

## A Model of Relationship between Gratitude and Prosocial Motivation of Thai High School and Undergraduate Students

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To examine a model of relationships between feelings of gratitude and prosocial motivation in adolescents, a survey of 414 second grade of high school students and 191 undergraduate students in Thailand was conducted using a multi-aspect questionnaire about gratitude. The questionnaire measured the following items involved in hypothetical helping situations: (a) perception on gains for a recipient, cost of a benefactor, desirability of the favor, and obligation to give help as cognitive variables affecting the feelings of gratitude; (b) the feelings of gratitude which include feelings of appreciativeness, indebtedness, and general positive; and (c) enhancement of prosocial motivation on recipients as a consequence of gratitude. Results indicated that, in high school and undergraduate students, appreciativeness is the only feeling that showed positive correlation to the enhancement of prosocial motivation, whereas the perception on the cost of a benefactor and the gain of a recipient showed positive correlation to the feelings of appreciativeness. In addition, both groups of students reported more degree of the feelings of appreciativeness and enhancement of the prosocial motivation when regarding their father and mother's help rather than that of friends. It is also discussed that the feelings of appreciativeness correlated with a concept of respect which probably strengthens the potential of gratitude in promoting prosocial motivation.

**Keywords:** gratitude, prosocial motivation, indebtedness, adolescents, Thailand

“Gratitude with sense of obligation (*kataññu-katavedi*) is a symbol of a good man”  
(a maxim in Buddhism,).

Gratitude is an emotional experience in acknowledgment for a favor received from others. In Thailand, as the above maxim, the gratitude and a thought of repaying a favor are emphasized as a standard moral life. Apart from basic and desirable personalities of human, the gratitude is also considered to be an important emotional resource contributing to social stability through its reciprocal prosocial behavior between a benefactor and a recipient, for example, parent and children, teacher and student, among peers, and others (Phra Khrusrisutasophon, 2006). Thus, the gratitude is largely promoted in children and youth through both moral education in school and moral practice in a religious place (Mulder, 1997; Na Bangchang, 1993; Pattanarat et al., 2002).

In a field of psychology, previous findings had identified significant relationship between gratitude and prosocial motivation. Studies on gratitude focused on prosocial effect were mostly conducted on adult or young adult populations such as university students (Bartlett & DeSteno, 2006; McCullough, Kilpatrick, Emmons, & Larson, 2001; Naito, Wangwan, & Tani, 2005; Tsang, 2006). From a review of literature on gratitude, McCullough et al. (2001) argued that “gratitude is a moral emotion which responds to both moral behavior and a motivator of moral behavior” (p. 250). According to their review, they claimed that, as a moral motive, gratitude enhances prosocial behavior in the recipient toward either the benefactor or the others. Moreover, recent experimental evidence provided a strong support to the prosocial effect of gratitude (Bartlett & DeSteno, 2006; Tsang, 2006).

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Although the literature on gratitude in adults has grown substantially in the past few decades, little is known about gratitude in children and adolescents (Froh & Bono, 2008). However, it is apparent that gratitude appears to be psychologically benefits to youth. Promoting a grateful mood in students may help beneficial processes, such as creative thinking and motivation to improve one's self (Fredrickson, 2004). Furthermore, having examined the prosocial consequence of gratitude in early adolescence, Froh, Bono, and Emmons (2010) recently found that social integration at 6 month later could be predicted with gratitude at one time, and prosocial behavior and life satisfaction at 3 month later mediated the relation between the gratitude and the social integration. From these results, they have suggested gratitude plays significant role in developing positive youth. Thus, an understanding how gratitude effects on prosocial motivation in adolescence is a critically important factor for promoting positive social behavior in youth.

In the present study, we examine an influence of gratitude on prosocial motivation occurring in youth with a focus on middle and late adolescence. The age period of middle adolescence is 15-18 years and late adolescence is 18-21 years in Thailand (Janaim, 1999). As middle and late adolescence is particularly an important age period during which the child is able to understand and appreciate the kindness act from others and engage in a diversity of prosocial behavior. Although, much is known with regards to the prosocial effect of gratitude in university students which is an age period from late adolescence to young adults, there are a few researches on gratitude in middle adolescence (Froh & Bono, 2008). Furthermore, previous studies have not yet investigated a possible difference between middle and late adolescents in correlation with perceptions on situational variables and feelings of gratitude that can affect motivating prosocial behavior. It is plausible that socio-cognitive and socio-motive development due to changes in the social context and interpersonal relationship might be a cause for variations of perception on situations and feelings of gratitude. To understand gratitude relating with prosocial motivation in adolescence, the present study investigated the relationship between gratitude and prosocial motivation in middle adolescence and in late adolescence by comparing the pattern of relations in those two adolescent age periods.

According to the study of McCullough et al. (2001) on the investigation of a relationship between gratitude and prosocial motivation, an assessment requires the following three psychological processes:

- a) cognition - perception or interpretation to a helping situation that can affect on feelings of gratitude.
- b) emotion - grateful emotion is evoked from helping.
- c) motivation - prosocial motivation arises from grateful feelings.

### **Determinants of Gratitude: Cognition of Gratitude Situation**

Gratitude, as an interpersonal emotion, grateful emotion, may depend on a cognitive condition towards the social input. Tesser, Gatewood, and Driver (1968) discovered main effects of intentionality, cost, and value on feelings of gratitude. In their study, respondents indicated that they would have felt the most grateful for a benefit that is (a) perceived its intention; (b) a relative cost to the benefactor; and (c) is valuable to the recipient. In addition, deviation of an agent's action from a role-based relationship between a benefactor and a recipient is also a cognitive factor which is able to affect grateful feelings. Bar-Tal, Bar-

Zohar, Greenberg, and Hermon (1977) demonstrated that people would feel less gratitude to a help from their parent or siblings than that from their friends or a stranger. This result reveals that perceiving a help from a benefactor as an obligation might lead to having less gratitude.

For the cultural interest, in Thai society, desirability of helping behavior may give an influence to gratitude feelings. A set of appropriate helping behaviors have been pointed out in terms of gratitude (Phra Thammasophon, 1998, Gunadharo, 2005). Thus, this study will investigate whether perceiving as desirability of a helping behavior can give an effect to grateful feelings in Thai students.

### **Three Feelings of Gratitude: Appreciative Feelings, General Positive Feelings, and Feelings of Indebtedness**

Gratitude is an emotional response when people perceive benevolence of others who provide help. However, gratitude is not the only emotional reaction of receiving a benefit. Individual may react with feelings of indebtedness, which is an unpleasant and aversive emotional state when receiving a favor. Even gratitude and indebtedness are argued as different emotional states (McCullough et al., 2001; Watkins, Scheer, Ovnicek, & Kolts, 2006), but these two feelings were closely related (Tesser et al., 1968; Watkins et al., 2006). Roberts (1991; 2004) argued that indebtedness is the essence of gratitude. He has defined gratitude as a glad acceptance of our debt to one who has acted for our benefit. According to Roberts's view, gratitude is strong feelings of appreciation toward a benefactor and willingness to remain indebtedness to a benefactor. In this sense, gratitude may consist of two categories of feelings, a feeling of appreciation to a benefactor and a feeling of obligation to repayment. In addition, regarding components of a grateful emotion, Ortony, Clore, and Collins (1988) suggested that gratitude is a compound emotion arising from admiration of a praiseworthy act and joy experience when the act is desirable to the self.

Therefore, based on previous findings, we may assume that gratitude is a compound emotion. Components of a grateful emotion which are evoked when being helped are as follows: (a) a general positive feeling, namely joy or pleasure, occurring from the act of helping which is valuable to oneself, (b) a feeling of appreciation, and (c) a feeling of indebtedness.

### **Prosocial Motivation Resulting from Feelings of Gratitude**

Previous psychological studies concerning a prosocial effect of gratitude support that gratitude plays an important role in motivating prosocial behavior (Bartlett & DeSteno, 2006; McCullough et al., 2001; Naito et al., 2005; Tsang, 2006).

However, emotional experiences on gratitude may affect prosocial consequence. Bartlett and DeSteno (2006) demonstrated that gratitude increases efforts to assist a benefactor even when such efforts are costly, and that this increase differs from the effects of a general positive affective state. Moreover, Naito et al. (2005) suggested that emotional experiences of gratitude may occur in a different way depending on a cultural context. It would lead to different ways in expressions and repaying of gratitude. When receiving a favor, both Japanese and Thai university students reported both positive feelings of

gratitude and feelings of indebtedness; but in Japanese students both feelings enhanced prosocial motivation, whereas in Thai students only positive feelings enhanced prosocial motivation.

In Thai society, righteous gratitude, namely reciprocating the favor with morality in an appropriate way is emphasized (Phra Thammasophon, 1998; Phra Khrusrisutasophon, 2006). The reciprocation is not necessary to be the exactly same way with the help provided. It depends on an occasion how the reciprocation to the benefactor should be. For example, when the benefactor encounters a danger, reciprocating should be done by protecting him. Or if he is short of whatever, it should be done by sharing things to him. Even though a benefactor has a perfect life and does not need any help, it should be done by paying respect, giving love, and wishing him well. It is noteworthy that gratitude and reciprocating a favor are usually expressed via showing respect, being obedient, and being helpful to the benefactor, specifically in a context of gratitude toward parents and teachers (Mulder, 1997).

The objective of this study was to examine a model of relationship between feelings of gratitude together with its related situational cognitive factors and prosocial motivation in Thai high school and undergraduate students, which high school and undergraduate students are representative for middle to late adolescence.

Based on previous findings, the following predictions were established: (a) a feelings of appreciation would relate positively to the enhancement of prosocial motivation in both groups. In contrast, general positive feelings and feelings of indebtedness would not; and (b) the cost of helping, gains of recipient and desirability of act would positively correlate to the three feelings of gratitude, we expected that the obligation to help would correlate negatively to the three feelings of gratitude in both groups. The hypothesized model of a relationship between gratitude and prosocial motivation is illustrated in Figure 1.

To examine the above hypothesis, a questionnaire has been constructed to tap gratitude related variables and conducted an investigation on Thai students.

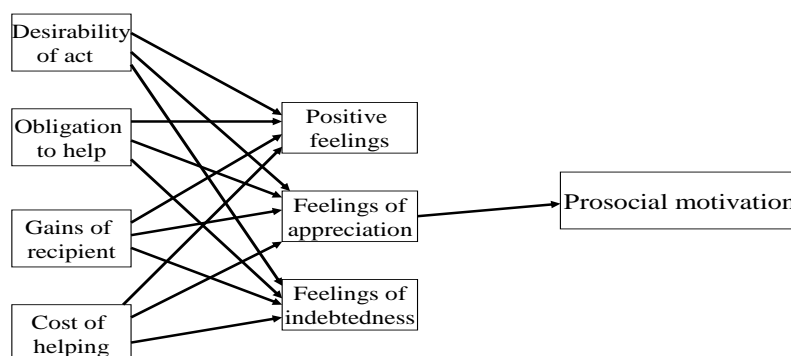


Figure 1. Hypothesized model. The bold arrow indicates the hypothesized part in both group.

## Method

### Participants

The respondents comprised of 414 second grade students from two high schools in Nakhon Pathom, a Thai province (176 men and 238 women, for age,  $M = 16.3$ ,  $SD = 0.5$ ), and 191 students from Kasetsart university in Bangkok, Thailand (62 men and 129 women, for age,  $M = 20.6$ ,  $SD = 1.2$ ), who voluntarily responded to the questionnaire. The high schools were randomly selected from a public school in urban area and a Buddhism way school in a suburb of Nakhon Pathom. Undergraduate students of Kasetsart University were taken from different faculties. Participants included 6 first year student, 102 second year student, 51 third year student, and 32 fourth year students.

### Instruments

The questionnaire has been developed to measure gratitude relating to variables. To measure gratitude emotion, we created three stories concerning with helping such as caring for physical problem, say to moral support and bestow. Also, we examined the relationship effect between a benefactor and a recipient on gratitude by changing the relationship to a benefactor. Each questionnaire has three stories of helping, which a helper in stories would be father, mother, teacher or friend of protagonist. Following each story, the questions were designed to measure three aspects of gratitude as below.

1) Questions on feelings evoked by being helped consisting of ten items was adapted from Naito et al. (2005). As mentioned above, we hypothesized that gratitude is an emotionally compound. The feelings of pleasure, appreciation, and obligation to repay were identified as the main category of feelings of gratitude. Based on the three categories, we selected tenth feeling phrase: delighted to know it's over without trouble, everything went well, it's a great help to me, thankfulness, trust, respect, regret about causing trouble, uneasiness, indebtedness, and burden for the debt (see Table 1). The participants were asked to indicate the strength of their feeling on a 5-point scale: 1 (not at all) to 5 (very much).

2) Questions on hypothesized independent variables to gratitude. A set of four questions of independent variables was developed (Naito et al, 2005) to measure four antecedent variables of gratitude. These four questions consists of (1) Desirability of the favor (7-point scale): How desirable was the father's deed?, (2) Obligation to help (5-point scale): Do you take it for granted that a father does such a thing, or does it depend on his feeling or his way of thinking?, (3) Gains earned by the protagonist (7-point scale): Regardless of the person who helped you, how much did it please, or annoy you to have your meal delivered?, and (4) Cost to the benefactors (5-point scale): How much trouble or burden do you think the father went through? The Cronbach's alpha coefficients of the questions of four independent variables reported a high degree of reliability with internal consistency of the 2 dimensions have ranged from 0.80 to 0.86 for the Japanese group and from 0.85 to 0.89 for the Thai group.

3) Questions on the enhancement of prosocial motivation . In order to measure enhancement of prosocial motivation resulting from receiving help, we provided a content of three types of prosocial behavior (caring, sharing and fulfillment). Each type of prosocial behavior, by a divergence of (either the benefactor or the stranger) and (think to help either

by themselves or by being asked to help), the twelve questions of prosocial motivation were laid out. For example, “If your father was sick, more serious than before, do you think you will care for him?”, “Do you think you will help your father’s work to comfort him?”, “If you see a sick person on a bus, do you think you will offer your seat to him?”, “More than before, do you think you will be a volunteer to help people who are suffering hardship?”

## **Procedure**

The survey was conducted from May to June 2006. The high school participants completed questionnaires in a classroom setting. Undergraduate participants, questionnaires were distributed among the class and in a free time at dormitory and were collected within a week. Each questionnaire was distributed to participants randomly.

## **Statistical Treatments**

The simultaneous multiple group analysis (Tabai, 2004) was employed to verify the effects of gratitude related variables on the enhancement of prosocial motivation for the high school group and the undergraduate group. The results from two groups were compared.

## **Results**

### **Factor Structures of Gratitude Feelings**

To examine the hypothesized factor structure of the ten feeling items which occurred after being helped in high school students and college students, a principal factor analysis followed by promax rotation was conducted separately for each group using the data matrix of the tenth feeling items multiplied by all of the responses for each feeling item (the number of participants  $\times$  the three situations) for each sample.

We obtained similar factor structure for high school and university samples as shown in Table 1. Feelings of indebtedness, uneasiness, regret about causing a trouble, and burden for the debt had a high weight on the first factor, feelings of trust, thankfulness, and respect had a high weight on the second factor, and feelings of everything went well and delighted to know it’s over without trouble had a high weight on the third factor. Based on these results, three variables were identified for the proceeding analyses. The first variable was the total score of first four items in the three stories. It is the negative feelings from receiving help and from the feeling of burden to repay, it was named as “feelings of indebtedness”. The second variable was the total score of the three items of feelings of appreciate and honoring toward benefactor in the three stories, and it was labeled as “feelings of appreciativeness”. And the third variable was the total score of the last two items in the three stories, feelings pleasure for positively outcome that occurred and it was labeled as “general positive feelings”. However, in both, high school and university student group, the first item “it’s a great help to me” had a middle degree of factor loading (Shigemasu, Yanai, & Mori, 2002) on different factor in two groups, namely there were the factor loading of 0.49 on factor 2 in high school group, but the factor loading of 0.45 on factor 3 in university student group. In order to conduct further analytical comparison between two groups, the first item was extracted from this analysis. Thus, only the factor scores of nine feeling items were calculated to obtain the

three factors for further analysis.

Table 1

*Factor Structures of Feelings Evoked by Being Helped*

<u>Item</u>	<u>High school</u>			<u>Undergraduate</u>		
	Factor			Factor		
	1	2	3	1	2	3
Indebtedness	<b>.89</b>	-.10	-.07	<b>.73</b>	-.07	.07
Uneasiness	<b>.81</b>	-.10	-.04	<b>.80</b>	-.15	-.00
Regret about causing a trouble	<b>.66</b>	.22	-.05	<b>.64</b>	.19	-.07
Burden for the debt	<b>.52</b>	.15	.01	<b>.63</b>	.14	-.01
Trust	-.07	<b>.92</b>	.01	-.01	<b>.89</b>	.02
Thankfulness	.05	<b>.79</b>	-.01	-.07	<b>.85</b>	-.02
Respect	.03	<b>.79</b>	.01	.05	<b>.81</b>	.03
Everything went well	-.06	-.03	<b>.93</b>	.03	.02	<b>.83</b>
Delighted	.07	-.02	<b>.78</b>	-.02	-.01	<b>.96</b>
<u>Factor correlations</u>						
Factor 1	-			-		
Factor 2	.45	-		.48	-	
Factor 3	.27	.39	-	.28	.20	-

In addition to these three variables, other five variables were obtained by summing up the ratings on the same question of items appearing repeatedly in three stories. These variables included subjective judgments about obligation to help (obligation, 3 items), cost to the benefactor (cost, 3 items), gains of the recipient (gain, 3 items), desirability of the help (desirability, 3 items), and enhancement of prosocial motivation (12 items).

### Reliability of the Variables

Cronbach's alpha coefficients of general positive feelings, feelings of appreciativeness, feelings of indebtedness and enhancement of prosocial motivation were calculated separately for high school and university student samples. The alpha coefficients of the variables ranged from .80 to .96 for the high school group and from .83 to .97 for the university group (Table 2).

Table 2

*Cronbach's Alpha Coefficients ( $\alpha$ )*

Variable	High school	Undergraduate
Positive feelings	0.80	0.83
Feelings of appreciativeness	0.87	0.88
Feelings of indebtedness	0.87	0.85
Prosocial motivation	0.96	0.97

## Structure of Model

We have used the observed variables to construct a model based on Figure 1. For the established model, first, we have taken what level can be compared between high school student population and college student population into account. Then we examined the structure of relationship between constructed variables. The simultaneous multiple group analysis for the following three models was conducted.

Model 0, all parameters between high school student group and college student group are nonconstrained.

Model 1, parameters or path coefficients of endogenous variables (emotional variables) are constrained to be equal for both groups.

Model 2, in addition to the condition of model 1, path coefficients of 4 observed variables (cognitive variables) are constrained to be equal across the groups.

Model 0 is no constrained model. It assumed that all path coefficients differ across the groups. Model 1 is a model which represents parameters (path coefficients) of latent variables which are invariant across the groups. Model 2 is a model that hypothesized all paths would be equal across high school and college student group. If this model is accepted, it will ensure that the same concepts are measured for both groups, namely the relational structures of both groups are the same.

## Testing of Model

### Model comparison based on fit indices.

Main data-model fit indices for each model is shown in Table 3. GFI and AGFI showed a value greater than 0.9, and the value of model 0 is 1.00 which was found to be a saturated model. For RMSEA, we obtained 0.00 for all models. From these results, data-model fit indices of all models are also not too bad. In addition, a parameter AIC was used to compare multiple models under condition that the lower value representing the better fit. The parameter points out that model 2 showed the lowest value.

Table 3

### *Goodness-of-Fit Indices of Three Models (N = 615)*

Model	<i>df</i>	$\chi^2$	GFI	AGFI	RMSEA	AIC
Model 0	0	0	1.00			144
Model 1	3	1.53	0.99	0.99	0.00	139.53
Model 2	19	15.48	0.99	0.98	0.00	121.48

*Note.* GFI = goodness-of-fit index; AGFI = adjusted goodness-of-fit index;

AIC = Akaike information criterion; RMSEA = root mean square error of approximation.



### Comparing models based on testing for the equality constraints.

Testing for model 1 and model 2 under model 0, the chi-square difference statistics did not reveal a significant difference under model 0. Also, testing for model 2 under model 1, the chi-square difference statistic did not reveal a significant difference.

It was determined that the findings of data-model fit indices and testing for equality constraints, the model 2 was adopted. If the model 2 is accepted, the value of impacted parameters would not be different across the groups. Therefore, we can consider the fact that each item of observed variables is valid, and the constructed invariance in high school and college population is assumed to be the same.

Based on the model 2, we have conducted parameter estimation for high school and university students by using a maximum likelihood function. These results are shown in Table 4, Table 5 and the direct effect, indirect effect, and total effect are shown in Table 6.

Table 4

#### *Maximum Likelihood Parameter Estimates of the Standardized Path Coefficients*

Path			Estimate value	
			High school	Undergraduate
Desirability	→	Positive	.13**	.11**
Desirability	→	Appreciate	.05	.04
Desirability	→	Debt	-.09*	-.08*
Obligation	→	Positive	-.01	-.01
Obligation	→	Appreciate	.02	.02
Obligation	→	Debt	-.02	-.02
Gain	→	Positive	.04	.04
Gain	→	Appreciate	.09*	.08*
Gain	→	Debt	-.05	-.05
Cost	→	Positive	.14***	.15***
Cost	→	Appreciate	.30***	.31***
Cost	→	Debt	.46***	.51***
Positive	→	Prosocial	-.02	-.02
Appreciate	→	Prosocial	.32***	.29***
Debt	→	Prosocial	.05	.05
Desirability	→	Prosocial	.11*	.08*
Obligation	→	Prosocial	.05	.04
Gain	→	Prosocial	.21***	.18***
Cost	→	Prosocial	.20***	.18***

Note. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Table 5

*Correlations of Exogenous Factor*

Correlations			High school	Undergraduate
Desirability	↔	Obligation	.46***	.42***
Obligation	↔	Gain	-.00	.07
Gain	↔	Cost	.13**	.09
Desirability	↔	Gain	.22***	.30***
Obligation	↔	Cost	.14**	.05
Desirability	↔	Cost	.11*	.16*

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Table 6

*Decomposition of Direct and Indirect Effects for Situational Variables and the Three Feelings of Gratitude*

Causal variable		Endogenous variable							
		High school				Undergraduate			
		Positive	Appre ciate	Debt	Pro social	Positive	Appre ciate	Debt	Pro social
Desirability	Direct	.13**	.05	-.09*	.11*	.11**	.04	-.08*	.08*
	Indirect				.01				.01
	Total	.13	.05	-.09	.12	.11	.04	-.08	.08
Obligation	Direct	-.01	.02	-.02	.05	-.01	.02	-.02	.04
	Indirect				.01				.01
	Total	-.01	.02	-.02	.01	-.01	.02	-.02	.04
Gain	Direct	.04	.09*	-.05	.21***	.04	.08*	-.05	.18***
	Indirect				.02				.02
	Total	.04	.09	-.05	.23	.04	.08	-.05	.20
Cost	Direct	.14***	.30***	.46***	.20***	.15***	.31***	.51***	.18***
	Indirect				.12				.11
	Total	.14	.30	.46	.32	.15	.31	.51	.29
Positive	Direct				-.02				-.02
Appreciate	Direct				.32***				.28***
Debt	Direct				.05				.05

Note. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

The structural models of the relationship between variables of each group are shown in Figure 2 and Figure 3.

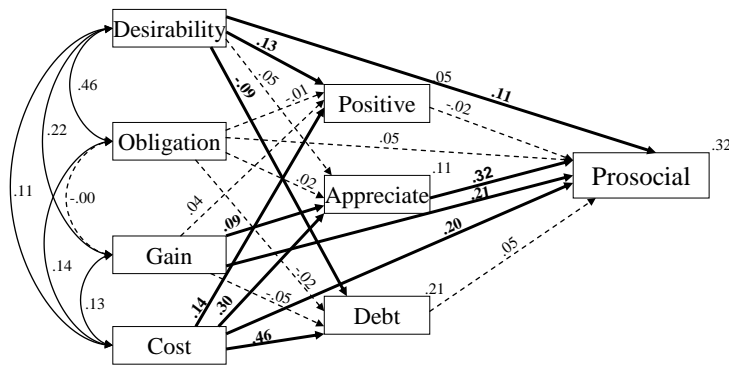


Figure 2. Standardized coefficients for model 2 of high school students ( $N = 414$ ). The bold arrow represents the significant parameters. The dotted arrow represents the insignificant parameters.

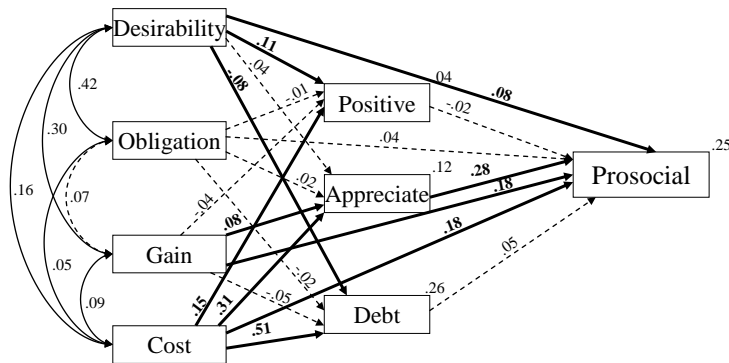


Figure 3. Standardized coefficients for model 2 of undergraduate students ( $N = 191$ ). The bold arrow represents the significant parameters. The dotted arrow represents the insignificant parameters.

### Relationship between the feelings of appreciativeness and the enhancement of prosocial motivation.

For both high school and college students, a path from feelings of appreciativeness to prosocial motivation becomes significant (0.32, 0.28,  $ps < .001$ ). Nevertheless the path from positive feelings to prosocial motivation and the path from feelings of indebtedness to prosocial motivation were not significant. These findings also showed that in high school and college students, feelings of appreciativeness in gratitude is a unique feeling in correlation to the enhancement of prosocial motivation. The results proved consistent with hypothesis 1.

### **Relationship between the cost of benefactor and the enhancement of prosocial motivation.**

For both high school and college students, the path from cost of benefactor to feelings of appreciativeness becomes statistically significant (0.30, 0.31,  $ps < .001$ ). In addition, the results of path from the cost of benefactor to the prosocial motivation were significant (0.20, 0.18,  $ps < .001$ ). The cost of benefactor had an indirect effect on prosocial motivation (0.12) in high school group and (0.11) in undergraduate group. These findings revealed that cognition of cost of benefactor positively related to enhancement of prosocial motivation directly and through mediating effort of feelings of appreciativeness.

### **Relationship between the gains for recipient and the enhancement of prosocial motivation.**

For both groups, high school and college students, the path from gains of recipient to feelings of appreciativeness are significant (0.09, 0.08,  $ps < .05$ ). On the other hand, the direct path from the gains of recipient to the prosocial motivation was also significant (0.21, 0.18,  $ps < .001$ ), and the gains of recipient had an indirect effect on the prosocial motivation (0.02) in both groups. Accordingly, gains for recipient were positively associated with enhancement of prosocial motivation via feelings of appreciativeness, and also have the relationship without mediation.

These results indicated that the feelings of appreciativeness and perception on the cost of a benefactor and the gains of a recipient had strong effects on the enhancement of prosocial motivation. Furthermore, the percentage of variance explained for the enhancement of prosocial motivation was 0.32 for the high school group, and was 0.25 for the undergraduate group. The amount of variance associated with gratitude contributes to prosocial motivation, 0.32 or 32% in high school students and 0.25 or 25% in undergraduate students, indicated strong relationships between the variable constructs and their factors. This also demonstrated greater explanatory power of these factors in predicting the enhancement of prosocial motivation.

### **Effect of the Relationship between the Receiver and the Benefactor in Each Group**

We examined whether the relationship between the benefactor and the recipient had an influence on feelings of appreciativeness, and enhancement of prosocial motivation in each group. The one-way ANOVA of the 4 relationships was conducted using feelings of appreciativeness and enhancement of prosocial motivation as dependent variables in separate group. The factor, relation to benefactor was a within-subject factor across three stories, and the other factors were between-subject factors. Means and standard deviations of feeling of appreciativeness and enhancement of prosocial motivation in each group have shown in Table 7.

Table 7

*Means, Standard Deviations of Feelings of Appreciativeness and Enhancement of Prosocial Motivation for Four Relationship between the Benefactor and the Recipient*

Variable	Group	Father		Mother		Teacher		Friend	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Appreciate	High	42.77	3.68	41.80	5.46	41.86	3.69	39.57	3.55
	Under	41.22	3.70	41.48	4.27	41.36	3.53	38.04	5.15
Prosocial	High	223.50	16.07	222.14	16.60	206.67	23.24	210.29	19.39
	Under	213.40	25.47	217.56	20.50	203.09	25.47	200.75	24.20

The results of the ANOVA with feeling of appreciativeness as a dependent variable indicated that the relationship to benefactor had a significant main effect on high school group,  $F(3, 410) = 12.01, p < .001$ , and college group,  $F(3, 187) = 7.42, p < .001$ .

An analysis of multiple comparison revealed that high school students reported feeling of appreciativeness to the benefactor in the order of father, teacher, mother and friend. The difference between father and friend, mother and friend and teacher and friend showed the adjacent means that were significantly different at  $p < .001$  using Tukey adjustment. Similarly, undergraduate student group reported feeling of appreciativeness in the order of mother, teacher, father and friend. The difference between mother and friend and teacher and friend showed that the adjacent means were significantly different at  $p < .001$ , and the difference between father and friend were significant at  $p < .01$  using Tukey adjustment.

In addition, the results of the ANOVA with enhancement of prosocial motivation as a dependent variable indicated that the relationship to benefactor had a significant effect in both high school group,  $F(3, 410) = 20.15, p < .001$ , and college group,  $F(3, 187) = 5.47, p < .001$ .

High school students reported the increased prosocial motivation in the order of father, mother, friend and teacher. The difference of father and friend, father and teacher, mother and friend and mother and teacher were significantly different at  $p < .001$  by Tukey adjustment. The result from undergraduate student group reported the increased prosocial motivation in the order of mother, father, teacher and friend. The difference between mother and friend was significantly difference at  $p < .01$ , the difference between mother and between teacher and father and friend were significantly at  $p < .05$  by Tukey adjustment.

## Discussion

Our findings demonstrate that when both Thai high school and undergraduate students received a favor, they reported a feeling of appreciativeness, indebtedness and general positive feelings. Then, we investigated relationships between the three feelings of gratitude and four variables of cognition towards gratitude situation and enhancement of prosocial motivation. The results showed that the models of relationships among these variables are similar in high school and undergraduate students. In both samples, feelings of appreciativeness positively correlated to enhancement of prosocial motivation. The results

support the hypothesis that feelings of appreciativeness play a main role in encouragement prosocial behavior in Thai youth. In addition, in both groups perception of cost of benefactor and gain of recipient positively related to feelings of appreciativeness, but desirability of act and obligation of benefactor insignificantly related to feelings of appreciativeness. These results partially support hypothesis about cognitive factors that can affect feelings of gratitude. Our findings are consistent with the previous study focusing on the effect of costs and benefits in determining the intensity of gratitude (Tesser et al., 1968; Trivers, 1971).

Unexpected finding, demonstrated that the perception on cost of benefactor, gain of recipient, and desirability of act also directly effects the enhancement of prosocial motivation. For this result, it is plausible in gratitude situation such as cognition about social norm or social custom also could prompt people to behave prosocial behavior. For example, when people received costly help and valuable benefits, they should reciprocate help in the same way.

We also examined the effect of relationship between recipient and benefactor on three feelings of gratitude and enhancement of prosocial motivation in each sample. The findings reveal that both high school and undergraduate students reported more feelings of appreciativeness in case that father, mother and teacher, rather than friend, provided help. In addition, they reported more enhancement of prosocial motivation in case that mother and father, rather than teacher and friend, provided help. This finding was contrary to the previous research concerning the effect of relationship on gratitude (Bar-Tal et al., 1977). This result presumably was caused by people who appear to feel more grateful when they received a favor from a benefactor who is social superior such as parents or teachers, than a favor rendered by a person of similar social status (Hegtvedt, 1990). Also, the characteristic of gratitude be operated in this study that described feelings of appreciativeness was linked with the concept of respect. Thus, Thai students feel more appreciated with their parents and teachers, than friends who hold equal social status. These characteristics of gratitude in Thai adolescents were consistent with the concept of gratitude by Kant (2012). According to Kant (2012), gratitude consists of the feeling of respect for the benefactor. Gratitude is a duty which cannot rid oneself of the obligation for repayment a kindness received. A grateful disposition of this kind is called appreciativeness. In addition, the finding that students reported more prosocial motivation in father and mother than friend might be assumed that feelings of appreciativeness, which based on respectfulness significantly, enhance prosocial motivation. However, the certain evidence for this assumption is still insufficient.

Our findings have implications for positive psychological studies concerning the promotion of positive development and psychology in youth. This study suggests psychological process by which gratitude enhances prosocial motivation in adolescent. The findings about increasing prosocial motivation in the case of parents provided help highlighting the importance of gratitude toward parents in promoting prosocial behavior in youth.

There are certain limitations in this study. First, this study was limited to Thai high school and undergraduate students. Therefore, the generalizability of findings from our study to other culture is questionable. Second, the data were gathered by using the questionnaire which used the scenario and self-reported methodology. The use of scenarios and self-reported methodology introduces limitations (Tsang, 2006). Third, the present study is limited

to gratitude for specific behavior and some social relationships.

In summary, the present study indicated that gratitude is a compound emotion. In Thai adolescents, the feelings of appreciativeness uniquely motivated prosocial behavior and the feelings of appreciativeness were affected by perception about the cost to a benefactor and gains for a recipient. These findings also provided a comprehension about feelings of appreciativeness linked with respect might strengthen potential gratitude to promote prosocial behavior. Even though there was a short of adequate evidence to support this agreement, these findings had implications for the current gratitude scenario studies and research-based intervention for promoting gratitude in youth.

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