philosophy Program in Psychology, Faculty of Education, Maha Sarakham University, Mahasarakham, [Sarnsri146@gmail.com](mailto:Sarnsri146@gmail.com)

\***Rungson Chomya**, Associate Professor, Division of Psychological Program, Faculty of Education, Mahasarakham University, Mahasarakham Province, [rungson.c@msu.ac.th](mailto:rungson.c@msu.ac.th)

**ABSTRACT-** Ethical behavior is fundamental to the quality of the population, especially in college-age that is going through a process of socialization where it needs to be molded into the proper desirable traits. However, there are still questions about the elements and indicators of ethical behavior. Therefore, the purpose of this research was to analyze the confirmatory factor of Moral courage of Undergraduate Students in Higher Education Institutions of Northeastern Region, Thailand. The samples were 1,200 of 5 undergraduate years 1-4 undergraduate the academic year of 2019 Students in Northeastern Higher Education Institutions. They were chosen by multiple random sampling. The instrument used in this research was the Moral courage questionnaire for University Students in Northeastern Higher Education Institutions. There were 45 items with 5 rating scales by had division item between 0.212 – 0.674 and the reliabilities at 0.947. Data were analyzed by confirmatory factor analysis performed. The research results were found that; There were 5 factors of Moral courage of University Students; standing up for principles, recognize the moral situation, moral behavior, endurance of threats, contemplate the risks. The Moral courage model in accordance was fit with the empirical data with Chi-square ( $\chi^2$ ) = 29.56 df=20, p=.077, GFI=1.000, AGFI=0.980, RMSEA=0.020, SRMR=0.010 and they were significant at .01 level. All variables were appropriate as observed variables of moral courage.

**Keywords:** Confirmatory Factor Analyze, Moral Courage, University Student

## I. INTRODUCTION

Moral courage is an important ethical behavior that can help solve social problems because society has ethical problems, in part because people in society lack moral courage, have a fear of expressing the right act. Knowing that this is a wrong act, but the courage to stand up for the right, lacking moral courage, leads to problematic behavior. However, Murray (2010) has suggested that moral courage is the ultimate virtue of ethical behavior, which requires a firm commitment to fundamental ethical principles despite the risks such as Reputation, humiliation, emotional anxiety, neglect, retaliation, and dismissal. An ethical person is prepared to face the uncertainty that results from making the right decisions, despite the potential consequences; Samuel Johnson (The reference is from Rushworth M. Kidder and Martha Bracy. 2001: 5) concluded that courage is the greatest virtue of all virtues because if a person does not have that virtue it cannot be guaranteed that he will protect others, the good thing is to believe in honesty or fairness if the person is not willing to exercise courage in times of adversity. So what is known as ethics hanging on the wall in different places is not applied, without the courage to act, moral convictions are of no importance at all.

Moral courage refers to the ability of the mind to overcome fears while facing ethical conflict situations to achieve good, correctness both to the collective and the organization rather than personal. This manifests itself as a determined and determined behavior to act in the right way, the behavior shown must comply with the principles of values. Kidder (2005) defines moral courage as a personal ability to overcome fears, willingness to speak or do the right thing, confront powerful things, even with a threat to oneself. And Miller (2000: 4) describes moral courage as the ability to overcome fear, shame, and humiliation to admit the mistakes of those who admit it, it denies the evil to condemn injustice and also resists immoral or indecisive orders.

From studies on the constituents of moral courage have shown that many scholars abroad have spoken of the constituents of moral courage such as Kidder (2005) studied moral courage behavior, stipulating that a person with moral courage was made up of three components: (1) danger, (2) endurance, (3) principles; Miller (2005) defines five elements of ethical courage: (1) presence and recognition of a moral situation, (2) moral choice, (3) moral behavior, (4) individuality, (5) fear; Lachman

(2007) defines the essential elements for moral courage, consisting of four elements: (1) courage to be moral requires, (2) obligations to honor, (3) danger to manage, (4) expression and action; Sekerka, Bagozzi & Charnigo (2009) defines five components of professional moral courage: (1) moral agency, (2) multiple values, (3) endurance of threats, (4) goes beyond compliance, (5) moral goals. Besides, Fagin-Jones and Midlarsky (2007) found that There are four components of moral courage: (1) empathic concern, (2) social responsibility, (3) Altruistic moral reasoning, (4) risk-taking. And the results of the Norsuwan (2012) study found that Teachers' moral courage has four components, 11 indicators: (1) principles, (2) moral situation, (3) moral behavior, (4) endurance.

However, student age is considered to be the age that is in the process of recruiting to become a quality government personnel, preparing to serve the nation's society, if they are well trained, they can become quality personnel of the country. Therefore, the researcher was interested in studying the composition of the moral courage of students, conducting a study in the Northeastern region, Thailand by using the confirmative element analysis technique. Which provides a clear element of moral courage using a conceptual framework from the results of the analysis of all five survey elements: (1) standing up for principles, (2) recognize moral situation, (3) moral behavior, (4) endurance of threats, (5) contemplate the risk as a conceptual framework for the study of the elements of moral courage of students to form a clear body of knowledge about ethical courage. It is used as a guideline for the creation of a training program for the moral courage of students in Northeastern higher education institutions in the next phase of research.

## II. RESEARCH OBJECTIVES

The objective of this research (1) is to analyze the confirmative component of the moral courage of Northeastern students. and (2) to examine the structural validity of the moral courage of Northeastern students with empirical information.

## III. RESEARCH CONCEPTUAL FRAMEWORK

In this research framework, the researcher has drawn elements of moral courage from the exploratory component analysis. It was found that there were 5 components of moral courage among students, with 13 indicators: **(A) standing up for principles** 5 indicators: (1) honesty, (2) responsibility, (3) respect, (4) fairness, (5) compassion. **(B) recognize moral situation** has 2 indicators: (1) assess situation, (2) scan for values. **(C) moral behavior** has 2 indications: (1) talking behavior, (2) acting behavior. **(E) endurance of threats** has 2 indicators which are (1) endure the hardship, (2) endure the fear. **(F) contemplate the risk** has 2 indicators: (1) physical risk, (2) mental risk as a conceptual framework for the study and analysis of the confirmative elements as shown in the illustration.

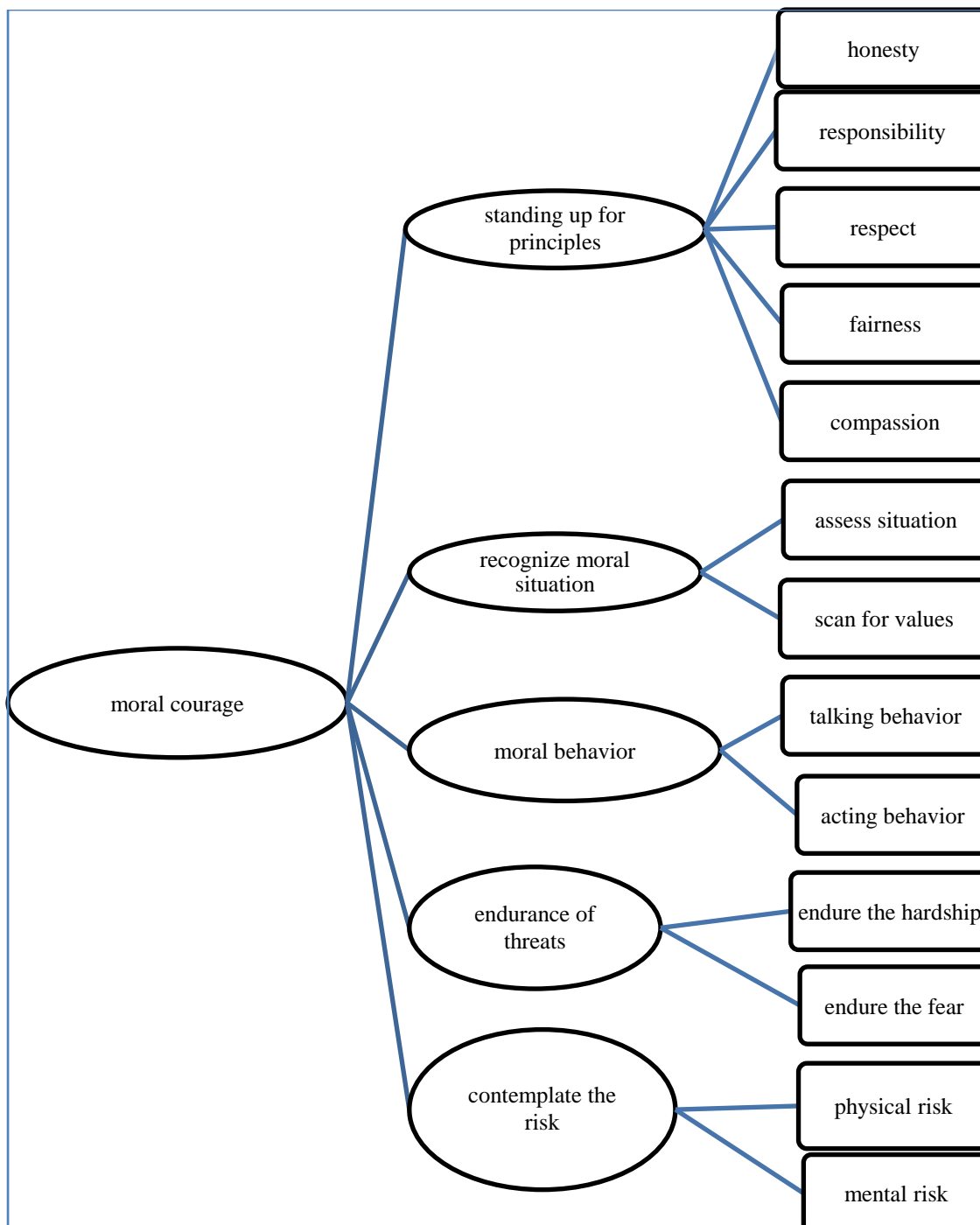


Figure 1 Research Conceptual Framework

#### IV. RESEARCH METHODOLOGY

This research is a quantitative research using the confirmatory factor analysis technique.

##### 1. Population and sample

1.1 The population used for the study of the confirmative component were 382,519 students studying at the bachelor's degree level, year 1-4, the academic year 2019 in higher education institutions under the Higher Education Commission in Northeastern Region, Thailand totaling 382,519 people (The Higher Education Commission,2019)

1.2 The sample group used to study the composition of moral courage with the Confirmatory Factor Analysis (CFA) were 240 students studying at the bachelor's degree level, years 1-4, the academic year 2019, the year 2019 in Higher education institutions under the Commission on Higher Education in the Northeastern region, totaling 1,200 students.They were acquired by Multi-stage Sampling as follows:

Step 1, Classify universities under higher education institutions in the northeastern region into 5 provincial groups. Step 2: Random provinces in each province group (Cluster Sampling), 1 province per province. Step 3: Institutes randomly in the provinces that were randomly selected from Step 2, 1 institute per province, using simple random sampling by drawing lottery for 1 institution for use as a sample. Step 4: Simple Random Sampling to select the faculties in each institution. The random results appeared as follows: (1) Faculty of Science and Technology, Loei Rajabhat University. (2) Faculty of Management Science, Sakon Nakhon Rajabhat University.(2) Faculty of Education, Mahasarakham University. (3) Faculty of Humanities and Social Sciences, Nakhon Ratchasima Rajabhat University. (4) Faculty of Public Health, Ubon Ratchathani Rajabhat University.Step 5: Students were randomized each year by using Stratified Random Sampling, in which the researcher assigned a sample of 60 students per strata. To determine the sample size used in the development of this indicator, the researchers determined the sample size based on the Comrey and Lee (1992) concept that suggested that the sample group of 50 was considered very poor. The sample group of 100 was considered poor. The sample group of 200 was considered fair. The sample group of 300 was considered good. The sample group of 500 was considered very good. And samples of 1,000 or more than 1,000 were considered excellent (as excellent).

**2. Research instruments:** The instrument used in this research is a measure of moral courage of students of Northeastern higher education institutions created by the researcher, which is characterized by a 5-level rating scale as follows: highest, high, medium, low, and lowest, has the power to classify from .02, number 45, which has the power to classify each item between 0.212 - 0.674. And the Pearson correlation was analyzed and the confidence of the questionnaire was analyzed by Cronbach's Alpha coefficient. The confidence of the whole was 0.947 (Cronbach, L.J. 1951).

**3. Data collection:** Collecting this data, the researchers distributed 1,200 manual measurements and collected, to reduce the storage tolerance by 20%, a total of 1,200 complete measurements were obtained, more than required, to comply with the principles of Confirmatory Factor Analysis (CFA) to provide evidence of the structural validity of the measurements.

**4. Data analysis:** The researcher conducted the data and analyzed the data according to the statistical method by using confirmatory factor analysis to examine the harmonization of the structural model of the moral courage of students according to the conceptual framework and empirical data by determining the parameter estimation using the Maximum Likelihood method. Which considering the chi-square value is not statistically significant, Goodness - of - fit index(GFI),Adjusted Goodness - of -fit index (AGFI)over 0.90, Root Mean Square Residual(SRMR), and Root Mean Square of Approximation(RMSEA)lower 0.05.

## V. RESEARCH RESULTS

1. An analysis of the confirmation elements of the structural model of the moral courage of students found thatthe moral courage of the students had a correlation coefficient between 0.063-0.721, the responsibility (RES) and the fairness (JUS) has a maximum correlation coefficient of 0.721. the respect (REP) and the endure the fear (TOP) have the lowest correlation coefficient of 0.063. The results of a preliminary examination of the moral courage of students found that an indicator is not an identity matrix, indicating that the indicators are correlated enough to be able to further analyze the elements (Bartlett's Test:  $\chi^2=8414.130$  df=78 p=.000) when considering each indicator has Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO)= 0.870, and Measure of Sampling Adequacy (MSA) has value is between 0.679-0.942, showing that indicators of student moral courage are correlated enough to be used in further confirmation of the analysis of elements;

Table 1: The Correlation Coefficient of Moral courage of Students (n=1,200)

Indi cato r	HO N	RES	REP	JUS	SIM	SIT	CVA	TAB	PEB	TOR	TOP	PHR	PSR
HON	1.00												
RES	.531 **	1.00 0											
REP	.264 **	.646 **	1.00 0										
JUS	.632 **	.721 **	.434 **	1.00 0									

SIM	.427	.339	.187	.486	1.00									
	**	**	**	**	0									
SIT	.240	.107	.112	.197	.412	1.00								
	**	**	**	**	**	0								
CVA	.360	.344	.174	.470	.450	.591	1.00							
	**	**	**	**	**	**	0							
TAB	.328	.185	.128	.323	.409	.580	.588	1.00						
	**	**	**	**	**	**	**	0						
PEB	.269	.126	.075	.150	.412	.643	.618	.545	1.00					
	**	**	**	**	**	**	**	**	0					
TOR	.198	.099	.019	.157	.381	.514	.553	.423	.599	1.00				
	**	**	**	**	**	**	**	**	**	0				
TOP	.277	.117	.063	.231	.390	.419	.562	.448	.552	.565	1.00			
	**	**	*	**	**	**	**	**	**	**	0			
PHR	.231	.048	.029	.164	.372	.506	.537	.471	.463	.506	.550	1.00		
	**	**	**	**	**	**	**	**	**	**	**	0		
PSR	.318	.051	.047	.189	.451	.527	.423	.479	.465	.562	.528	.613	1.00	
	**	**	**	**	**	**	**	**	**	**	**	**	0	

Bartlett's Test:  $\chi^2=8414.130$   $df=78$   $p=.000$   $KMO=0.870$  Measure of Sampling Adequacy (MSA) มีค่าอยู่ระหว่าง 0.679-0.942

\*\*p<.01

\*p<.05

2. The Verification of Consistency between the Researcher-Generated Student Moral courage Model and Empirical Data.

The researchers used elements of the moral courage of students to test their consistency with empirical data, consistent with the empirical data, as shown in the table

Table 2: The Conformity Index and Comparative Index of the Moral courage Model of Students. (n=1,200)

Index	Criterion	Statistical values in the model
$\chi^2$	Not statistically significant, or proportion of $\chi^2 / df$ not more than 2.00	$\chi^2=29.560$ $df=20$ $p=.077$ $29.560/20=1.478$
GFI	over 0.90	1.000
AGFI	over 0.90	0.980
CFI	over 0.95	1.000
RMSEA	lower 0.05	0.020
SRMR	lower 0.05	0.010

PoonpongSuksawang(2013: 15-16).

From Table 2, the results of the verification of the consistency of the moral courage measurement model of students with the empirical data in the absolute group index were found Chi-square value ( $\chi^2$ )=29.56  $df=20$ ,  $p=.077$ , GFI=1.000, AGFI=0.980, RMSEA=0.020, SRMR=0.010. The comparison group index found that CFI=1.00 when considering the consensus criteria, it was found that the chi-square value was not statistically significant, and another index also indicates a model for measuring student moral courage with empirical data consistent with empirical data, in which students' moral courage has five components: the *standing up for principles*, the recognize moral situation, the moral behavior, the endurance of threats, and contemplate the risk as in the table.

Table 3 of Analysis of the Confirmative Elements of Student Moral courage (n=1,200)

Ethical courage	Element weight value					CR
	b	SE	t	FS	SC	
1. Standing up for principles	0.363	0.032	11.236**	-	0.586	0.343
1.1 honesty	1.000	-	-	0.284	0.620	0.386
1.2 responsibility	0.327	0.079	4.131**	0.345	0.203	0.041
1.3 respect	0.306	0.053	3.751**	0.141	0.190	0.036
1.4 fairness	0.786	0.078	10.089**	0.041	0.487	0.241
1.5 compassion	1.560	0.136	11.501	0.582	0.968	0.934
2. recognize moral situation	0.768	0.031	24.905**	-	0.990	0.980

2.1 assess situation	1.000	-	-	0.128	0.775	0.600
2.2scan for values	0.988	0.036	27.262**	0.130	0.766	0.588
3. moral behavior	0.697	0.030	22.963**	-	0.977	0.954
3.1talking behavior	1.000	-	-	0.079	0.714	0.509
3.2 acting behavior	1.070	0.043	25.014**	0.098	0.764	0.583
4. endurance of threats	0.633	0.030	18.589**	-	0.844	0.713
4.1endure the hardship	1.000	-	-	0.157	0.749	0.561
4.2 endure the fear	1.003	0.043	23.129**	0.200	0.751	0.564
5. contemplate the risk	0.667	0.030	22.208**	-	0.870	0.756
5.1physical risk	1.000	-	-	0.183	0.767	0.588
5.2 mental risk	1.042	0.043	24.146**	0.249	0.799	0.636

$\chi^2=29.560$   $df=20$   $p=.077$   $GFI=1.000$   $AGFI=0.980$   $CFI=1.000$   $RMSEA=0.020$   $SRMR=0.010$

\*\* $p<.01$

From the table, it was found that moral courage had a standard component weight of 0.586-0.977, where every element and every indicator is statistically significant at the .01 level. The recognized moral situation has a maximum standard component weight of 0.990, has a high level of variation with moral courage (98.00%). The following, the moral behavior has a standard component weight of 0.977, there was a high variation with moral courage (95.40%), the contemplate the risk with the standard component weight of 0.870, moderate variation with moral courage (75.60%), the endurance of threats 0.844, there was a high variation with moral courage (71.30%). And the standing up for principles has a minimum standard component weight value of 0.586, there was moderate variation with moral courage (34.300%), respectively.

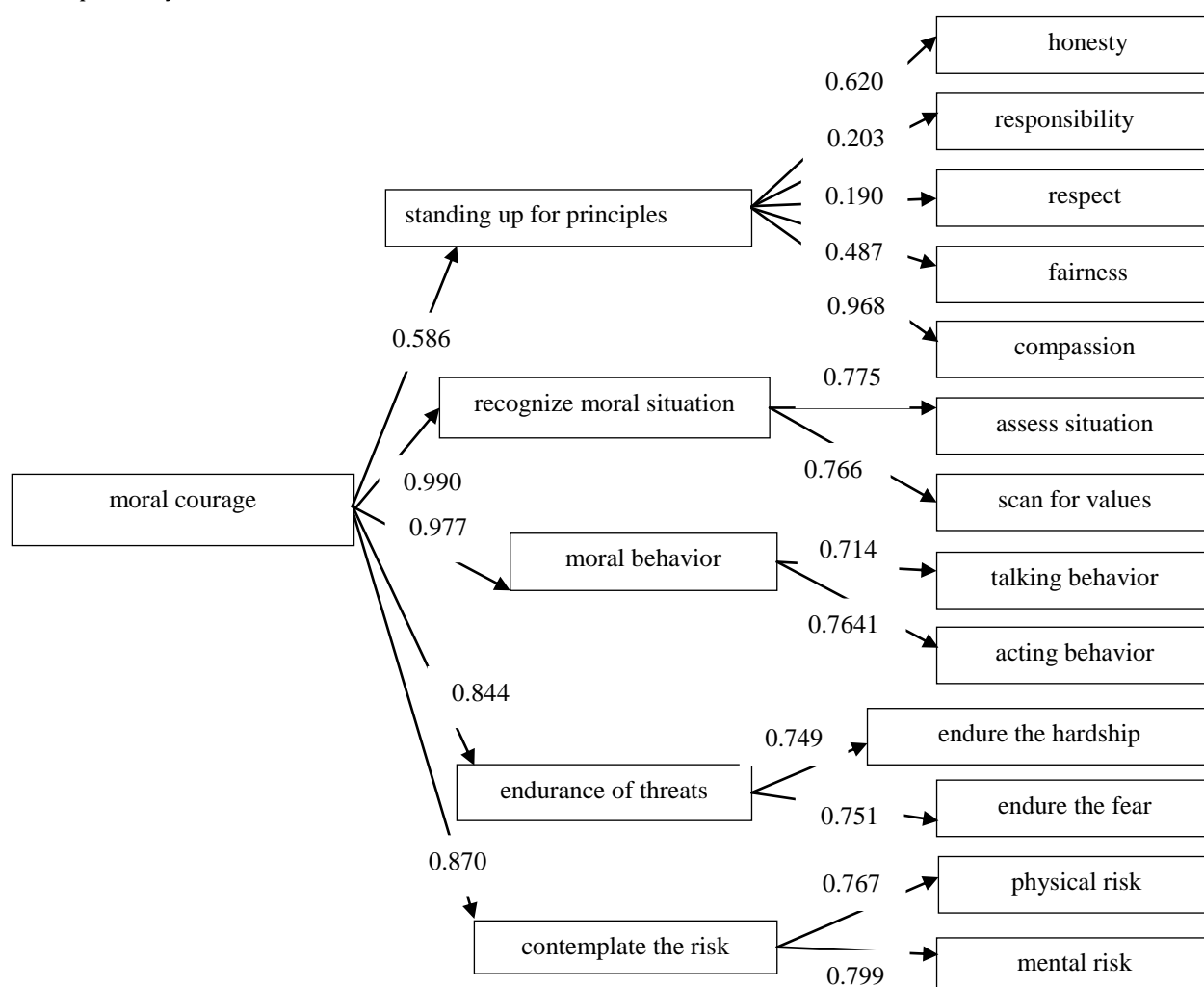


Figure 2: Moral courage measurement model of university students  
 $\chi^2=29.560$   $df=20$   $p=.077$   $GFI=1.000$   $AGFI=0.980$   $CFI=1.000$   $RMSEA=0.020$   $SRMR=0.010$

## VI. DISCUSSION

The results of the analysis of the confirmation elements of the moral courage model of students under higher education institutions in the Northeast. From testing the harmony of the model with the empirical data, it was found that the confirmative component of the student's moral courage component is consistent with empirical data, which has five components of the moral courage of students: the standing up for principles, the recognize moral situation, the moral behavior, the endurance of threats, and the contemplate the risk. This component is consistent with Pakwipar Norsuwan's study of the moral measure of moral courage among teachers (2015: 87), who found that the model was consistent with the empirical data in the individual study, the results of each component could be discussed as follows.

1.the recognized moral situation has the highest standard component weight value of 0.990.It may be because the recognized moral situation was the first important factor in encouraging ethical courage, in line with Miller (2005) found that the presence and the recognize moral situation (presence and recognition of a moral situation) were elements of moral courage. Because the existence of an ethical situation is imperative because a person cannot act ethically if they are not faced with a challenging ethical situation and acknowledging that ethical situation is the first step towards moral courage.

2.Moral behavior was the second most important element with a standard component weight of 0.977, It may be because ethical expressions are evident in patterns of behavior or actions, for a person to be ethical courageous behavior, whether verbally or in action. This is consistent with Miller (2005) that moral behavior (moral behavior) is a component of moral courage, however, behavior is imperative because it helps to distinguish moral courage from ethical reasoning, how a person behaves depends on decisions that are consistent with his or her moral beliefs. And is consistent with Lachman's (2007) idea that expression and action are elements of moral courage because it expresses self-determination and negotiation skills.

3. the contemplate the risk (risk) is the third most important element with a standard component weight of 0.870. This may be because before performing moral courage, it has to be assessed and the risks that it will follow, these were in line with Kidder (2005:) concept that the presence of the Danger is the only way to know that true courage is the key issue, the person must be aware of the risks and look honestly at the consequences of compliance and non-compliance and if the individual adheres to the principles and is willing to endure adversity. But a person has not seriously assessed the risk of action and inaction and then maybe called an expression of stupidity or self-righteousness. And in line with the concept of Fagin-Jones & Midlarsky (2007), It was found that risk-taking is a component of morals. courage, because of its involvement in saving lives, individuals have to be willing to face things that will endanger themselves and their families. Hence, taking a risk is an important element, am often willing to take a risk to do it,

4.the endurance of threats is the fourth most important element with a standard element weight of 0.844. Maybe it's because the effects of showing moral courage are often negative, whether it's intimidation, insults, hatred, slaughter, etc. Therefore the person must endure the consequences that will be returned, according to Greitemeyer Fischer, Kastenmueller, and Frey (2006) (Cited in Osswald et al. 2010: 4) It has defined moral courage as courageous behavior with anger and resentment that is intended to enforce social and ethical norms regardless of its negative social impact. This negative social impact helps to distinguish moral courage from other socialist behavior. And in line with the concept of Sekerka, Bagozzi &Charnigo (2009) found that endurance of threats is a component of moral courage because it is faced with difficulties in moral-related events, often of deterioration or threats that affect tolerance and tolerance. This is reflected in individuals who are faced with both perilous difficulties and perceptions or threats to tolerance.

5.the standing up for principles is the last important element with a minimum standard element weight of 0.586.This may be because each display of moral courage is made up of an ethical principle that is self-adherent, and this ethical principle is considered a measure of moral courage, because if any unscrupulous act might not be called moral courage, it might just be physical courage, in line with Kidder's concept (2005, citedNorsuwan,2012) found that moral courage must comprise an important element: Principle must be adhered to because it is what separates moral courage from courage. Standing up for principles of moral courage is a matter of honesty, the conviction that leads to practice identified by the five core values: honesty, responsibility, respect, fairness, and compassion.

## VII. CONCLUSION

The results of a confirmation element analysis of the moral courage model found that The Elements of Moral courage of Northeast Students consists of 5 elements which sort the water, film, descending

elements as follows: the recognize moral situation, the moral behavior, the contemplate the risk, the endurance of threats, and standing up for principles have a component weight value of 0.990, 0.977, 0.870, 0.844, and 0.586 respectively. The component model is consistent with the empirical data based on the chi-square value ( $\chi^2$ )=29.56 df=20, p=.077, GFI=1.000, AGFI=0.980, RMSEA=0.020, and SRMR=0.010

## VIII. SUGGESTION

**1. Suggestions for applying the research results: (1)** Those involved in student development can consider the research results as a training guideline or to organize activities for students further. Besides, the results of the research will provide the basis for further development of the ethical prowess of students. **(2)** Based on the results of an analysis of the confirmation elements of moral courage found the consistency of the model. The elements found can be used to develop activities or learning management styles that foster moral courage for undergraduate students in higher education institutions.

**2. Suggestions for further research: (1)** A causal model analysis (SEM) should be studied with the moral courage of students to promote the moral courage of students through various factors. **(2)** A lesson program format should be developed to strengthen moral courage based on the elements studied with different techniques or methods to help students achieve better ethical courage. **(3)** There should be an unchanged study at the level, year, or group of disciplines in undergraduate students of higher education institutions.

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