Asian Social Science; Vol. 11, No. 22; 2015
ISSN 1911-2017 E-ISSN 1911-2025
Published by Canadian Center of Science and Education

Analysing the Validity of Union Commitment Scale Using Confirmatory Factor Analysis with Malaysian Samples

Balasubramaniam A. Tarumaraja[1], Fatimah Omar[1], Fatimah Wati Halim[1] & Sarah Waheeda Muhammad Hafidz[1]

[1] School of Psychology and Human Development, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia, UKM Bangi, Selangor, Malaysia

Correspondence: Balasubramaniam A. Tarumaraja, School of Psychology and Human Development, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia, 43600 UKM Bangi, Selangor, Malaysia. Tel: 60-16-208-7830. E-mail: balahrm@yahoo.com

Received: June 12, 2015 Accepted: July 30, 2015 Online Published: August 18, 2015

doi:10.5539/ass.v11n22p96 URL: http://dx.doi.org/10.5539/ass.v11n22p96

Abstract

This study was carried out to confirm the validity of the union commitment scale proposed by Bayazit in measuring union commitment among union officials. Union commitment was represented using three sub-constructs namely loyalty towards union (12 items), willingness to work for the union (4 items) and responsibility towards union (4 items). The scale was modified to cater for the respondents consisting of union officials and local environment. A total of 676 respondents' namely union officials from the states of Selangor and Federal Territory (Putrajaya and Kuala Lumpur), Malaysia who were involved as the research subjects had been selected using stratified random sampling technique. Confirmatory factor analysis (CFA) was conducted using the AMOS software version 21. Initially, the measurement model of union commitment had demonstrated poor-fit indices whilst the correlation between sub-constructs was shown to be high. However, after undergoing the goodness-of-fit, results for the fit indices for measurement model were found to have been improved. The evaluation on the validity and reliability has also been performed for the measurement model. The number of items remaining for modified measurement model was 13, with 7 items for loyalty towards union, 2 items for the willingness to work for the union and 4 items for responsibility towards the union. Therefore, this scale which had undergone the CFA process is valid as the measurement tool to assess the level of commitment among union officials.

Keywords: confirmatory factor analysis (CFA), goodness-of-fit, reliability, union commitment, validity

1. Introduction

Employees and employers have the right, and are free to set up and become the members of the trade union without any obstruction in Malaysia. This is consistent with the Malaysian Federal Constitution, Trade Union Act 1959, Employment Act 1955 and Industrial Relation Act 1967. The trade unions in Malaysia are also categorized as national unions and in-house unions for the private sector. Meanwhile, the unions in the public sector are categorized as the civil service, statutory bodies and local authorities (Aminuddin, 2009). However, the representation of members of trade unions in Malaysia was very low which only 914,677 were as 2013 (Department of Trade Union Affairs, 2015). This means that percentage of worforce is unionized below 10%. A total of 722 trade unions were registered in Malaysia until May 2015 with the total number of membership 933,501. The total number of unions under the private sector that were registered were 474 unions and under the pulic sector, there were 248 unions (Department of Trade Union Affairs, 2015).

Nevertheless, when trade unions have successfully been registered, union officials have shown low level of commitment towards the union. This is because various types of complaints were received by the authorities on these registered unions. The Department of Trade Union Affairs has also enlisted several complaints including protesting the election of union officials, union fraud and embezzlement, violation of union rules, power abuse by union officials, complaints on union administration and on the general meeting. As many as 56 cases of complaints were received by the department in 2011 (Department of Trade Union Affairs, 2011). Therefore, the study on the level of union commitment among union officials is very important to ensure that these complaints relate with low union commitment among union officials. However, there are no specific measurement tool that measures the union commitment among union officials in Malaysia. Additionally, empirical studies on the union

commitment only carried out by few researchers in Malaysia and they only involve union members as the respondents and confirmatory factor analysis has not been done on the union commitment construct (Johari & Ghazali, 2011; Johari, 2014).

Union commitment was the mainstay of the study by Gordon, Philpot, Burt, Thompson and Spiller (1980) who define the individual who seeks to stay as a union member and works to identify the union objectives as showing union commitment. Gordon and co-workers had formulated a union commitment scale containing four dimensions namely loyalty towards union, belief in union, willingness to work for union and responsibility towards union. The factor analysis run by Gordon et al. (1980) had confirmed those factors. Hence, according to Gordon et al. (1980), union commitment is a multi-dimensional construct that encompasses four dimensions and is measurable through 48 items.

However, Friedman and Harvey (1986) presented only two factors for union commitment compared to Gordon et al. (1980). Friedman and Harvey (1986) conducted the confirmatory factor analysis using 48 items presented by Gordon et al. (1980) and subsequently there was a suggestion that union commitment can be represented by only 20 items with two factors namely the union's attitude as well as the thoughts and intentions towards pro-union behaviour. According to Friedman and Harvey (1986), two factors of union commitment are characteristically more parsimonious and more appropriate to interpret the general model of both the attitude and behaviour.

Kelloway, Catano and Southwell (1992) established three dimensions of union commitment and they are loyalty towards union, responsibility towards union and willingness to work for the union. They came up with 13 items to measure those three dimensions and this particular number of items was supported through the construct validity analysis as well as dimensionality. Kelloway et al. (1992) had introduced those three dimensions as well as the number of items based on an analysis performed on 20 items as reported by Friedman dan Harvey (1986) and 30 items as reported by Gordon et al. (1980) using two samples that have different sizes (N = 229 and N = 551). Their study also established that both versions of the scale had almost identical structure of factors and the belief in union dimension was somewhat ambiguous since it makes use of a number of sentences carrying negative element. Three dimensions proposed by Kelloway et al. (1992), were also verified by Bayazit, Hammer and Wazeter (2004) via an analysis conducted using 20 items taken from Friedman and Harvey (1986). However, it is suggested that the questionnaire is to be used with a different concept when measuring the commitment level among union officials and to replace the negative items with positive items.

Therefore, this study aims to validate the union commitment scale among union officials by considering recommendations of Bayazit et al. (2004). This is because, based on our knowledge, there was yet to be a specific measurement tool currently available to measure the commitment among union officials towards their union.

2. Research Methodology

2.1 Sampling Method

Samples for this study were selected based on the union list provided by the Department of Trade Union Affairs. The states of Selangor and Federal Territory (Putrajaya and Kuala Lumpur) were singled out as our study locations since most registered unions are in these states and they represent 40% of unions in Malaysia. Besides that, all union categories required for the purpose of this study can be found in these two states, namely private unions (national unions and in-house unions) and public unions. Respondents in this study were union officials in the states of Selangor and Federal Territory (Putrajaya and Kuala Lumpur). This study emphasises on private unions (national unions and in-house unions) and public unions which comprise of only employees.

The list of union provided by the Department of Trade Union Affairs contains ample information on the category of union as well as the states where each union is located. Therefore, the first stage of this study was to sort the unions according to the state namely Selangor and Federal Territory (Putrajaya and Kuala Lumpur). Then, only employee unions were considered to determine the research population, while on the contrary, federation unions and employer unions were excluded from this study.

A two-stage sampling technique was adopted in this study. Firstly, the stratified random sampling technique was used since respondents were from various union categories namely private unions (national unions and in-house unions) and public unions. Thus, the first process was to segregate the unions according to their respective category. Once the unions were classified by category, a simple random sampling technique was conducted to select 156 unions that represented 44 public unions and 112 private unions (27 national unions and 85 in-house unions). The total sample selection by union category was proportional to the total population of union category in the states concerned. In the second stage, questionnaires were disseminated by the researchers to all union

officials from each union that participated and a total of 1,560 questionnaires were distributed. This is to make sure that there would be satisfactory return rate for the questionnaire. From 1,560 questionnaires distributed, 812 questionnaires were returned, altogether implying that there was 52% return rate. However, a total of 136 questionnaires with outliers had to be discarded to produce a normal distributed data that can be used for this study. Based on the normal distribution analysis, the number of respondents used to study the measurement model in this study totalled 676 people.

2.2 Research Instruments

The scale on union commitment presented by Bayazit et al. (2004) served to measure the union commitment construct which was modified from Friedman and Harvey (1986). This scale contains 3 dimensions namely loyalty towards union, willingness to work for the union and responsibility towards the union. It was modified, so that it is appropriate to the environment of local unions as well as to the union officials taking part in this study. Furthermore, in the original scale, the negative items had been modified into positive items as suggested by Bayazit et al. (2004). The modifications on questionnaire items were done with the help of 3 experienced union officials and 2 experienced officers from Department of Trade Union Affairs. The officers' help was required since they were able to identify the weaknesses or problems in the items which in turn, improved the questionnaire's validity and reliability (Churchill, 1995; Frazer & Lawley, 2000).

Item modifications were also based on various comments from respondents obtained in a pilot study. The pilot study employs the convenience sampling method. Two states involved in the pilot study are Pahang and Melaka. Questionnaires were distributed during the union management course held by the Department of Trade Union Affairs in both the states. The course was organized by the department to newly registered unions or for newly appointed union officials. The union category for both these states comprises of public sector unions and private sector unions (national unions and in-house unions).

The permission to distribute the questionnaires has been obtained from the department in advance. The total number of respondents who returned the questionnaires was 97 respondents, or specifically 66 respondents from Melaka and 31 respondents from Pahang. Respondents were briefed on how to fill in the questionnaires and they were informed that the information given would be confidential. As the respondents comprise of union officials, they understood the study objective and the background profile of the trade unions in Malaysia well. Nevertheless, these respondents will not be involved during the actual study in Selangor and the Federal Territory (Kuala Lumpur and Putrajaya).

Based on the comments and suggestions given by the respondents during the pilot study, several shortcomings and weaknesses have been well identified. The outcomes of these item modifications were demonstrated in Appendix. The item distribution for each loyalty towards union, willingness to work for the union and responsibility towards the union sub-construct is presented in Table 1.

Table 1. Number of positive and negative items that measure union commitment sub-construct

Sub-construct	Positive items	Negative Items	No. of Item
Loyalty towards union	1, 2,3,4,5,6,7,8,9,10,11,12	-	12
Willingness to work for the union	13,14,15,16,	-	4
Responsibility towards the union	17,18,19,20	-	4

Table 2. Score for the union commitment scale

Answer	Positive Marks
Strongly Disagree	1
Disagree	2
Undecided	3
Agree	4
Strongly Agree	5

The Likert scale of five point choices of answers was used for scoring the union commitment questionnaire. All items in the union commitment scale are positive. The respondents have to decide on a single choice answer for their response out of the five options available as sampled in Table 2.

The minimum and maximum scores were obtained according to the scale score. Minimum score was 20 (1 x 20) and maximum score 100 (5 x 20). These scores offered that the higher the union commitment score, the higher the commitment level among union officials.

2.3 Measurement Model

Measurement model was constructed to assess how the observed constructs (items) rely on the latent constructs (Hair, Black, Babin, Anderson, & Tatham, 2006). In other words, the measurement model was part of a model which expressed how constructs (items) depended on unobserved constructs or latent constructs (Arbuckle, 2005). To meet this purpose, the confirmatory factor analysis (CFA) was carried out using AMOS software version 21.0. Following Kline (2005), CFA is a statistical technique that ascertains whether the number of constructs and the item's loading values of the construct had fulfilled the expectations.

Under the condition that the model did not reach the recommended level, that is either in terms of the loadings values, fit indices or correlation between sub-constructs, the measurement model must be modified and re-analyzed (Anderson & Gerbing, 1988; Bollen, 1989; Hair et al., 2006; Kline, 2005; Tabachnick & Fidell, 2001). The measurement model is measured in two stages, firstly evaluating for the aspect of goodness-of-fit and secondly evaluating both the reliability and validity of each construct.

2.3.1 Goodness-of-fit Evaluation

Goodness-of-fit requirement was achieved through three stages, firstly when the loading values for each item for that particular latent constructs had attained the recommended level. According to Hair et al. (2006), loading values of 0.50 and above are accepted. The second stage is when the correlation values between the sub-constructs did not exceed 0.85 (Kline, 2005). The last stage is when all the fit indices for the measurement model reached the requirement level. In the Structural Equation Model (SEM), a number of fit indices illustrate to what extent the model corresponds to the data that have been derived. However, no agreement seemed to have been achieved among scholars on which one of the fit indices should be adopted. Hair et al. (1995, 1998, 2010) and Holmes-Smith, Coote and Cunningham (2006) suggested the use of at least one of the fit indices from each category of model fit. There are three categories for model fit namely absolute fit, incremental fit and parsimonious fit. Three absolute fit indices are as follows: (a) discrepancy Chi square (Chisq), (b) the root mean-square error of approximation; (RMSEA) and (c) goodness of fit index; (GFI). Incremental fit consists of (a) adjusted goodness-of-fit; (AGFI), (b) comparative fit index; (CFI), (c) tucker-lewis index (TLI) and (d) normed fit index (NFI). Lastly, parsimonious fit can be measured by dividing the chi square value with the degree of freedom (chisq/df).

If the measurement model did not adequately fit the research data after removing the items that possess low loading values, two examinations namely modification index and standardized residual covariance can be carried out (Joreskog & Sorbom, 1982; Hair, Anderson, Tatham, & Black, 1995; Schumacher & Lomax, 1996; Holmes-Smith et al., 2006). Through this analysis, two actions can be adopted, either discarding the recurring items (Hair et al., 2006) or setting the recurring items as free parameter estimates (Byrne, 2001; Hair et al., 2006). However, the evaluation measurement model is not totally dependent on the statistical assessment alone, but it also considers the theoretical justification that has been recommended by the previous literature (Anderson & Gerbing, 1988; Hair et al., 2006; Kline, 2005).

2.3.2 Construct Reliability and Validity

Once goodness-of-fit is established, some kind of evaluation on reliability and validity must be done on the constructs (Wulf, Odekerken-Schroder, & Iacobucci, 2001). Reliability was assessed through the adoption of the cronbach alpha, construct reliability (composite reliability) (CR) and *average variance extracted*. For the validity, it can be accessed via the construct validity, convergent validity and discriminant validity.

The required value for cronbach alpha is 0.70 (Nunnally, 1978) and obtained via SPSS. As for the construct reliability (CR) and *average variance extracted* (AVE), it was measured using a formula given by Fornell dan Larcker (1981). Constructs in the study must contain the CR values 0.60 or greater and AVE values equal or greater than 0.50 (Bagozzi & Yi, 1988).

Construct validity is achieved when all fit indices for the measurement model met the requirement level (Hsieh & Hiang, 2004). Whereas, the convergent validity is achieved when the loading values were more than 0.50 for all constructs (Anderson & Gerbing, 1988; Holmes-Smith et al., 2006) and supported by the AVE values that were more than 0.50. Discriminant validity is a correlation between the constructs in the measurement model, and it must not be more than 0.85 (Kline, 2005).

3. Results

The measurement model of the confirmatory factor analysis (CFA) presented in Figure 1 shows that the union commitment construct (main construct) was formed by 3 (three) sub-constructs namely loyalty towards the union, willingness to work for the union and responsibility towards the union. Each sub-construct was measured by a variation of items namely loyalty towards the union (12 items), willingness to work for the union (4 items) and responsibility towards the union (4 items). Results of the measurement model have displayed somewhat poor fit indices where Chisq/df = 6.209, GFI = 0.847, AGFI = 0.808, CFI=0.877, TLI = 0.860, NFI=0.857 and RMSEA = 0.088. Furthermore, the correlation between sub-constructs is high or more specifically, the correlation between loyalty towards the union and willingness to work for the union as well as correlation between willingness to work for the union and responsibility towards the union with values more than 0.85 each. However, after items that did not fulfil the 0.50 loading value were discarded (seven items were discarded) and analysis of covariance was performed (between e6 and e9) following the modification index, results for Chisq/df, GFI, AGFI, CFI, TLI, NFI and RMSEA fit indices for the measurement model showed a striking improvement as exhibited in Figure 2.

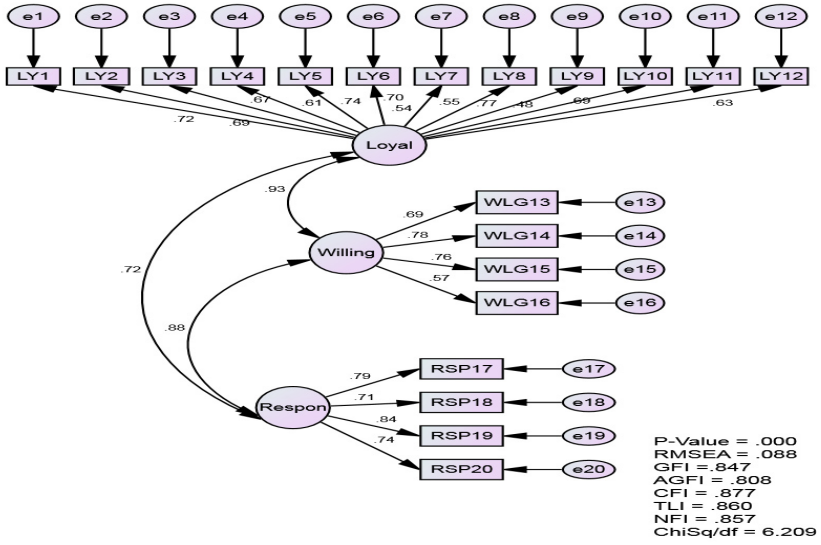

Figure 1. Measurement model of union commitment

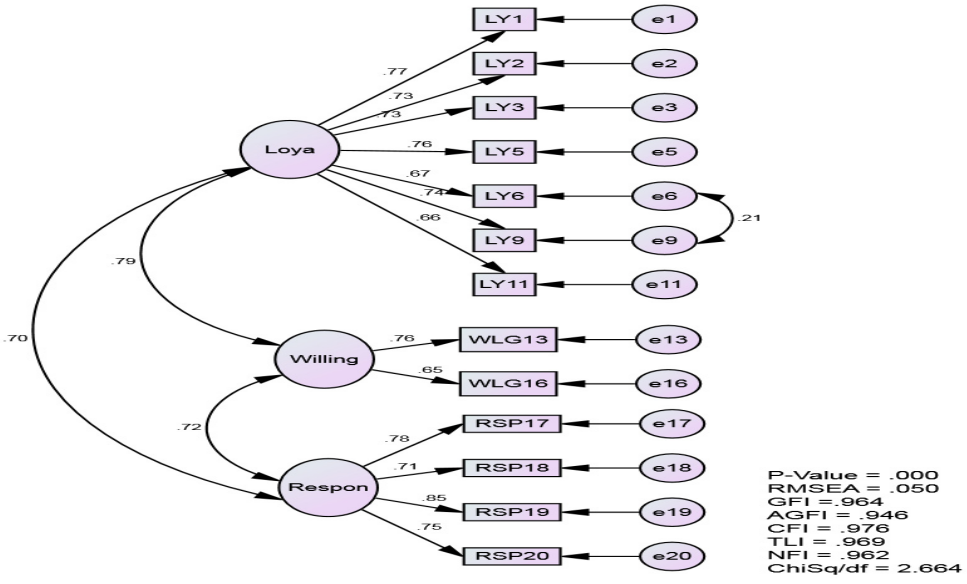

Figure 2. Modified measurement model of union commitment

The modified measurement model of union commitment highlights improved good fit indices whereby Chisq/df = 6.209 to 2.664, GFI = 0.847 to 0.964, AGFI = 0.808 to 0.946, TLI = 0.860 to 0.969, CFI = 0.877 to 0.976, NFI = 0.857 to 0.962 and RMSEA = 0.088 to 0.050. Those results were established in a summary in Table 3. The correlation between those three sub-constructs is less than .85 (see the double-headed arrow in Figure 2). Therefore, no further modifications need to be done for the measurement model.

Table 3. Fit indices for measurement model and modified measurement model

Indices	Suggestion	Measurement Model	Modified Measurement Model
Chisq/df	Chi square/df <5.0	6.209	2.664
CFI	>0.90	0.877	0.976
GFI	>0.90	0.847	0.964
AGFI	>0.90	0.808	0.946
TLI	>0.90	0.860	0.969
NFI	>0.90	0.857	0.962
RMSEA	0.05 - 0.08	0.088	0.050

Figure 2 shows that the number of items remaining for modified measurement model was 13 items namely 7 items for loyalty towards the union, 2 items for willingness to work for the union and 4 items for responsibility towards the union. Though, there are only two items remaining to measure the willingness to work for the union sub-construct, according to Bollen (1989) and Hair et al. (2006) they were deemed sufficient to measure a given construct when the sample size is large, as in the case of this study. The loading values for items of those three union commitment sub-constructs are high (more than 0.50). Therefore, the regression weight (standardized parameter estimates) for the union commitment modified measurement model may be regarded as significant (P<0.001), thus giving the goodness-of-fit scale for these three sub-constructs (In reference to Table 3).

As shown in Table 4, goodness-of-fit requirements, validity and reliability have been achieved in the study. Goodness-of-fit requirements were met since all constructs have items that carry high loading values of 0.50 and more. Moreover, the validity requirements have also been met. This is due to the fact that convergent validity namely AVE exceeded 0.5, the construct validity namely fit indices for union commitment modified measurement model met the required level and discriminant validity which is the correlation between sub-constructs is not more than 0.85. Additionally, the several requirements for reliability were also fulfilled in this study. This is due to the internal reliability where the cronbach alpha values for all constructs had been more than 0.70, construct reliability value (composite reliability) (CR) exceeded 0.60 whereas average variance extracted (AVE) value exceeded 0.50.

Table 4. CFA results for modified measurement model

Construct	Item	Factor loading value	Cronbach alpha (Above 0.7)	CR (Above 0.6)	AVE (Above 0.5)
Union commitment	LY1	0.77	0.911	0.939	0.544
	LY2	0.73			
	LY3	0.73			
	LY5	0.76			
	LY6	0.67			
	LY9	0.74			
	LY11	0.66			
	WLG13	0.76			
	WLG16	0.65			
	RSP17	0.78			
	RSP18	0.71			
	RSP19	0.85			
	RSP20	0.75			

Note: CR, composite reliability; AVE, average variance extracted; LY4, LY7, LY8, LY10, LY12, WLG14, WLG15 were dropped following the low factor loading values

4. Discussion and Conclusion

The study results describe that the modified measurement model of union commitment contains three sub-constructs namely loyalty towards the union, willingness to work for the union and responsibility towards the union. Therefore, all three dimensions suggested by Bayazit et al. (2004) were also verified in this study. Nevertheless, the number of items measuring these three dimensions is different from that reported by Bayazit et al. (2004). This is because the modified measurement model in this study was represented by 13 items only and to break these down, they are loyalty towards the union (7 items), willingness to work for the union (2 items) and responsibility towards the union (4 items). In addition, goodness-of-fit requirements, validity and reliability were fully met by the modified measurement model of union commitment presented in this study. Thus, this particular modified measurement model can be utilized to measure the commitment level among union officials. While this study provides a substantial contribution toward the verification of the measuring tool for union commitment, it does not escape some limitations. This is because respondents participating in this study only covered the unions available in Malaysia and the items were modified accordingly to cater for the local environment. Therefore, the use of this measuring tool to evaluate the level of commitment among union officers outside Malaysia must be carried out cautiously.

References

Aminuddin, M. (2009). *Essentials of Employment & Industrial Relations*. Malaysia: McGraw Hill.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411-423. http://dx.doi.org/10.1037/0033-2909.103.3.411

Arbuckle, J. L. (2005). *Amos 6.0 User's Guide*. Spring House, PA: Amos Development Corporation.

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science, 16*(1), 74-94. http://dx.doi.org/10.1007/BF02723327

Bayazit, M., Hammer, T. H., & Wazeter, D. L. (2004). Methodological challenges in union commitment studies. *Journal of Applied Psychology, 89*(4), 738-747. http://dx.doi.org/10.1037/0021-9010.89.4.738

Bollen, K. A. (1989). *Structural Equations with Latent Variables*. New York: Wiley. http://dx.doi.org/10.1002/9781118619179

Byrne, B. M. (2001). *Structural Equation Modeling With AMOS: Basics Concepts, Applications and Programming*. Mahwah, NJ: Lawrence Erlbaum Associates.

Churchill, G. A. (1995). *Marketing Research Methodological Foundation* (6th ed.). Orlando, Florida: The Dryden Press.

Department of Trade Union Affairs. (2011). *Annual Report 2011*.

Department of Trade Union Affairs. (2015). *Statistic 2015*.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50. http://dx.doi.org/10.2307/3151312

Frazer, L., & Lawley, M. (2000). *Questionnaire Design and Administration*. A Pratical Guide. Brisbane, Australia: John Wiley & Sons.

Friedman, L., & Harvey, R. J. (1986). Factors of union commitment: The case for a lower dimensionality. *Journal of Applied Psychology, 71*(3), 371-376. http://dx.doi.org/10.1037/0021-9010.71.3.371

Gordon, M. E., Philpot, J. W., Burt, R. E., Thompson, C. A., & Spiller, W. E. (1980). Commitment to the union: Development of a measure and an examination of its correlates. *Journal of Applied Psychology, 65*(4), 479-499. http://dx.doi.org/10.1037/0021-9010.65.4.479

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1995). *Multivariate Data Analysis with Readings* (4th ed.). Englewood Cliffs, NJ: Prentice Hall.

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate Data Analysis*. Edisi ke-5. New Jersey: Prentice-Hall International, Inc.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis* (7th ed.). Upper Saddle River, New Jersey: Prentice Hall.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate Data Analysis* (6th ed.). New Jersey: Prentice-Hall International, Inc.

Holmes-Smith, P., Coote, L., & Cunningham, E. (2006). *Structural Equation Modeling: From the Fundamentals to Advanced Topics*. Melbourne: SREAMS.

Hsieh, Y., & Hiang, S. (2004). A study of the impacts of service quality on relationship quality in search-experience-credence services. *Total Quality Management, 15*(1), 43-58. http://dx.doi.org/10.1080/14783360320001490 90

Johari, H. (2014). Predictors of union commitment among the public sector employees. *International Journal of Science and Research 3*(6), 2515-2521.

Johari, H., & Ghazali, S. (2011). Exploring commitment among union members: Perspective and direction. *International Review of Business Research Papers, 7*(4), 104-117.

Jöreskog, K G., & Sörbom, D. (1982). Recent developments in structural equation modeling. *Journal of Marketing Research, 19*(4), 404-416. http://dx.doi.org/10.2307/3151714

Kelloway, E. K., Catano, V. M., & Southwell, R. R. (1992). The construct validity of union commitment: Development and dimensionality of a shorter scale. *Journal of Occupational and Organizational Psychology, 65*(3), 197-211. http://dx.doi.org/10.1111/j.2044-8325.1992.tb00498.x

Kline, R. B. (2005). *Principles and Practice of Structural Equation Modeling* (2nd ed.). New York: The Guilford Press.

Nunnally, J. C. (1978). *Psychometric Theory* (2nd ed.). New York: McGraw-Hill.

Schumacker, R. E., & Lomax, R. G. (1996). *A Beginner's Guide to Structural Equation Modeling.* Mahwah, NJ: Erlbaum.

Tabachnick, B. G., & Fidell, L. S. (2001). *Using Multivariate Statistics* (4th ed.). Boston: Allyn and Bacon.

Wulf, K. D., Odekerken-Schröder, G., & Iacobucci, D. (2001). Investments in consumer relationships: A cross-country and cross-industry exploration. *Journal of Marketing, 65*(4), 33-50. http://dx.doi.org/10.1509/jmkg.65.4.33.18386

Appendix A

Table A1. Union commitment items used in this study

	Loyalty towards the union
1.	1 feel a sense of pride being part of the union committee.
2.	The record of this union committee is a good example of what dedicated people can get done.
3.	I gained a lot of benefits by joining union committee.
4.	I will keep on holding my position in the union, although the work I do at my workplace is not enjoyable.
5.	Deciding to join the union committee was a smart move on my part.
6.	I have strong confidence and trust in other union officials.
7.	Most of my desires are the real importance to the union committee.
8.	My values and union committees' are similar.
9.	I feel high loyalty to the union committee.
10.	Decisions made by the union committee often reflect my views.
11.	I promote the union committee as a great committee and should be participated to my colleagues who are union members.
12.	Based on what I know now and what I believe I can expect in the future, I plan to be a union official for the rest of the time I be a union member.
	Willingness to work for the union
13.	If asked I would continue serve on a union committee.
14.	Without doubt I would do any special work to help the union committee.
15.	I am willing to put in a great deal of effort beyond that normally expected of a union official to make the union committee successful.
16.	If asked, I would run for higher position or stay in the current post if I m holding the position of the President or Chairman.

	Responsibility towards the union
17.	I am prepared to take the risk of filing grievance or complaint to responsible parties in representing abused union members.
18.	It is my duty "to keep ears open" for information that might be helpful to the union committee.
19.	It is my duty to support or help union members use the grievance procedure or complaint procedure.
20.	It is my responsibility to see to it that the management or employer "lives up to" all the terms of the collective agreement or conditions of employment agreed.