



Emotional Dissonance and the IT Professional - A Replication

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Abstract:

This study is a conceptual replication of the Rutner, Hardgrave, and McKnight (2008) model of emotional dissonance analyzed as an antecedent of work exhaustion and job satisfaction extending the original Moore (2000a) model of turnover intention. Using a sample of IT workers from a Fortune 500 company, we tested the model of emotional dissonance and turnover intention. Our sample size is 303, nearly double the sample size (N=161) used in the original study. We successfully replicated five of the seven hypotheses tested in original paper. These results strengthen theories in information systems exploring job satisfaction and turnover intention among IT workers. Future research might consider new stressors or issues facing IT workers that could be investigated with emotional dissonance.

Keywords: Emotional Dissonance, IT Workforce, Turnover Intention, Replication

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1 Introduction

The information technology (IT) industry is said to have the highest turnover rate of any industry worldwide (Booz, 2018; viGlobal, 2018). The high turnover rate among IT professionals (Johnson, 2018) coupled with the shortage of IT workers for available positions has made retaining IT workers a leading concern for companies that rely on their IT workforce to stay competitive in the digital economy. Thus, it is critical for organizations to develop strategies to recruit and retain competent IT workers for their organizations. Research investigating turnover intention among IT professionals identifies a number of antecedents (Joseph et al., 2007) including work exhaustion (Moore, 2000a), job satisfaction (Kammeyer-Mueller et al., 2013; Mesmer-Magnus et al., 2011; Rutner et al., 2008), and organizational commitment (Ahuja et al., 2007). Studies that explore the contributing factors and consequences of IT turnover in a variety of contexts and environments continue to be an important area of information systems research (Ahuja et al., 2007; Joseph et al., 2015; Moore, 2000a, 2000b).

In a 2008 study, *Emotional Dissonance and the IT Professional*, Rutner, Hardgrave, and McKnight investigate turnover intention with emotional dissonance analyzed as an antecedent of work exhaustion and job satisfaction. Their work extends Moore's (2000a) original model of turnover intention. Findings from the original paper are shown in Figure 1.

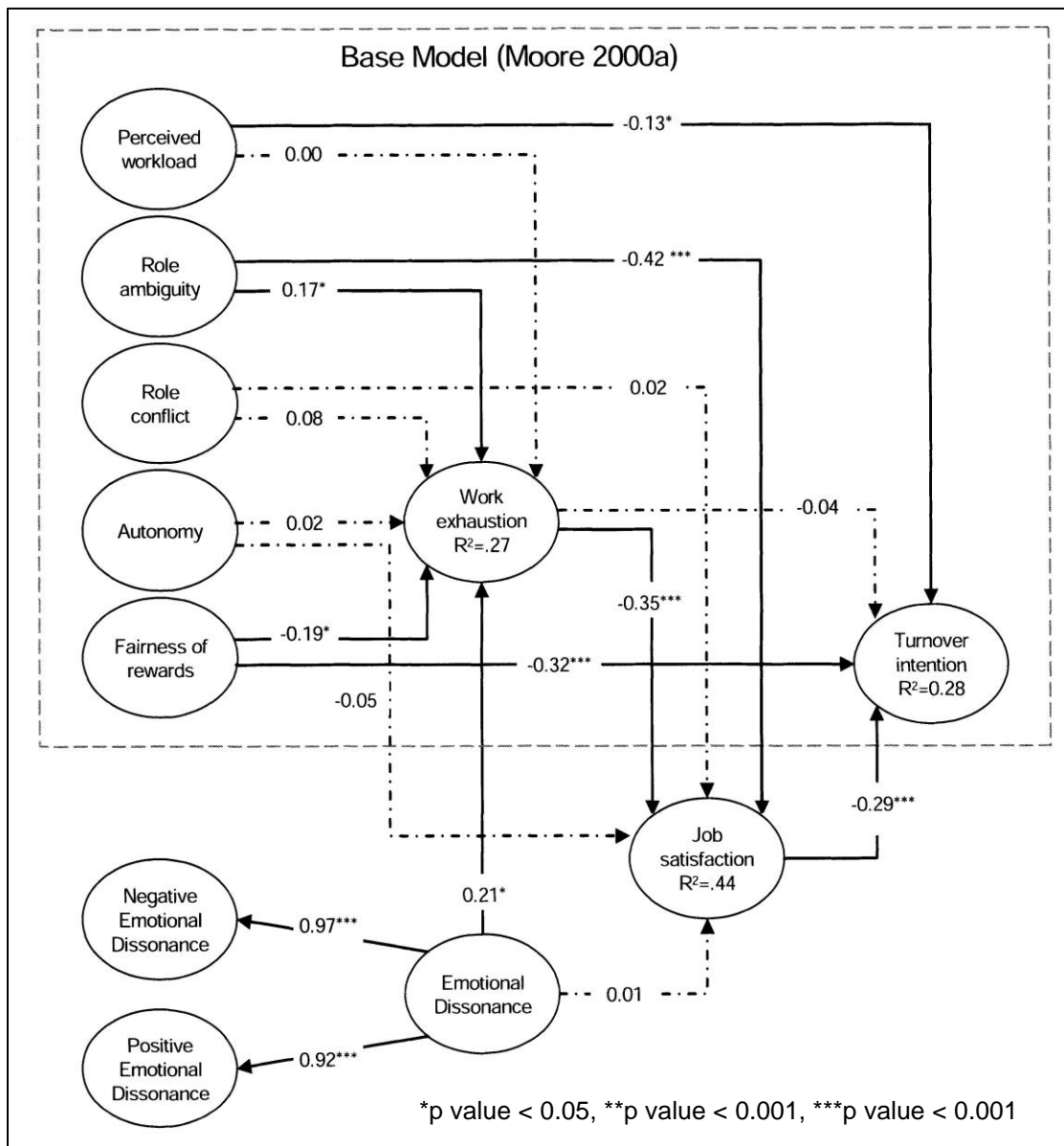


Figure 1: Results of Model Testing (Rutner et al. 2008)

Emotional dissonance, a conflict between one's felt emotion and the emotional display norms of one's environment, is associated with a variety of negative outcomes for employees (e.g. job stress, burnout, and health) and organizations (e.g. turnover intention) (Kammeyer-Mueller et al., 2013; Mesmer-Magnus et al., 2011). Rutner et al. (2008) hypothesize that emotional dissonance affects an IT employee's work exhaustion and job satisfaction, which then impact turnover intention. The authors concluded the effect of emotional dissonance on job satisfaction is mediated by work exhaustion while low job satisfaction increases turnover intention (Rutner et al., 2008). The original study extended Moore's 2000a model by demonstrating that job satisfaction mediates the relationship between work exhaustion and turnover intention. Moreover, Rutner et al.'s findings indicate that emotional dissonance is a significant predictor of work exhaustion, thus extending antecedents of work exhaustion to include emotional dissonance (Rutner et al., 2008). The hypotheses from the original study and corresponding results are listed in Table 1.

Hypothesis	Finding
H1a: Negative emotional dissonance is positively related to work exhaustion.	Supported
H1b: Negative emotional dissonance is negatively related to job satisfaction.	Not Supported
H2a: Positive emotional dissonance is negatively related to work exhaustion.	Supported
H2b: Positive emotional dissonance is positively related to job satisfaction.	Not Supported
H3: Work exhaustion is negatively related to job satisfaction.	Supported
H4: Role ambiguity is negatively related to job satisfaction.	Supported
H5: Role conflict is negatively related to job satisfaction.	Not Supported
H6: Autonomy is positively related to job satisfaction.	Not Supported
H7: Job satisfaction is negatively related to turnover intention.	Supported

Rutner et al.'s findings demonstrate the impact of emotional dissonance on the well-being of IT workers through work exhaustion and ultimately, the organization, by increasing turnover intention. The nature of IT work continues to involve emotional labor as IT workers are expected to capitalize on their interpersonal skills to interact with internal and external clients (Rutner et al., 2015). We further emotional labor and turnover research by conducting a conceptual replication of Rutner et al.'s 2008 study to test the strength of findings of the original study. We utilize the same hypotheses and method as the original study; however, we conduct our study in a different industry and use different items for some constructs. We determined the original study was conducted in a different industry as we contacted the first author to determine this information since it was not provided in the manuscript. In the next section, we describe the method used for our replication study, followed by our results of the replication. We conclude by discussing the implications of our study.

2 Method

2.1 Data and Sample

The data for our replication study were gathered from IT employees at a Fortune 500 company with a global workforce of over 100,000 people. The majority of IT workers are located at the corporate headquarters in the Midwest United States with approximately 9,000 employees. Our sample was taken from this location. The original sample in Rutner et al. (2008) was obtained from IT employees at a Fortune 100 company and received 161 usable responses to their survey, which was sent out to 225 IT employees. In line with Rutner et al. 2008, we collected data using a questionnaire sent to 554 IT employees in the participating company via email. The researcher who sent the email ensured potential participants that responses would be kept anonymous. After the initial email, two reminder emails were sent over a two-week period to encourage employees to complete the survey. Ultimately, we received 362 surveys back from IT employees.

In order to determine if a non-response bias was present, we performed an analysis comparing surveys submitted late with those submitted earlier and compared completed surveys with incomplete submissions and no bias was found. Of the 362 questionnaires we received, we removed 58 responses that had incomplete data. The resulting sample is 303 participants. Sample demographics are presented in Table 2. Our sample is comprised of 77% male and 23% female. The average tenure at the participating company was 9.6 years. The original study did not report demographics for their sample. However, they did note the IT positions held by respondents. We also gathered the job positions from our sample. The breakdown of IT positions from the original study and our study is shown in Table 3.

Total Responses: 303		
Gender	Male	77%
	Female	23%
Organizational Tenure	< 2 years	18%
	2-5 years	16%
	6-10 years	25%
	11-15 years	20%
	> 15 years	21%

	Original Study	Current Study
Sample Size	161	303
IT Positions:		
Managers	12%	18%
Programmers/Analysts	51%	62%
Systems/Customer Support Specialists	25%	12%
Not reported	12%	8%

We conducted a power analysis using G*Power and found that a sample size of 129 was required for a medium effect size with power at 95%. The sample size of 303 for this study adequately meets this power requirement. Although the original study did not include effect sizes, this study was designed to detect a medium effect size.

2.2 Items and Measures

We used survey items from previously tested scales which are listed in the Appendix. While we used some items from the original study, we used some different items as well with updated scales. We note the construct measures used in our study, along with the measures from the original study, in Table 4.

Measure	Original Study	Replication Study
Perceived workload	Kirmeyer and Dougherty 1988, Moore 2000a (4 items)	Moore 2000a (2 items)
Role ambiguity	Rizzo, House, and Lirtzman 1970, Moore 2000a (3 items)	Moore 2000a (3 items)
Role conflict	Rizzo, House, and Lirtzman 1970, Moore 2000a (5 items)	Moore 2000a (5 items)
Autonomy	McKnight 1997 (4 items)	McKnight 1997 (4 items)
Fairness of rewards	Niehoff and Moorman 1993, Moore 2000a (2 items)	McKnight et al. 2009 (5 items)
Negative affectivity	Watson, Clark, Tellegen 1988 (7 items)	Moore 2000a (10 items)
Work exhaustion	Schaufeli, Leither, and Kalimo 1995, Moore 2000a (4 items)	Moore 2000a (4 items)
Job satisfaction	McKnight 1997 (3 items)	McKnight 1997 (3 items)
Turnover intention	Moore 2000a (4 items)	Moore 2000a (4 items)
Emotional Dissonance	Adapted from (Cote and Morgan 2002; Erickson and Ritter 2001; Schaubroeck and Jones, 2000) (10 items)	Rutner et al. 2008 (10 items)

For the negative affectivity construct, we included the 3 items (guilty, scared, jittery) that Rutner et al. (2008) did not include so they could shorten the length of the scale. Rutner et al. (2008, p. 639) state, "Our research site asked that we limit the number of survey questions." We included these items because we were not limited by space constraints. Additionally, we used the 5 items for fairness of rewards from McKnight et al. (2009) which include 3 items in addition to the 2 items (Fairness_1 and Fairness_2 in the Appendix) that Moore (2000a) used. Since the McKnight et al. paper (2009) was more recent and contained more than 2 items, we chose to include the additional items. For the perceived workload construct we used 2 items from Moore (2000a). We did not include the 2 items from Kirmeyer and Dougherty (1988) because the items consistently loaded with role conflict in Moore (2000a) and the study we are replicating (Rutner et al. 2008). We test our model and hypotheses using the same methodology as the original study – structural equation modeling. While the first study analyzed data using AMOS 5.0, we used a more recent version of SPSS AMOS 24. The results of our analysis are presented in the next section.

3 Findings

In this section we will present our findings of the conceptual replication. We completed our replication using the same steps as the original study including item culling, exploratory factor analysis, and structural equation modeling using AMOS. For the first step, we assessed the normality of our items by observing their skewness and kurtosis. Similar to the original study, several negative affectivity items exceeded the acceptable standard of < 3.0 (item 5: 7.34; item 7: 4.547; and item 10: 8.507) and were subsequently removed (Kline, 1998). All other items were found to be normal based on this assessment. We continued our replication by completing a principal components factor analysis, as was conducted in the original study. Items that loaded $< .5$ were removed as were any items that cross-loaded more on another construct than their own construct (Klein, 1998).

The results of our factor analysis are shown in Table 5. Based on the factor analysis, we removed two items that did not load at least $.5$ on their own construct: fairness item 4 and negative affectivity item 6 which both had a loading of $.325$, and negative affectivity item 4 with a loading of $.414$. In addition, we eliminated fairness item 5, which loaded on another construct. Our analysis shows that perceived workload and work exhaustion items loaded on one factor.

We chose to keep the items from perceived workload and work exhaustion in the model so that we could include all variables in the replication. Furthermore, we proceeded with the analyses treating perceived workload and work exhaustion as two separate constructs to be consistent with the Rutner et al. study. In the original study, the constructs of positive emotional dissonance and negative emotional dissonance all loaded together on one construct. This is also the case in our replication. As such, we followed the procedure in the original study to model negative emotional dissonance and positive emotional dissonance “as reflective first order factors of a second order emotional dissonance variable. This approach allows us to keep both NED and PED in the model to evaluate their relative influence in the model” (Rutner et al. 2008, p. 642).

3.1 Measurement Model

We continued with the replication by performing structural equation modeling using the Amos 24 software package. Next, we conducted a confirmatory factor analysis (CFA) using a maximum likelihood estimation method. Several fit indices were used to evaluate the fitness of the factor structure and our data including the comparative fit index (CFI), incremental fit index (IFI), and root mean square residual (RMSEA) (Bentler, 1990). The fit statistics are shown in Table 6 with the original study findings. Like the results of the measurement model in the original study, we find that the factor structure has a good fit with the data. Both CFI and IFI are close to 1 (Bentler, 1990), which demonstrates good fit. Additionally, RMSEA is 0.059 , which is between the suggested values of $.05$ and $.08$, indicating a good fit between our data and the model (Bentler, 1990).

In order to assess reliability of our factors we examined both composite reliability and Cronbach's alpha. Composite reliability should be above $.7$ to demonstrate acceptable reliability (Fornell & Larcker, 1981). The composite reliability for our factors ranged from $.832$ for role conflict to $.960$ for positive emotional dissonance, demonstrating reliability. Further, we assessed scale reliability using Cronbach's alpha scores, which are shown in Table 7. Cronbach alpha scores for the 11 constructs ranged from $.831$ for role conflict to $.958$ for positive emotional dissonance, demonstrating internal consistency.

Convergent validity was assessed in two ways. The first approach is to ensure item loadings are significant; all of the loadings were significant with each having a p -value $< .01$. We also examined the average variance extracted (AVE) for each construct. An AVE of greater than $.5$ is sufficient to show convergent validity. The AVE values ranged from 0.513 for role conflict to 0.844 for fairness.

Discriminant validity was measured by comparing the correlations between variable pairs with the square root of the AVE (Fornell and Larcker, 1981) as shown in Table 7. All constructs illustrate discriminant validity except for NED and PED. The correlation between NED and PED is $.896$ while the square root of the AVE is $.890$. As with the Rutner et al. study, this replication will analyze emotional dissonance as a second order factor in the model.

Table 5. Principle Component Analysis (Note loadings below .30 excluded)

	TO	NED/PED	AUT	NA	PWL/WE	RC	Fair	RA	JS	10
TO1R	0.756									
TO2R	0.823									
TO3	0.842									
TO4	0.880									
NED1		0.715								
NED2		0.896								
NED3		0.922								
NED4		0.931								
NED5		0.898								
PED1		0.799								
PED2		0.923								
PED3		0.922								
PED4		0.930								
PED5		0.938								
AUT1			0.886							
AUT2			0.900							
AUT3			0.927							
AUT4			0.885							
NA1				0.920						
NA2				0.542						
NA3				0.847						
NA4				0.414						
NA6				0.325					-0.302	
NA8				0.887						
NA9				0.755						
PWL3R					-0.788					
PWL4R					-0.794					
WE1					-0.826					
WE2					-0.895					
WE3					-0.668					
WE4					-0.678				-0.315	
RC1						-0.609				
RC2						-0.652				
RC3						-0.727				
RC4						-0.842				
RC5						-0.789				
Fair1							0.939			
Fair2							0.913			
Fair3							0.650			
Fair4							0.325			0.593
Fair5										-0.704
RA1R								-0.817		
RA2R								-0.840		
RA3R								-0.822		
JS1									0.668	
JS2									0.764	
JS3									0.598	
Eigen Value	11.15	6.65	3.43	3.34	2.75	2.13	1.87	1.53	1.10	1.071
% of Variance	23.72	14.16	7.31	7.12	5.86	4.54	3.98	3.26	2.35	2.279
Rotation Method: Oblimin with Kaiser Normalization.										
NED - negative emotional dissonance; PED - positive emotional dissonance; AUT - autonomy; PWL - perceived workload; RA - role ambiguity; RC - role conflict; FAIR - fairness of rewards; NA - negative affectivity; WE - work exhaustion; JS- job satisfaction; TO - turnover intention										

Fit Indices	Original Study	Replication Study
RMSEA	0.064	0.059
CFI	0.91	0.92
IFI	0.91	0.92

	Mean	SD	α	CR	AVE	PWL	RA	RC	AUT	Fair	WE	TO	JS	PED	NED	NA
PWL	4.541	1.521	0.870	0.878	0.782	0.884										
RA	2.894	1.261	0.858	0.861	0.675	0.159*	0.822									
RC	4.117	1.321	0.831	0.832	0.513	0.417***	0.338***	0.716								
AUT	4.983	1.311	0.918	0.918	0.739	-0.061	-0.116†	-0.012	0.859							
Fair	4.589	1.609	0.890	0.914	0.844	-0.184**	-0.212***	-0.152**	0.163**	0.919						
WE	3.728	1.575	0.907	0.907	0.709	0.695***	0.329***	0.412***	-0.207**	-0.264***	0.842					
TO	2.82	1.446	0.905	0.904	0.708	0.176**	0.429***	0.222***	-0.152*	-0.238***	0.342***	0.841				
JS	5.165	1.385	0.894	0.899	0.750	-0.247***	-0.558***	-0.237***	0.274***	0.228***	-0.467***	-0.572***	0.866			
PED	4.417	1.669	0.958	0.960	0.828	0.166**	0.08	0.193**	-0.154*	-0.134*	0.149*	0.099†	-0.120*	0.910		
NED	4.731	1.609	0.948	0.950	0.793	0.186**	0.087	0.251***	-0.113†	-0.130*	0.184**	0.053	-0.129*	0.896***	0.890	
NA	1.422	0.533	0.796	0.892	0.589	0.280**	0.286**	0.341**	-0.218**	-0.154**	0.366**	0.297**	-0.274**	0.152*	0.166**	0.767

NED - negative emotional dissonance; PED - positive emotional dissonance; AUT - autonomy; PWL - perceived workload; RA - role ambiguity; RC - role conflict; FAIR - fairness of rewards; NA - negative affectivity; WE - work exhaustion; JS- job satisfaction; TO - turnover intention; Significance of Correlations: † p < 0.100, * p < 0.050, **p < 0.010, *** p < 0.001

3.2 Structural Model

We tested the same structural model as presented in the original study. However, the model includes Moore et al.'s (2000a) original model along with seven additional hypotheses which include emotional dissonance and job satisfaction. The results of the goodness of fit indices for our model are presented in Table 8 and are within the accepted level to demonstrate our structural model is a good fit with our data. The results of the hypothesis testing are shown in Table 9 and our replication results for each hypothesis are presented in Table 10. We found support for four of the seven hypotheses (hypothesis 3, 4, 6, and 7). However, our analysis did not support hypothesis 1, 2, or 5.

Fit Indices	Original Study	Replication Study
IFI	0.90	0.91
TLI	0.89	0.90
CFI	0.90	0.91
RMSEA	0.07	0.06

Table 9: Detailed Results of Hypothesis Testing			
		Original Study	Current Study
Hypothesis		Beta	Beta
NED loading on ED		0.97***	0.99***
PED loading on ED		0.92***	0.90
H1a, H2a	ED > WE	0.21*	-0.00
H1b, H2b	ED > JS	0.01	-0.03
Base Model Relationships			
	PWL > WE	0.00	0.61***
	PWL > TO	-0.13*	-0.05
	RA > WE	0.17*	0.15**
	RC > WE	0.08	0.07
	AUT > WE	0.02	-0.12*
	Fair > WE	-0.19*	-0.09
	Fair > TO	-0.32***	-0.10*
	WE > TO	-0.04	0.09
Job Satisfaction Hypotheses			
H3	WE > JS	-0.35***	-0.28***
H4	RA > JS	-0.42***	-0.46***
H5	RC > JS	0.02	0.06
H6	Aut > JS	-0.05	0.15**
H7	JS > TO	-0.29***	-0.49***
Control Variables			
	NA > WE	0.20*	0.12*
	NA > JS	-0.10	-0.05
	NA > TO	0.15*	0.10
	OT > WE	0.01	0.04
	OT > JS	0.12*	0.00
	OT > TO	-0.01	-0.08
R-squared			
	R2 - TO	0.28	0.33
	R2 - JS	0.44	0.41
	R2 - WE	0.27	0.55
<p>NED - negative emotional dissonance; PED - positive emotional dissonance; PWL - perceived workload; RA - role ambiguity; RC - role conflict; AUT - autonomy; FAIR - fairness of rewards; NA - negative affectivity; WE - work exhaustion; JS- job satisfaction; TO - turnover intention; OT - organizational tenure</p> <p>*p value < .05 **p value <0.01 ***p value <0.001</p>			

Table 10. Hypotheses Replication Results

Hypothesis	Original Study	Replication Study
H1: Emotional dissonance is positively related to work exhaustion.	Supported	Not Supported
H2: Emotional dissonance is negatively related to job satisfaction.	Not Supported	Not Supported
H3: Work exhaustion is negatively related to job satisfaction.	Supported	Supported
H4: Role ambiguity is negatively related to job satisfaction.	Not Supported	Supported
H5: Role conflict is negatively related to job satisfaction.	Not Supported	Not Supported
H6: Autonomy is positively related to job satisfaction.	Supported	Supported
H7: Job satisfaction is negatively related to turnover intention.	Supported	Supported

In our model, the relationship between emotional dissonance and work exhaustion was not supported. Similarly, we did not find support for the negative influence of emotional dissonance on job satisfaction. Additionally, we found that role conflict did not predict job satisfaction. We did find strong support that both work exhaustion (H3) and role ambiguity (H4) are predictors of job satisfaction. We also found support for H6, wherein autonomy had a significant, positive influence on job satisfaction. Finally, we found that job satisfaction was negatively related to turnover intention (H7).

4 Discussion

This replication contributes to the Information Systems Replication Project which seeks to replicate information systems research from top IS journals. We performed our replication on Rutner et al. 2008 from MISQ in order to ascertain the viability of emotional dissonance theory. We were able to replicate several hypotheses of the original study. However, we also found inconsistencies with the results of several hypotheses. Rutner et al. (2008) extended Moore's 2000a model on IT turnover and work exhaustion by adding emotional dissonance as a factor influencing work exhaustion and job satisfaction.

4.1 Replication of Base Model

The original paper presents a model that extends Moore's (2000a) model of work exhaustion. In this section, we discuss our findings regarding this base model, considering the findings of Moore (2000a) and Rutner et al. (2008). A comparison of our findings with Moore (2000a) and Rutner et al. (2008) is shown in Table 11. We found support for autonomy negatively affecting work exhaustion where Rutner et al. (2008) and Moore (2000a) did not. However, in the study of a specific group of IT professionals, road warriors, Ahuja et al. (2007) found a significant negative relationship between autonomy and work exhaustion. Similarly, the correlation between autonomy and work exhaustion was significant in this study. One possible explanation is that this sample had more managers and programmers/analysts.

To conduct further analysis, we divided the sample between managers and non-managers and examined the correlation between autonomy and work exhaustion. This post-hoc analysis indicated that the autonomy to work exhaustion relationship for non-managers had a correlation of $-.20$ and was significant at the $.01$ level. However, the correlation between autonomy and work exhaustion for the managers only group was not significant. Additionally, we conducted a second post-hoc analysis by dividing the sample into programmers/analysts only and a non-programmers/analysts group. The autonomy to work exhaustion correlation for the programmers/analysts only group was $-.25$ and significant at $.001$.

The correlation for the non-programmers/analysts group was not significant. Since programmers/analysts constituted 62% of the sample, this job position is driving the significance of the autonomy and work exhaustion relationship. Programmers/analysts constituted a higher percentage of our sample than of the Rutner et. al (2008) sample. Consistent with the Ahuja et al. (2007) road warriors' study, our research indicates different results based upon IT position. Also, in comparing the mean and standard deviation for autonomy and work exhaustion between the two studies, the mean for autonomy is lower and the standard deviation higher while the mean for work exhaustion is higher and the standard deviation is also larger. As such, future research should consider the IT position and the effect on turnover models.

	Moore (2000a)	Rutner et al. (2008)	Replication
PWL > WE	✓	Not Supported	✓
PWL > TO	✓	✓	Not Supported
RA > WE	Not Supported	✓	✓
RC > WE	Not Supported	Not Supported	Not Supported
AUT > WE	Not Supported	Not Supported	✓
Fair > WE	✓	✓	Not Supported
Fair > TO	✓	✓	✓
WE > TO	✓	Not Supported	Not Supported

PWL - perceived workload; WE - work exhaustion; TO - turnover intention; RA - role ambiguity; RC - role conflict; AUT - autonomy; FAIR - fairness of rewards; JS- job satisfaction

Another finding in the base model that was inconsistent from Rutner et al. (2008) but consistent with Moore (2000a) was support for perceived workload positively impacting work exhaustion. The correlation between these two constructs was significant in all three studies. In the base model of this replication, the r-squared for work exhaustion is 55% compared to 27% for the Rutner et al. (2008) study and 56% for the Moore (2000a) study. Perceived workload, role ambiguity, and autonomy were all significant influencers of work exhaustion, thus explaining a higher percentage of the variance in work exhaustion compared to the Rutner et al. (2008) study and a comparable amount of variance compared to Moore (2000a). Fairness in this study was not significant in predicting work exhaustion where it was significant in the two prior studies; however, fairness was a significant predictor of turnover in all three studies. Furthermore, perceived workload was not a significant influencer of turnover in this replication where it was significant in the two previous studies. It is possible that these differences could be attributed to the cross loadings of perceived workload with work exhaustion. Even though we ultimately used the same two questions for perceived workload as Rutner et al. (2008) and we analyzed the models in a similar fashion, more psychometric work should be conducted in the future to address the inconsistencies of the perceived workload construct items. In this replication study, perceived workload is influencing work exhaustion and not turnover intention. Future research should continue to explore these inconsistencies.

In summary, the overall findings from these three studies regarding turnover theory indicate collectively and consistently that role conflict does not influence work exhaustion for IT professionals. However, fairness of rewards does have a direct influence on turnover intention, thus providing partial support for the base model of Moore (2000a). For the four antecedents of work exhaustion, two of the three studies found perceived workload, role ambiguity, and fairness to be significant while only one study found autonomy to be significant. Clearly, there is some overlap of support for the antecedents of work exhaustion; however, the support is not consistent across all three studies. These findings provide theoretical support to further strengthen the relationship between fairness of rewards and its impact on turnover intention in various contexts and among various samples of IT workers.

4.2 Replication of New Hypotheses

We now present our replication results for the new hypotheses Rutner et al. 2008 added to extend Moore's (2000a) model. Hypotheses 1-7 represent Rutner et al.'s extension of the base model. We replicated five of the seven hypotheses from the original study, providing some theoretical support for the extended model. The first two hypotheses test the impact of emotional dissonance on work exhaustion (H1) and job satisfaction (H2), which is the primary focus of the paper. Our results for H1 were inconsistent with the original study as we did not have support for this relationship. One reason for this result might be attributed to the way in which positive emotional dissonance and negative emotional dissonance were operationalized. Rutner et al. used separate scales to measure positive emotional dissonance and negative emotional dissonance. However, the items for both constructs loaded on one factor and showed conflicting results assessing the constructs' discriminant validity. To deal with this issue, Rutner et al. used a second order factor called emotional dissonance with positive emotional dissonance and negative emotional dissonance serving as the first order factor. Emotional dissonance was then used as an antecedent of work exhaustion and job satisfaction.

We also used emotional dissonance as a second order factor. Rutner et al. found that emotional dissonance significantly influenced work exhaustion but not job satisfaction. In this replication, emotional dissonance did not influence either work exhaustion or job satisfaction. Our replication had the same issues with the positive and negative emotional dissonance items loading on one factor, as in the original study. The way in which emotional dissonance is measured is problematic in the items for negative emotional dissonance

and positive emotional dissonance were not able to be used as separate constructs. Thus, neither the original study, nor the replication study could determine the direct impact of negative and positive dissonance separately. This finding suggests that future studies investigating emotional dissonance might consider different measures for emotional dissonance.

As Rutner et al. points out, there are numerous measures for emotional dissonance. More specifically they state, "...our measure only captures surface acting" (Rutner et al., 2008, p. 643). Since we used the same measures for both PED and NED, we acknowledge that the deep acting aspect of emotional dissonance was not captured. Subsequent research by Rutner et al. (2011) and Rutner et al. (2015) did explore the emotional labor component by capturing both surface and deep acting. Recent studies utilizing emotional dissonance have used a variety of scales to measure emotional dissonance. Numerous studies have had success operationalizing emotional dissonance by measuring surface acting and deep acting constructs (Kenworthy et al., 2014). Other studies have successfully used 5-item emotional dissonance scales such as the Frankfurt Emotion Work Scales (Diestel & Schmidt, 2010) or the Chinese Emotional Dissonance Scale (Cheung & Cheung, 2013), which has been widely used in emotional labor studies, especially in Chinese contexts (Yang et al., 2019). However, these scales do not distinguish between positive and negative dissonance. If researchers are focused on assessing the differences in surface and deep acting, we suggest using items from (Grandey, 2003) which have been used extensively in emotional labor research (Diefendorff et al., 2005; Rutner et al., 2015).

Another finding that was different in this study was that autonomy was positively related to job satisfaction (H6). The mean for job satisfaction was similar in the two studies (5.1 versus 5.165) but the variance was slightly larger in the current study (1.385 versus 1.16). Furthermore, the correlation between autonomy and job satisfaction was significant in this study and not significant in the prior study. As previously mentioned, our sample included a higher number of programmers/analysts who may have more autonomy given the type of job they inhabit. Additionally, an individuals' perception of autonomy may be impacted by their use of information systems (Mazmanian et al., 2013). Future research on autonomy and job satisfaction, especially in the IT field, might explore how information systems facilitate autonomy. Autonomy continues to be a significant construct in information systems literature (Weber et al., 2020) and this research supports the notion that IT workers' sense of autonomy is pivotal to job satisfaction.

The remaining hypotheses (H3, H4, H5, and H7) were replicated suggesting that work exhaustion, role ambiguity, and autonomy are all strong predictors of job satisfaction. The construct of job satisfaction was added to Moore's base model "as an additional way to anchor emotional dissonance in the IT turnover literature" (Rutner et al. 2008, p. 638). Although we did not find support for emotional dissonance predicting job satisfaction, this relationship is established in prior literature and may have a different outcome if using a different scale for emotional dissonance than the one used in this study. Concerning the hypotheses where job satisfaction is the dependent variable, the measurement and contextual inconsistencies found in this study highlight the generalizable (e.g., work exhaustion to job satisfaction) and non-generalizable (e.g., role ambiguity to job satisfaction) relationships in Rutner et al.'s extension of Moore's (2000a) base model. Finally, our results indicate job satisfaction is a significant predictor of turnover intention.

4.3 Control variables

In analyzing the impact of the two control variables (negative affectivity and organizational tenure), Rutner et al. (2008) found three significant relationships where we found only one. Negative affectivity was a significant influencer on work exhaustion in both studies, but it did not influence turnover intention in this study. Additionally, organizational tenure was not a significant influencer of job satisfaction in this study.

5 Conclusion

Although we were able to partially replicate the original study, we were not able to replicate the two hypotheses that are the primary focus of the original work, which is the impact of emotional dissonance on job satisfaction and work exhaustion. However, we were able to replicate the majority of hypotheses put forth in the original paper, thereby strengthening the theories in information systems exploring job satisfaction and turnover intention among IT workers. In addition, our sample size was larger and from a different industry than the original study which add further support for the relationships regarding job satisfaction and IT turnover among IT workers. Despite our findings regarding emotional dissonance, we believe the construct offers an important and interesting area of research for the information systems field.

We do suggest that researchers utilizing emotional dissonance carefully consider the measurement scales used to capture this construct.

Future research might consider new stressors or issues facing IT workers that could be investigated with emotional dissonance. For example, an increasing number of IT workers have adopted the “digital nomads” movement so that they can have freedom and flexibility not available to them in traditional work environments (Nash et al., 2018). However, digital nomads may encounter situations that require deep and surface acting and experience emotional dissonance in different ways than traditional IT workers. Another construct that might provide additional insight is the influence of boundary spanning activities (Igarria & Siegel, 1992) in conjunction with emotional dissonance on job satisfaction and/or turnover. Thus, emotional dissonance is a relevant topic of interest for information systems researchers.

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Appendix: Survey Items

Below we include all survey items, the source of the scale items used, and the item questions.

Table A1: Survey Items			
Description	Source	Variable	Question
Negative Emotional Dissonance	Rutner et al. 2008	ELabor_1	To be effective in my job, I must try to be sympathetic with customers even when I am not.
		ELabor_2	To be effective in my job, I must not demonstrate how agitated I may feel with customers.
		ELabor_3	In doing my job, I must portray myself as interested in the customers' frustrations even when I don't really care.
		ELabor_4	To do my job well, I must pretend not to be irritated at customers even when I may feel that way.
		ELabor_5	To do my job effectively, I must act as if I empathize with the customer despite my actual lack of concern.
Positive Emotional Dissonance	Rutner et al. 2008	ELabor_6	To do my job effectively, I must hide any anger I may feel with customers.
		ELabor_7	To carry out my job, I must try to pretend I am not annoyed with customers when I really am.
		ELabor_8	I must act like I care about customers' concerns even when I find it hard to be interested.
		ELabor_9	In interacting with customers, I must suppress irritation I may feel.
Perceived Workload	Moore (2000a)	Workload_1	I feel busy or rushed.
		Workload_2	I feel pressured.
Role Ambiguity	Moore (2000a)	Rambig_1	I know exactly what is expected of me.
		Rambig_2	I have a defined role in my work group.
		Rambig_3	Each assignment has a clear objective.
Role Conflict	Moore (2000a)	Rconflict_1	I do things that are apt to be accepted by one person and not accepted by others.
		Rconflict_2	I sometimes have to 'buck' a rule or policy in order to carry out an assignment.
		Rconflict_3	I frequently receive incompatible requests from two or more parties.
		Rconflict_4	I often perform work for two or more parties who operate quite differently.
		Rconflict_5	In my work, I have to try to balance two or more conflicting preferences.
Autonomy	McKnight 1997	Autonomy_1	In my work, I usually do not have to refer matters to my direct supervisor for a final decision.
		Autonomy_2	Usually, my direct supervisor does not have to approve my decisions before I can take action.
		Autonomy_3	Rather than asking my direct supervisor, I usually make my own decisions about what to do on my job.
		Autonomy_4	I can usually do what I want on this job without consulting my direct supervisor.

Table A1 (Continued): Survey Items			
Description	Source	Variable	Question
Fairness of Rewards	McKnight et al. 2009	Fairness_1	I think my level of pay is fair.
		Fairness_2	Overall, the rewards I receive here are quite fair.
		Fairness_3	No matter what other group members do on joint assignments, I believe my efforts will be rewarded fairly.
		Fairness_4	I'm comfortable that I would never be penalized because a co-worker failed to do his/her part of a joint assignment.
		Fairness_5	Sometimes I fear that my performance evaluation will unfairly suffer because a co-worker didn't do her/his part.
Work Exhaustion	Moore (2000a)	Exhaust_1	I feel emotionally drained from my work.
		Exhaust_2	I feel used up at the end of the work day.
		Exhaust_3	I feel fatigued when I get up in the morning and have to face another day on the job.
		Exhaust_4	I feel burned out from my work.
Turnover Intention	Moore (2000a)	Turnover_1	I will be with this company five years from now.
		Turnover_2	I will probably look for a job at a different company in the next year.
		Turnover_3	How likely is it that you will be working at the same company this time next year?
		Turnover_4	How likely is it that you will take steps during the next year to secure a job at a different company?
Job Satisfaction	McKnight 1997	JobSat_1	Generally speaking, I feel satisfied with this job.
		JobSat_2	Overall, I feel satisfied with the kind of work I do in this job.
		JobSat_3	In general, I am content with my position.
Negative Affectivity	Moore (2000a)	Right now, to what extent to you feel:	
		NegAff_1	Scared
		NegAff_2	Afraid
		NegAff_3	Upset
		NegAff_4	Distressed
		NegAff_5	Jittery
		NegAff_6	Nervous
		NegAff_7	Ashamed
		NegAff_8	Guilty
		NegAff_9	Irritable
NegAff_10	Hostile		

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