

# Validation of the Thai Version of the Marital Commitment Scale (MCS)

Pornsawan Tanchotsrinon<sup>1</sup> and Kakanang Maneesri<sup>2</sup>

## Abstract

*The Marital Commitment Scale (MCS) developed by Johnson, Caughlin, and Huston (1999) is a widely-used instrument for assessing relationship commitment in a population. Although this scale has been used in the United States, there has been no study on its applicability in Asia. Therefore, this study developed a Thai version of the MCS (MCS-Thai) and recruited 394 adults in Thailand as sample. The validity and reliability of the MCS-Thai were examined and found to be compatible with the original version. The results of Confirmatory Factor Analysis indicated that three-factor structure (personal, moral, and structural commitment) to study relationship commitment was compatible with the conceptualization of marital commitment in the US and Thailand. However, the homogeneity of the sample (married individuals) limits the generalizability of these findings.*

## Keywords

*Construct validity; marital commitment; scale development; Thailand*

## Introduction

Commitment is important for the stability of a marital relationship (Adam & Jone, 1999). Of late, researchers have been interested in commitment scales and the construct of commitment. Rusbult (1980, 1983), based on the interdependence theory, developed an investment model for measuring relationship commitment consisting of relationship satisfaction, investment size, and quality of alternatives. Many studies (e.g. Impett, Beals, & Peplau, 2001; Le & Agnew, 2003; Rusbult, Martz, & Agnew, 1998) have used an investment model to measure relationship commitment. Johnson (1982) for example, developed a commitment framework that included three commitment types (personal, moral, and structural). Each type has specific causes and different behavioral, cognitive, and emotional consequences (Johnson et al., 1999). Stanley and Markman (1992) on the other hand developed a commitment inventory that consisted of personal dedication and constraint commitment. Owen, Rhoades, Stanley, and Markman (2011) had refined the commitment inventory though they retained its two constructs for the inventory; the two constructs have six constraint subscales (concern for partner welfare, financial alternatives, termination procedures, social pressure, structural investments, and availability of other partners) and one dedication subscale.

---

<sup>1</sup> Faculty of Psychology, Chulalongkorn University, Thailand E-mail: ptanchotsrinon@gmail.com

<sup>2</sup> Faculty of Psychology, Chulalongkorn University, Thailand E-mail: kakanang.m@chula.ac.th

As there are various constructs of commitment, the challenge for this research is to operationalize and differentiate them from other influencing concepts. It is possible for commitment to be a multidimensional construct (Adam & Jones, 1997; Johnson et al., 1999) rather than a unidimensional one (Rusbult, 1980, 1983). In addition to exploring a scale that would be culturally suitable for both the Asian culture (a collectivist culture) and a specific sample (married people). Johnson et al. (1999) proposed a moral commitment scale which is culturally suitable to study commitment among married people in Thailand and Thais who have a strong faith in Buddhism.

### **Johnson's Model of Commitment**

Johnson et al. (1999) proposed marital commitment as a multi-dimensional concept. This measurement divided commitment into three components: personal, moral, and structural. *Personal commitment* refers to the feeling of staying in a relationship. It relates to an individual's attitudes toward love, marital satisfaction, and couple identity. *Moral commitment* refers to the feeling of moral obligation. It is an individual's attitudes toward divorce, partner contract, and consistency values. *Structural commitment* refers to the feeling of constraint. It is about an individual's attitudes toward alternatives, social pressure, termination procedures, and investment. The Marital Commitment Scale (Johnson et al., 1999) measures relationship commitment as an internal resource (personal commitment and moral commitment) as well as an external resource (structural commitment) for the individual to leave the relationship.

### **Measuring marital commitment in Thailand**

In Thailand, there were two measurements for relationship commitment: investment model, and Revised Commitment Inventory which are discussed below.

Suthasinee (2010) translated the investment model of Rusbult (1983) into Thai. This scale consisted of three constructs: satisfaction, alternative quality, and investment. The response format for the items consisted of a 5-point Likert scale ranging from 1 (totally disagreed) to 5 (totally agreed). The validated subscales demonstrated good internal consistency, with Cronbach's alphas ranging from .73-.85. The Cronbach's alpha coefficient for the overall scale was .88.

Kusuma (2013) translated the Revised Commitment Inventory of Owen et al. (2011) into Thai. This scale consisted of two constructs: constraint commitment and dedication commitment. The response format for the items consisted of a 5-point Likert scale ranging from 1 (totally disagreed) to 5 (totally agreed). The validated subscales demonstrated good internal consistency. The Cronbach's alpha coefficient for the overall scale was .83.

### **Research objectives**

Since there is no study on marital commitment among Thais, this study adopted the Marital Commitment Scale (MCS) proposed by Johnson et al. (1999). It was no small feat to develop the MCS to be compatible with the Thais. For instance, Johnson's MCS was designed for assessing marital commitment among the general population in US but the current study focused on marital commitment among Thais people. Thus, the study factor differences between these two countries, including race, custom, and religion, in order to come up with a suitable scale for Thais. Therefore, the objectives of this study are to modify the marital commitment scale in order for it to be compatible with Thais and to test the construct validity of the marital commitment scale.

## Method

### Procedure

The criteria for selecting participants are people married for less than 10 years and had at least one child; that includes parents of school children. In Bangkok area, there are 37 elementary schools. The potential participants were parents of school children from Grade 1 to Grade 4. Probability sampling was used to enroll a representative sample of married people in Bangkok province. First, the 37 schools were divided by their size of the population. Second, five of the schools were randomly selected.

The participants were parents of school children and were recruited through the schools. An introductory letter was sent to 831 parents but only 418 (50.3%) of them participated in this study. Twenty-four participants were excluded because they failed to complete the survey and thus, the final sample size was 394 participants. Questionnaires were distributed to the participants in sealed packets. The 9-page questionnaire contained questions about demographics, and the participants' relationship attitude and behavior in their marital life. The survey was completed anonymously by all participants and data was collected during October 2014.

### Participants

The participants consisted of 273 females and 121 males ranging from 30 to 45 years of age. Their relationship status was: cohabiting (3.55%) and married (96.45%). The average year of marriage was 10.08. Participants were included only if they had children and they were highly educated, with 67.8 percent reporting having a bachelor's or higher degree. Most participants (52%) had a personal income between 15,001 and 50,000 Baht and 71.5% of them have a household income between 15,001 and 50,000 Baht. The most common religions were Buddhism (98.22%), Islam (1.02%) and Christianity (0.76%). More than 65 percent of the participants reported a moderate to high level of religious commitment.

### Preparation of the Thai version of Marital Commitment Scale

The Thai version of the Marital Commitment Scale of Johnson et al. (1999) was adapted from the English version. They were translated by a researcher who is fluent in both Thai and English in the area of social psychology and was also familiar with the concept of marital commitment. Five researchers who fluent in both Thai and English in social psychology revised the first translation of the scale and worked together to resolve translation difficulties via consensus. One external expert, who is familiar with research on relationship commitment in the field of psychological assessment, was invited to review the item contents. If any item did not fit the Thai culture, it was adjusted.

The details of similarity and dissimilarity between the original version of Johnson et al. (1999) and the Thai version are discussed below.

Johnson et al. (1999) developed the original 49 items which had two types of response format: a rating scale (41 items) and a semantic differential scale (8 items). This scale composed of three factors: personal, moral, and structural commitment. The two components of personal commitment were love and marital satisfaction, and couple identity. The three components of moral commitment were divorce attitude, partner contract, and consistency value. The four components of structural commitment were alternatives, social pressure, termination procedures, and investment.

The modified instrument (MCS-Thai) was structured into three dimensions based on Johnson et al.'s (1999) components: personal, moral, and structural commitment with some changes:

- (a) To avoid confusion of response format and to shorten the scale, the semantic differential marital satisfaction items (8 items) from the original version were deleted.
- (b) Some items use a 7-point format while others use a 9-point format. Thus, the scale of all components to a 7-point scale was adapted.
- (c) One item was introduced to solve problems related to cultural difference. The original version: you would be disappointed in yourself because you had broken a sacred vow was changed to you would be disappointed in yourself because you had broken a promise. This is mainly because most Thais are Buddhists and are not familiar with a sacred vow in Christianity.

The Thai version of the Marital Commitment Scale contained 41 items to which the participants responded on a 7-point scale ranging from strongly disagree (1) to strongly agree (7).

Personal commitments included 6 items that were related to love and marital satisfaction, and couple identity. A sample item is *"Being married helps you feel good about yourself."*

Moral commitments included 13 items on divorce attitudes, partner contract, and consistency values. One sample item was: *"You would feel bad about getting a divorce because you promised your partner you would stay with him/her forever."*

Finally, structural commitment included 22 items were related to alternatives, social pressure, termination procedures, and investment, for example, *"If you and your partner were to break up, you would miss important income, insurance, or other property"*.

Higher scores in personal commitment indicate greater personal affection. Higher scores in moral commitment reflect stronger moral beliefs. Higher scores in structural commitment represent more structural constraints. The demographic questions included gender, income, religion, and relationship duration.

## Research Hypotheses

Based on the objective of this research, a confirmatory factor analysis was carried out in order to identify the construct validity of marital commitment. Two hypotheses followed from this: (1) to validate the three-factor structure of marital commitment model; (2) to examine factor loading on their predicted factor.

## Results

### Item analysis, reliability, and correlation between components

The samples were used to estimate item discrimination using item-total correlation. Items with more than a 0.2 item total correlation and a statistical significance of .05 were chosen to ensure their validity. All 33 items passed this criterion. Cronbach's alpha coefficient was calculated to ensure the reliability of the scale. The 33-items version had a high reliability coefficient (.92) and the reliability coefficients ranged from .85 to .91. The discriminant validity of the scale was supported given that none of the factor correlations included 1.00. Personal commitment was correlated more strongly with moral commitment ( $r = .62$ ) than with

structural commitment ( $r = .31$ ). Moral commitment was positively associated with structural commitment ( $r = .51$ ).

As shown in Table 1, the participants reported a moderate to high level of personal commitment and moral commitment ( $M = 5.15$  to  $5.85$ ,  $SD = 0.96$  to  $1.02$ ). They also reported a moderate level of structural commitment ( $M = 4.37$ ,  $SD = 1.25$ ).

**Table 1:** Means, standard deviations, latent correlations, and coefficient alphas for the factors on the Marital Commitment Scale (MCS-Thai)

Factor	M	SD	1	2	3
1. Personal commitment	5.85	0.96	(.88)		
2. Moral commitment	5.15	1.02	0.62**	(.85)	
3. Structural commitment	4.37	1.25	0.31**	0.51**	(.91)

Note. Reliability coefficient alphas are presented in parentheses along the diagonal.

\*\*  $p < .01$

The association among components of the Marital Commitment Scale (MCS-Thai) was examined using Pearson correlation (Table 2). All the components were significantly correlated with each other (correlations ranged from .15 to .67). The highest correlation was termination procedures and investment. The participants reported high levels of marital satisfaction ( $M=6.01$ ,  $SD=1.09$ ).

**Table 2:** Means, standard deviations, intercorrelations, and coefficient alphas for the components of the Marital Commitment Scale (MCS-Thai)

Component	M	SD	1	2	3	4	5	6	7	8	9
1. Love and marital satisfaction	6.01	1.09	(.87)								
2. Couple's identity	5.70	1.05	0.63**	(.83)							
3. Divorce attitude	4.80	1.36	0.38**	0.47**	(.60)						
4. Partner contract	4.92	1.43	0.48**	0.50**	0.63**	(.81)					
5. Consistency values	5.66	0.97	0.36**	0.55**	0.39**	0.45**	(.81)				
6. Alternatives	4.49	1.37	0.21**	0.27**	0.38**	0.40**	0.22**	(.74)			
7. Social pressure	4.48	1.44	0.21**	0.34**	0.44**	0.50**	0.29**	0.52**	(.79)		
8. Termination procedures	4.20	1.70	0.15**	0.21**	0.33**	0.35**	0.17**	0.49**	0.59**	(.88)	
9. Investment	4.31	1.61	0.23**	0.25**	0.36**	0.40**	0.19**	0.46**	0.59**	0.67**	(.82)

Note. Reliability coefficient is presented in parentheses along the diagonal.

\*\*  $p < .01$

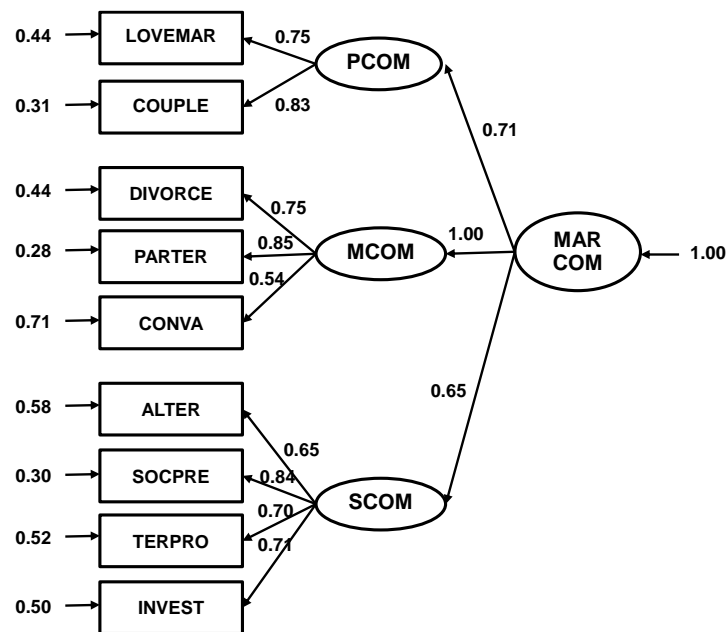
## Confirmatory Factor Analysis

The Marital Commitment Scale (MCS-Thai) represents a higher order latent factor comprising three factors: personal commitment, moral commitment, and structural commitment. Confirmatory factor analysis was performed to ensure the validity of the scale. The 33-items version of the final Marital Commitment Scale was used to analyze the factor analyses. The CFA model hypothesized a three-factor structure model that responses could be explained by three first-order factors (personal, moral, structural commitment), and one second-order factor (marital commitment).

The second-order CFA model, using LISREL 8.72 with maximum-likelihood estimation was used. Data analysis using Structural Equation Modeling (SEM) moderated correlations between the factors because it was reasonable to consider that some factors might be correlated with others. A structural model was used in which nine components (observed

variable) served as indicators of personal, moral, and structural commitment (latent variable, first-order factor) and three latent variables served as indicators of marital commitment (latent variable, second-order factor). All of the components were loaded on each first-order factor, suggesting that marital commitment constructs are multidimensional. All of the factor loadings exceeded the 0.50 level.

In line with expectations, this second-order CFA model fit the data well ( $\chi^2_{(21)} = 25.17, p = 0.23$ ,  $\chi^2 / df = 1.19$ , Comparative fit index [CFI] = 0.99, Goodness of fit index [GFI] = 0.98, Adjusted goodness of fit index [AGFI] = 0.97, Root mean square residual [RMR] = 0.030, Root mean square error of approximation [RMSEA] = 0.02). A diagrammatic representation of this second-order model is presented in Figure 1.



**Figure 1:** The second-order model of factorial structure for the Marital Commitment Scale (MCS-Thai)

The first-order CFA model using SPSS Version 17 software was used. The factor loadings for each of first-order component are reported in Table 3 to 5. The factor analysis revealed that the two-factor of personal commitment was a good fit. The two factors accounted for 78.43% of the variance (see Table 3). The factor analysis also revealed that the three-factor of moral commitment was a good fit and the three factors accounted for 64.80% of the variance (see Table 4). Finally, the factor analysis revealed that the four-factor of structural commitment was a good fit and the four factors accounted for 66.46% of the variance (see Table 5).

**Table 3:** Factor loading for the components of personal commitment

Personal commitment item	Factor 1	Factor 2
How much do you love your partner at this stage?	0.89	
How satisfied have you been with your marriage over the past two months?	0.82	
How much do you need your partner at this stage?	0.82	
Being married helps you feel good about yourself		0.86
You really like being a husband / wife		0.84
You would miss the sense of being a couple		0.74

*Note.* Factor 1 = Love and marital satisfaction, Factor 2 = Couple identity

**Table 4:** Factor loading for the components of moral commitment

Moral commitment item	Factor 1	Factor 2	Factor 3
You would be disappointed in yourself because you had broken a promise	0.91		
When you agree to get married, you are morally bound to stay married	0.71		
Getting a divorce violates your religious beliefs	0.54		
You would feel bad about getting a divorce because you promised your spouse you would stay with him/her forever		0.86	
You could never leave your spouse because s/he needs you too much		0.80	
You could never leave your spouse because you would feel guilty about letting him/her down		0.66	
It would be difficult to tell your spouse that you wanted to divorce.		0.58	
You feel that you should finish what you start			0.87
It's important to stand by what you believe in			0.80
Whenever you promise to do something, you should see it through			0.76
Even when things get hard, you should do the things you have promised to do			0.67

*Note.* Factor 1 = Divorce attitude, Factor 2 = Partner contract, Factor 3 = Consistency values

**Table 5:** Factor loading for the components of structural commitment

Structural commitment item	Factor 1	Factor 2	Factor 3	Factor 4
You would miss just having somebody around	0.78			
You would miss living in your house	0.75			
You would miss important income, insurance, or other property	0.65			
You would miss the help you get around the house from having a partner	0.57			
You would be upset because your family would be uncomfortable with your breaking up		0.82		
You would be upset because your in-laws would be uncomfortable with your breaking up		0.72		
You would be upset because you would lose your place or standing in the community		0.63		
You would be upset because you would lose some respect from friends		0.53		
Having to move your things would be a burden			0.83	
It would be hard for you to find a new place to live			0.81	
Dealing with the legal system would be difficult			0.78	
It would be awfully difficult to do the things necessary to get a divorce			0.67	

**Table 5 (continued)**

<b>Structural commitment item</b>	<b>Factor 1</b>	<b>Factor 2</b>	<b>Factor 3</b>	<b>Factor 4</b>
You would feel like you'd wasted the best years of your life				0.75
You would feel like all the effort you'd put into keeping the two of you together had been wasted				0.72
You would lose all the time you had put into the marriage				0.63
You would lose the money you'd put into the marriage				0.55

*Note.* Factor 1 = Alternatives, Factor 2 = Social pressure, Factor 3 = Termination procedures, Factor 4 = Investment

## Discussion

This study used the test of construct validity for marital commitment in Thailand. To accomplish this goal, the Marital Commitment Scale and the Confirmatory Factor Analysis (CFA) model of Johnson et al. (1999) was adopted and adapted to be compatible with Thais, and subsequently validated this marital commitment scale by using second-order factor analysis. The second-order factor analysis is a statistical method that can confirm the theorized construct of scales; thus, measuring the effect of the main construct on its sub-constructs. In other words, the main construct was a second-order factor and the sub-constructs were first-order factors.

In terms of construct validity, the applicability of The Marital Commitment Scale in the Thai setting was supported. The findings of this study support the hypothesis, suggesting that marital commitment can be explained by three first-order factors (personal, moral, structural commitment), and one second-order factor (marital commitment). The second-order model demonstrated acceptable fit. In terms of factor loading analysis, all indicators loaded on a single factor with coefficients exceeding .50. The first-order factor loadings were also highly significant. Tables 3 to 5 show that factor loading for the three components of the marital commitment scale ranged from .53 to .91. The results provided psychometric evidence that different dimensions of marital commitment are distinct from each other.

In validating the commitment framework, the results showed that each of the types of commitment is correlated with its components. The finding heavily favored personal commitment, and less strong moral and structural commitment. The personal commitment was predicated on love, marital satisfaction, and couple's identity. Moral commitment was moderately related to divorce attitude, partner contract, and consistency value. Structure was highly correlated with investment, one of the components of structural commitment. This study showed that personal commitment had a stronger relationship with moral commitment than with structural commitment. As a result, this finding is in agreement with the theory of Johnson et al. (1999) that personal and moral commitment are a function of attitudes and values, whereas structural commitment is a function of perception.

The present study showed that the result of the reliability measure was high ( $\alpha = 0.92$ ). The three factors fitted Johnson et al. (1999) proposed three-factor structure: personal commitment (6 items;  $\alpha = 0.88$ ), moral commitment (11 items;  $\alpha = 0.85$ ), and structural commitment (16 items,  $\alpha = 0.91$ ) factors. This indicates high internal consistency.

A measure of marital commitment that is a multidimensional construct and takes into account different components of this complex construct could offer psychologist the opportunity to make more accurate prediction (Stanley & Markman, 1992). As Johnson et al. (1999) suggested, marital commitment scale is a viable instrument for this purpose because of its capacity to measure distinct aspects of the marital commitment. This finding is also consistent with



results from previous studies that focused on non-Thais, indicating that marital commitment in Thailand is also being compromised.

## Implications

By making available a validated Thai version of the Marital Commitment Scale (MCS), this study inspires other researchers to investigate marital relationship further. Although the factor structure of scores on the Marital Commitment Scale can be deemed adequate with this adult population, the homogeneity of the sample used in this study certainly places limits in terms of generalizability of the findings. Further confirmatory research with other adult age groups and other populations is needed.

In conclusion, the MCS-Thai showed adequate psychometric properties (i.e. factorial validity, internal reliability), and the findings were generally consistent with the marital commitment framework (Johnson et al., 1999). It is hoped that this research will assist future research on marital commitment using the MCS-Thai as a measurement and as well as the Investment Model Scale and the Revised Commitment Inventory.

## Acknowledgement

We would like to express our gratitude to Chulalongkorn University for its financial support via THE 90<sup>th</sup> ANNIVERSARY OF CHULALONGKORN UNIVERSITY FUND (Ratchadaphiseksomphot Endowment Fund).

This paper is part of a dissertation entitled, “The moderating effect of marital duration and mediating effects of maintenance motivation and behavior on relationship between narcissism and marital commitment” (unpublished doctoral dissertation), Chulalongkorn University, Bangkok, Thailand.

## References

- Adams, J., & Jones, W. (1997). The conceptualization of marital commitment: An integrative analysis. *Journal of Personality and Social Psychology*, 72, 1177-1196. doi: [www.doi.org/10.1037/0022-3514.72.5.1177](https://doi.org/10.1037/0022-3514.72.5.1177)
- Cate, R.M., Levin, L.A., & Richmond, L.S. (2002). Premarital relationship stability: A review of recent research. *Journal of Social and Personal Relationships*, 19, 261-284. doi: [10.1177/0192513X06289215](https://doi.org/10.1177/0192513X06289215)
- Glenn, N.D. (2005). With this ring... A national survey on marriage in America. *National Fatherhood Initiative*, 22-23.
- Impett, E.A., Beals, K.P., & Peplau, L.A. (2001). Testing the investment model of relationship commitment and stability in a longitudinal study of married couples. *Current psychology*, 20, 312-326. doi: [10.1007/s12144-001-1014-3](https://doi.org/10.1007/s12144-001-1014-3)
- Jaismith, S. (2010). Effects of narcissism, ludic love style, and communal activation on relationship commitment. (Unpublished master dissertation). Chulalongkorn University, Bangkok, Thailand.
- Johnson, M.P. (1982). The social and cognitive features of the dissolution of commitment to relationships. In S. Duck (Ed.), *Personal relationships: Dissolving personal relationships* (pp. 51-73). New York: Academic Press.
- Johnson, M.P., Caughlin, J.P., & Huston, T.L. (1999). The tripartite nature of marital commitment: Personal, moral, and structural reasons to stay married. *Journal of Marriage and Family*, 6, 160-177. doi: [10.2307/353891](https://doi.org/10.2307/353891)
- Kanjanaprakit, K. (2013). Effects of optimism on relationship satisfaction and commitment: The mediating role of positive illusions. (Unpublished master dissertation). Chulalongkorn University, Bangkok, Thailand.

- Kelley, H.H., & Thibaut, J.W. (1978). *Interpersonal relations: A theory of interdependence*. New York: Wiley.
- Le, B., & Agnew, C. (2003). Commitments and its theorized determinants: A meta-analysis of investment model. *Personal Relationship*, 10, 37-57. doi: 10.1111/1475-6811.00035
- Lund, M. (1985). The development of investment and commitment scales for predicting continuity of personal relationships. *Journal of Social and Personal Relationships*, 2, 3-23. doi: 10.1177/0265407585021001
- Ogolsky, B.G., & Bowers, J.R. (2013). A meta-analytic review of relationship maintenance and its correlates. *Journal of Social and Personal Relationships*, 30, 343- 367. doi: 10.1177/0265407512463338
- Owen, J., Rhoades, G.K., Stanley, S.M., & Markman, H.J. (2011). The revised commitment inventory: Psychometrics and use with unmarried couples. *Journal of Family Issues*, 32, 820-841.
- Ramirez, A. (2008). An examination of the tripartite approach to commitment: An actor-partner interdependence model analysis of the effect of relationship maintenance behavior. *Journal of Social and Personal Relationships*, 25, 943–965. doi:10.1177/0265407508100309
- Rusbult, C.E. (1980). Commitment and satisfaction in romantic associations: A test of the investment model. *Journal of Experimental Social Psychology*, 16, 172-186. doi: 10.1016/0022-1031(80)90007-4
- Rusbult, C.E. (1983). A longitudinal test of the investment model: The development (and deterioration) of satisfaction and commitment in heterosexual involvements. *Journal of Personality and Social Psychology*, 45, 101-107. doi: doi.org/10.1037/0022-3514.45.1.101
- Rusbult, C.E., Martz, J.M., & Agnew, C.R. (1998). The investment model scale: Measuring commitment level, satisfaction level, quality of alternatives, and investment size. *Personal Relationships*, 5, 357–391. doi: 10.1111/j.1475-6811.1998.tb00177.x
- Stanley, S.M., & Markman, H.J. (1992). Assessing commitment in personal relationships. *Journal of Marriage and the Family*, 54, 595-608. doi: 10.2307/353245
- Tanchotsrinon, P. (2016). The moderating effect of marital duration and mediating effects of maintenance motivation and behavior on relationship between narcissism and marital commitment. (Unpublished doctoral dissertation). Chulalongkorn University, Bangkok, Thailand.
- Wilcox, W.B., & Nock, S.L. (2006). What's love got to do with it? Equality, equity, commitment and women's marital quality. *Social Forces*, 84, 1321-1345. doi: 10.1353/sof.2006