

# Replicating the Link Between Organizational Commitments and Work Time Outside the University: A New Dataset Approach

Meiying Wu<sup>1</sup>, Huidong Liu<sup>2\*</sup>

mwwu0062@student.monash.edu<sup>1</sup>, liuhuidong@shu.edu.cn<sup>2\*</sup>

General Education, School of Education, Monash University, Melbourne, VIC 3800, Australia<sup>1</sup>  
Department of management, SILC business school, Shanghai University, Shanghai 201899, China<sup>2</sup>

**Abstract.** This study utilizes a new gathered dataset to reevaluate the three hypotheses proposed by Allen & Meyer in 1990, with the aim of better illuminating the cross-cultural applicability of their conclusions. In this new investigation, 356 individuals were invited to participate. The results support the idea that organizational commitment can be decomposed into three factors (i.e., affective commitment, normative commitment, and continuance commitment), but students with off-campus jobs would spend different amounts of time on off-campus jobs depending on the type of occupation. Specifically, the amount of time students work on campus is significantly predicted by the amount of time they work off campus and extraversion (negatively).

**Keywords:** Organizational commitment, Cross-cultural research, Off-campus jobs, Students work time

## 1 Introduction

Currently, with the gradual enrichment of the era of diversification, individuals are required to strike a balance between on-campus and off-campus activities. This necessitates considering both opportunity costs and the loyalty of students to the school organization. Moreover, it is essential to further examine whether this loyalty can be supported across cultures and different data sets. This study utilizes a newly gathered dataset to reevaluate the three hypotheses proposed by Allen & Meyer in 1990, with the aim of better illuminating the cross-cultural applicability of their conclusions: 1. Organizational commitment to the university is comprised of three factors: affective commitment, normative commitment, and continuance commitment [1]. 2. The time that students spend on their university work is significantly predicted by their conscientiousness (positively), extroversion (negatively), affective commitment (positively), normative commitment (positively), continuity commitment (positively), and amount of time working in a job outside the university (negatively). These effects will be significant even after controlling for gender [2]. 3. The three types of organizational commitment will be significantly lower for students who have a job outside the university (working more than 20 hours per week) compared to both those who have a part-time job outside the university (working fewer than 20 hours per week) and those who do not have a job outside the university [3,4]. The reason for reproducing this paper is that the current era has undergone changes. We believe that the validity of the conclusions requires support from cross-cultural

samples, which is lacking in the existing literature. This is why our study aims to replicate the research from 1990 while introducing new influencing factors.

## 2 Methodology and materials

In this new investigation, 356 individuals was invited to participate. Any participants who did not complete items of the questionnaire and cases that were boxplots in univariate to assess as univariate outliers were excluded from the analysis (see the excluded subjects list in the appendix). In addition, this study also determined Mahalanobis distance values (i.e., a threshold value of 31.26 for 8 independent variables and 3 dummy variables, CHINV(0.001, 11); Pallant, 2020) and no cases was excluded. After the exclusion of these participants, a total of 276 participants remained (male=132, female=144), and the gender variable was set as a dummy variable (male = 1, female = 0). And the ratio of the number of projects to the number of cases exceeds 1:5 and is greater than 150. In addition, according to the questionnaire settings 3rd, 4th, 5th and 13th are reverse items requiring reverse scoring [1,5].

## 3 Data analysis and results

### 3.1. Exploratory factor analysis to organizational commitment

In this section, the present analysis endeavors to examine whether organizational commitment can be composed of affective commitment (AC), continuance commitment (CC), and normative commitment (NC) [1]. To accomplish this, an exploratory factor analysis for the 18-item affective, continuance, and normative commitment scales (ACNCS) was conducted using SPSS version 26 (i.e., variables were of continuous type and the case-to-item ratio exceeded 5:1; Pallant, 2020). Items 1, 2, 11, and 13 were excluded from the second exploratory factor analysis. Based on the classification of past studies for organizational commitment, this study operationalized three factors for analysis to scrutinize the factorability of the ACNCS. The results of the second EFA showed that Bartlett's test of sphericity was statistically significant, as indicated by an approx.  $X^2(153) = 1603.42, p < .001$ , and the KMOM yielded a significant value of .82. The extracted factors accounted for a total variance of 51.40%, and all factors exhibited strong loading (i.e.,  $>.3$ ; Pallant, 2020). The three groups resulting from the second factor analysis align with those suggested by prior studies [1], despite the exclusion of four items. **This supports Hypothesis 1 that organizational commitment can be decomposed into three factors (i.e., AC, CC, and NC), and the present study will employ the adapted items in subsequent analyses.**

### 3.2. Reliability and correlation analysis

Reliability analysis was used to examine three corresponding dimensions (i.e., AC, CC, and NC). For AC, Cronbach's  $\alpha = .84$ , for CC, Cronbach's  $\alpha = .78$ , for NC, Cronbach's  $\alpha = .81$ . All scales of organisational commitment, the conscientiousness scale ( $\alpha = .79$ ) and the extroversion scale ( $\alpha = .87$ ) were above the acceptable threshold of  $\alpha = .7$  [2], which implies that these scales all have good reliability. Since the conscientiousness scale and extroversion scale are single-dimensional scales, factor analysis was not performed, and conscientiousness and extroversion were represented based on the mean of all items. In addition, this analysis

generated three dummy variables based on the three types of work represented by working 3 (no work, 1,0,0; work between 1 and 20 hours, 0,1,0; work more than 20 hours, 0,0,1). As shown in Table 1, correlation analysis was used to depict the correlations between the 10 predictor variables and the dependent variable to reveal how much time students spent in school working (i.e., Unitime) and what variables might be influenced by them, which laid the groundwork for the multiple linear regression.

**Table 1.** Means, Standard Deviations, and Unitime Correlations (N=276)

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1gender	.48	.50	—									
2Unitime	53.7	20.6	-.10	—								
3 WT	2.46	2.17	-.23**	-.30**	—							
4 AC	3.77	1.01	-.14*	.07	.10	—						
5 CC	4.29	1.13	.04	.01	-.06	.10	—					
6 NC	3.75	1.13	-.10	.11	-.09	.44*	.40*	—				
7Consci	3.42	.68	-.11	.06	.002	.28*	-.10	.10	—			
8 Extro	3.19	.92	.02	-.17**	.15*	.23*	.04	.05	.16*	—		
9 NW	.30	.46	.11	.21*	-.75**	-.07	.05	.06	-.05	-.22**	—	
10 OT	.61	.49	-.01	-.08	.35*	-.001	-.06	-.04	.04	.18*	-.83**	—
11 MT	.01	.28	-.16**	-.20**	.63*	.12	.02	-.04	.003	.04	-.20**	-.38**

*Note.* \* represents the degree of significance. \* $p < .05$ , \*\* $p < .01$ . Unitime stands for time spent on school work. WT stands for time spent working outside of school per week (i.e., the working 2 variable); Consci stands for conscientiousness; Extro stands for extraversion; NW represents don't work; OT stands for working between 1–20 hours, and MT denotes working more than 20 hours.

The results of correlation analysis showed that Unitime and WT ( $r = -.30$ ,  $p < .01$ ), extraversion ( $r = -.17$ ,  $p < .01$ ) were negatively correlated, implying that the more time students spend working outside of school or the higher the level of extraversion, the less time they may spend on school work. The correlations between AC and gender were negative ( $r = -.14$ ,  $p < .05$ ), and the correlations between AC and NC ( $r = .44$ ,  $p < .01$ ), conscientiousness ( $r = .28$ ,  $p < .01$ ), and extraversion ( $r = .23$ ,  $p < .01$ ) were positive [6].

### 3.3. Hierarchical multiple regression

Regarding multicollinearity, the correlation matrix showed no high correlation between the variables and therefore did not indicate multicollinearity. In addition, the tolerance values were high (above .10), while the VIF values were below 10, which also indicates the absence of multicollinearity [4]. Fifth, the results of the normal P-P plot and the scatter plot showed the normality and homoscedasticity (i.e., diagonal straight line) of standardized residuals. With all hypothesis checks satisfied, hierarchical multiple regression was used to further explore the

variables affecting unitime, where gender was entered as the control variable predicting unitime, and AC, NC, CC, conscientiousness, extroversion, and WT were used as the independent variables predicting unitime as described in Table 2 [3].

**Table 2.** Hierarchical multiple regression to Unitime (N=276)

Model	Variable	Estimate	SE	95% CI	<i>P</i>
Step 1	Intercept	47.79	3.98	[39.96, 55.61]	<.001
	Gender	3.73	2.49	[-1.16, 8.62]	.13
Step 2	Intercept	52.96	9.01	[35.22, 70.70]	<.001
	Gender	5.88	2.44	[1.08, 10.68]	.02
	WT	-3.06	.57	[-4.18, -1.95]	<.001
	AC	1.47	1.37	[-1.23, 4.16]	.28
	CC	-.53	1.13	[-2.76, 1.69]	.64
	NC	.62	1.26	[-1.87, 3.11]	.62
	Consci	1.38	1.79	[-2.14, 4.89]	.44
	Extro	-3.48	1.31	[-6.07, -.90]	.01

*Note.* CI stands for confidence interval

In Step 1 (i.e., the first hierarchical regression), gender as a control variable predicted 0.8% of the variance in Unitime,  $\Delta R^2 = 0,004$ ;  $F(1, 275) = 2.26$ ,  $p = .13$ , which implies that the overall fit of the model with control variables was not significant. In the Step 2, 8 independent variables were added to the model, and the entire model predicted 87% of the variance in Unitime,  $\Delta R^2 = .87$ ,  $F(8, 269) = 256.47$ ,  $p < .001$ . In the Step 1, gender ( $\beta = 3.73$ ,  $p > .05$ ) was not a significant predictor in the model, but was significant in Step 2 ( $\beta = 2.44$ ,  $p < .05$ ). Also, after controlling gender, WT ( $\beta = -3.06$ ,  $p < .001$ ) and extraversion ( $\beta = -3.48$ ,  $p < .05$ ) negatively predicted Unitime, suggesting that higher levels of WT and extraversion were associated with shorter periods of on-campus work for students. Other variables, however, failed to predict changes in unitime. **The results of the hierarchical regressions partially support Hypothesis 2, specifically, the amount of time students work on campus is significantly predicted by the amount of time students work off campus is and extraversion (negatively).**

### 3.4. One-way ANOVA and Kruskal Wallis test

Since it involves the comparison of means of different organizational commitments, one-way ANOVA was performed to examine the effect of three job types on organizational commitment. As shown in Table 3, the results of ANOVA showed no significant difference in the means of organizational commitments under the job type difference and therefore are not reported here. This result is consistent with the results of the Kruskal-Wallis test (AC,  $KW = 4.00$ ,  $p = .14$ ; NC,  $KW = .58$ ,  $p = .75$ ; CC,  $KW = 1.84$ ,  $p = .40$ ; see output file), which do not support Hypothesis 3 [7,8].

**Table 3.** Means, Standard Deviations, and One-Way ANOVA in organizational commitment and work types

Measure	NW		OT		MT		<i>F</i> (2,273)	<i>P</i>	$\eta^2$
	M	SD	M	SD	M	SD			
AC	3.67	1.03	3.77	.95	4.15	1.25	2.11	.12	.12
CC	4.37	1.13	4.24	1.13	4.36	1.16	.43	.65	.06
NC	3.85	1.06	3.71	1.12	3.59	1.40	.64	.53	.005

## 4 Conclusion

The results of current study supports Hypothesis 1 that organizational commitment can be decomposed into three factors (i.e., AC, CC, and NC), and the present study will employ the adapted items in subsequent analyses. And the results of the hierarchical regressions partially support Hypothesis 2, specifically, the amount of time students work on campus is significantly predicted by the amount of time students work off campus is and extraversion (negatively). However, hypothesis 3 is not supported by the current empirical research.

## References

- [1] Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational Psychology*, 63(1), 1-18
- [2] Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. Sage.
- [3] McDonald, J.H. (2014). *Handbook of Biological Statistics* (3rd ed.). Sparky House Publishing.
- [4] Pallant, J. (2020). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS* (7th ed.). Routledge.
- [5] Cooley, W. W., & Lohnes, P. R. (1971). *Multivariate Data Analysis*. Wiley.
- [6] Dalton, D. R., Krackhardt, D. M., & Porter, L. W. (1981). Functional turnover: An empirical assessment. *Journal of Applied Psychology*, 66, 716–721.
- [7] Farrell, D., & Rusbult, C. E. (1981). Exchange variables as predictors of job satisfaction, job commitment, and turnover: The impact of rewards, costs, alternatives, and investments. *Organizational Behavior and Human Performance*, 27, 78–95.
- [8] Hom, P. W., Katerberg, R., & Hulin, C. L. (1979). A comparative examination of three approaches to the prediction of turnover. *Journal of Applied Psychology*, 64, 280–290.