



Mitigating Turnover Intentions: Are All IT Workers Warriors?

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Abstract:

The current study is a conceptual replication of Ahuja, Chudoba, Kacmar, McKnight, and George's (2007) model of the proximal and distal antecedents of the turnover intentions of information technology (IT) professionals. Whereas the original study focused on 'IT Road Warriors', those that spend most of their work life away from home; we applied the original study's hypotheses and model to the more general context of IT professionals. Results from a sample of 301 IT professionals housed in an on-site internal IT department were mixed. Consistent with Ahuja et al. (2007), the relationships between exhaustion, organizational commitment, and turnover intention were supported. Also, the influence of work-family conflict on exhaustion, but not organizational commitment, was confirmed. In contrast to Ahuja et al. (2007), the replication study found that fairness of rewards was much more important to in-house IT professionals than autonomy. Future research should investigate the boundaries of Ahuja et al.'s (2007) model of turnover intention for various sub-populations within the IT profession, such as system administrators, contract workers, and perhaps CIOs. Researchers may also want to explore factors outside the current model that may impact the turnover intention of IT professionals such as organizational and professional identity and boundary spanning.

Keywords: Turnover Intention, Replication, IT Personnel

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1 Introduction

The turnover of information technology (IT) professionals continues to create challenges for employers not only in terms of the staffing costs, but also workforce stability (Lo, 2014; Luftman & Kempaiah, 2007; Purohit, 2016). Identifying the key factors that contribute to the turnover intention (TOI) of IT professionals has been studied in various contexts for over two decades. In general, researchers have sought to identify the salient antecedents (e.g., Igarria & Greenhaus, 1992) in order to potentially inform practitioners on best practices to retain valuable knowledge workers while increasing academic understanding of this phenomenon. A sample of the most common constructs identified as relevant antecedents include work-family conflict (e.g., Adams, King, & King, 1996), perceived work overload (e.g., Moore, 2000), work exhaustion (e.g., Moore, 2000), job autonomy (e.g., Beehr, 1976), organizational commitment (e.g., Tsui, Pearce, Porter, & Tripoli, 1997), fairness of rewards (e.g., Cropanzano, Rupp, & Byrne, 2003), and other job characteristics such as task fit (e.g., Hackman & Oldham, 1975).

In their original study, Ahuja, Chudoba, Kacmar, McKnight, and George (2007) focused on the turnover intentions of IT Road Warriors, those IT workers who are predominantly performing their tasks at client firms that are often located out of town (Madden, 1995). Extending Moore's (2000) research on work exhaustion and TOI, Ahuja et al.'s (2007) findings identified the importance of exploring TOI within the context and role

of IT Road Warriors. This research demonstrated that IT employees' work setting and predominant task structure significantly influences both the direct and mediated effects of key antecedents on TOI (see Figure 1).

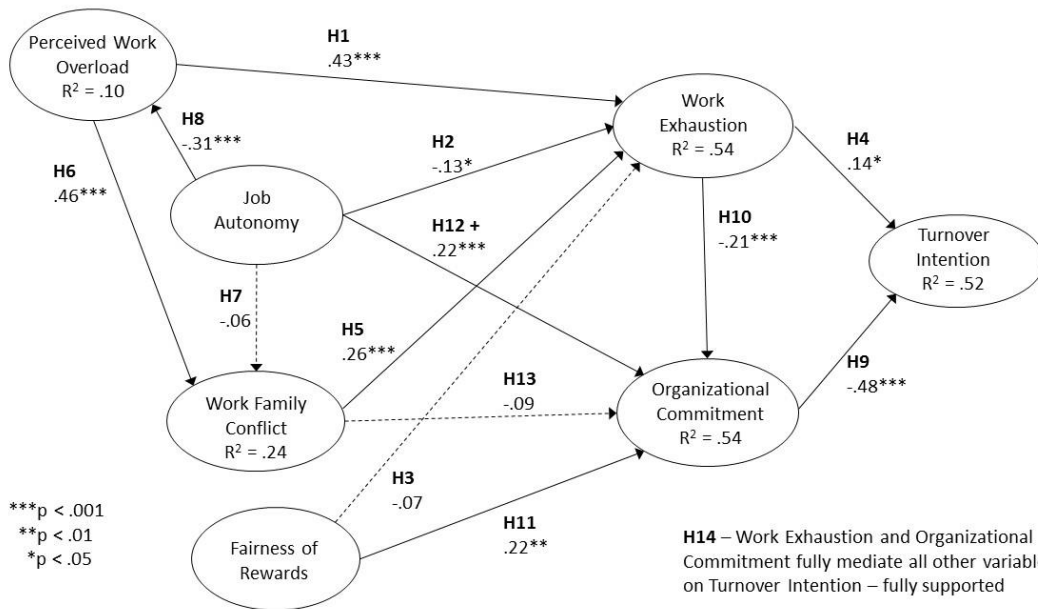


Figure 1. Research Hypotheses and Results from Original Study (Ahuja et al., 2007)

The original study provided meaningful contributions for practitioners and researchers; the citation count reported via the Web of Science database, as of December 31, 2017, was just over 120. For organizations, the findings indicated that supervisors should be cognizant of challenges posed by the physical separation from the parent company and from the individual's social / family network (i.e. IT Road Warriors spend four days at the client location and three days at home). Specifically, work family conflict (WFC) was shown to influence work exhaustion for IT Road Warriors and, indirectly, organizational commitment (Ahuja et al., 2007). These IT workers are immersed in the clients' physical location and work independently with little direct supervision. While the preponderance of hypotheses were supported, the unsupported hypotheses in the original study were those that involved job autonomy, WFC, and fairness of rewards as dependent variables. This replication study is interested in testing whether or not similar results might exist for in-house IT professionals (i.e., IT professionals who support clients and projects within a firm).

Turnover continues to be a major concern for companies with substantial IT requirements. Both Moore (2000) and Ahuja et al. (2007) call for additional research on TOI, and suggest a focus on investigating this phenomenon in a variety of IT work settings. We have performed a conceptual replication of Ahuja et al.'s (2007) IT Road Warrior study, analyzing the TOI of in-house IT professionals at a large food-processing company in the Midwestern United States. We wanted to test the boundaries of the model through the evaluation of the antecedents of TOI in a completely different context than provided in the original study. We have included the same constructs in the replication as found in the original study (Figure 1), and adopted identical hypotheses. As a conceptual replication, we used different measures for key variables to explore any idiosyncratic features of the original item wording, and test the strength of the key relationships within a different context.

2 Method

Similar to the original study, we focused on IT employees at a large company. Our sample came from an organization in the food processing industry, with over 100,000 employees worldwide. Of these, approximately 9,000 work at the corporate headquarters located in the Midwestern United States where the main corpus of IT employees is located. In contrast to the original study in which the respondents were all

Road Warriors (work from home or at client sites), 79% of the 554 IT employees in the participating company were located at the corporate headquarters, 21% were located at another corporate facility and 100% of the IT employees served internal clients (i.e., other functional areas).

An initial email containing the survey instrument was sent to all 554 employees from one of the researchers, and the employees were guaranteed anonymity. Two follow-up emails were sent over the next 2 weeks to encourage participation. An analysis of 1) late responder surveys versus early responder surveys and 2) complete surveys versus incomplete surveys was completed to determine if nonresponse bias existed; none was found. Of the 554 individuals contacted, 362 completed the instrument for a 65% response rate. Demographics of the sample are shown in Table 1. Of the 362 completed surveys, 60 were removed because of incomplete data, and one outlier (received 15 raises in three years) leaving a total of 301 usable responses. Of the respondents, 50% were male with 10% indicating female and the remainder chose not to respond to the gender question. The participants had a mean organizational tenure of 9.4 years, and job tenure of 3.1 years. Unlike the original study, we did not collect data on respondent age because previous research has asserted that age and organizational tenure are highly correlated (Lin & Hsieh, 2002; Ng & Feldman, 2010) and thus redundant. We also did not collect marital status because it was non-significant in the original study and we felt not salient for the replication study sample.

Total Responses: 301		
Gender	Male	49.8%
	Female	10.0%
	Unidentified	40.2%
Tenure at Company	< 2 years	17.9%
	2 - 5 years	16.3%
	6 - 10 years	24.9%
	11-15 years	20.3%
	> 15 years	20.6%
Tenure in Job	< 1 year	25.6%
	1-2 years	28.9%
	3 - 5 years	23.3%
	> 5 years	16.9%
	Undefined	5.3%
Number of Raises	0	31.9%
	1	26.6%
	2	16.3%
	3	12.6%
	>3	12.5%
Income	< = \$54,999	15.3%
	\$55,000-\$69,999	13.6%
	\$70,000-\$84,999	23.3%
	\$85,000-\$99,999	26.2%
	> = \$100,000	18.6%
	Unidentified	3.0%

The questionnaire items were taken from existing scales and are listed in Appendix A (See Table A1). Table 2 shows the construct measures used in the original study and this replication, both those that were changed and those that were retained. Because fairness of rewards, job autonomy, and work-family conflict are less frequently studied concepts in the IT turnover intention literature, we decided to use different measures to ensure there was nothing idiosyncratic about the items. With regard to fairness of rewards, the replication study used McKnight, Phillips, and Hardgrave's (2009) measure of structural fairness, which included two items from Moore (2000) and three items developed to capture the team-oriented nature of IT work; whereas the original study's measure was more focused on process and procedural equity. With regard to job autonomy, while the replication study did not use the identical measure as Moore (2000), the same conceptualization of autonomy as "input in decision making" was utilized; Ahuja et al. (2007) used a measure of job autonomy with more of a control focus to reflect "how, when and what work is done" (p. 8). For work-family conflict, we assert that the measures from the two studies tap into the same concept, but have slightly different wording in their items. Both measures assessed how one's job causes stress/strife outside the work environment (home and family). Finally, while the authors of the two organizational commitment scales are different, there is a significant amount of overlap in the items. The replication study included four of the five items that were included in the original study. In addition to the four 'common' organizational commitment items, the replication study also included four items focused on positive speech to others about the organization.

Measure	Original Study	Replication Study
Job Autonomy	Beehr, 1976 (4 items)	McKnight et al., 2009 (4 items)
Work-Family Conflict	Adams et al., 1996 (5 items)	Thomas & Ganster, 1995 (8 items)
Organizational Commitment	Tsui et al., 1997 (5 items)	Wayne, Shore, & Liden, 1997 (7 items)
Work Exhaustion	Moore, 2000 (4 items)	Moore, 2000 (4 items)
Perceived Work Overload	Moore, 2000 (4 items)	Moore, 2000 (2 items)
Fairness of Rewards	Developed (4 items)	McKnight et al., 2009 (5 items)
Turnover Intention	Moore, 2000 (4 items)	Moore, 2000 (4 items)

3 Results

3.1 Methodological Differences

While the replication study was conducted as a conceptual replication of the original study, it is important to note that there were a few differences between the methods employed in the two studies. For example, in the original study the authors used reverse-scored items and statistical tests in LISREL (Widaman, 1985; Williams, Cote, & Buckley, 1989) to measure common method variance; the replication study used reverse-scored items, statistical tests in SPSS and PLS (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), and took an additional step in the design of the survey by adding a marker variable to address common method bias (Lindell & Whitney, 2001). In addition, in the original study the item OrgCom1 was removed due to low loadings; whereas in the replication study items OrgCom1, OrgCom2, Fairness5, and WFC1 were removed. Finally, while both studies used partial least squares for data analysis, the original study used 100 resamples in the bootstrapping process, and the replication study used 5,000 resamples. The details of the data analysis for the replication study follow.

3.2 Response Bias and Common Method Variance Testing

Response bias was assessed using the Armstrong and Overton (1977) procedure. The sample was divided into three segments: early, middle and late responders. An analysis of variance comparing the early and

late responders indicated a nonsignificant difference for all of the demographic variables and the dependent variable (TOI).

To address potential common-method bias in the survey design, we included reverse-scored items to reduce compliance problems (Lindell & Whitney, 2001). We assessed the extent of common-method variance (CMV) in the data with three tests. First, we performed Harmon's one factor test (Podsakoff & Organ, 1986) by including all of the items in a principal components factor analysis. The results revealed seven factors, with no single factor accounting for a majority of variance (i.e. the largest factor variance was 30.4%), suggesting no substantial CMV among the scales. We then followed the procedure recommended by Podsakoff, MacKenzie, Lee, and Podsakoff (2003), which specifies that, in addition to theoretical constructs, a common-method construct (that includes all the indicators) be used in the empirical research model. We assessed the variance explained by the common-method construct relative to the variance explained by the substantive constructs. As shown in Appendix A, Table A2, the average variance explained by the substantive constructs was 0.58, while the average variance explained by the common-method construct was 0.05. Finally, we used a theoretically unrelated construct (social need strength) as a marker variable (Lindell & Whitney, 2001). The largest shared variance (work exhaustion and social need strength) was 0.023. Taken together, these analyses indicate that common-method bias did not significantly affect our results. Partial least squares (PLS) was used for data analysis using a two-step approach. First, the measurement model was evaluated to assess the validity and reliability of the measures, then the structural model was evaluated to assess the hypotheses.

Table 3. Descriptives, Correlations, and Measurement Model Statistics										
Variable	Mean	Std	ICR	1	2	3	4	5	6	7
1. Work-Family Conflict	3.51	1.43	.95	.73						
2. Job Autonomy	4.97	1.31	.93	-.03	.78					
3. Work Overload	4.55	1.52	.94	.57**	-.04	.89				
4. Work Exhaustion	3.73	1.58	.94	.60**	-.17**	.60**	.78			
5. Organizational Commitment	4.94	1.27	.94	-.30**	.05	-.16**	-.34**	.75		
6. Fairness of Rewards	4.53	1.32	.87	-.38**	.16**	-.28**	-.38**	.33**	.63	
7. Turnover Intention	2.83	1.44	.93	.20**	-.12*	.14*	.34**	-.53**	-.32**	.78
Average variance extracted (AVE) is in bold on the diagonal										
Internal composite reliability (ICR)										
Significance of correlations: **p <.01, *p<.05										

(Table continued on next page)

Table 3. Descriptives, Correlations, and Measurement Model Statistics - Continued								
Variable	Mean	Std	ICR	8	9	10	11	12
1. Work-Family Conflict	3.51	1.43	.95	.13*	-.01	-.01	.06	.22**
2. Job Autonomy	4.97	1.31	.93	.09	.03	.01	.05	.21**
3. Work Overload	4.55	1.52	.94	.06	.02	-.01	-.04	.13*
4. Work Exhaustion	3.73	1.58	.94	.06	.02	-.02	.06	.09
5. Organizational Commitment	4.94	1.27	.94	-.06	-.06	-.01	.06	-.09
6. Fairness of Rewards	4.53	1.32	.87	-.05	-.03	.03	-.01	.02
7. Turnover Intention	2.83	1.44	.93	-.07	-.04	-.01	-.11	-.02
8. Organizational Tenure	9.37	7.35	1.00	1.00	.41**	.13*	.01	.46**
9. Job Tenure	3.13	4.44	1.00		1.00	.01	-.15**	.09
10. Gender	n/a	n/a	1.00			1.00	.09	.15**
11. Number of Raises	1.45	1.87	1.00				1.00	.08
12. Salary	n/a	n/a	1.00					1.00
Average variance extracted (AVE) is in bold on the diagonal								
Internal composite reliability (ICR)								
Significance of correlations: **p <.01, *p<.05								

3.3 Measurement Model

Means, standard deviations, reliability measures, average variance extracted (AVE) and correlations for the variables are shown in Table 3. A confirmatory factor analysis was conducted (see Table 4). Due to low factor loadings two items were dropped (Fairness5, WFC1) and two items were dropped because they loaded on a separate factor (OrgCom1, OrgCom2). The lowest reliability in Table 3 is 0.87 (fairness of rewards), which is well above the accepted level of 0.70 (Fornell & Larcker, 1981). For convergent validity, we note that the AVE's were all above 0.50 (Chin, 1998) with the lowest AVE of 0.63 (fairness of rewards), indicating that the items for each measure did converge.

Discriminant validity was assessed using the Fornell and Larcker (1981) test. Each latent variable correlation should be less than the square root of the AVE of that variable. Not only did our data meet this requirement, it also passed the more stringent test that the correlation be less than the AVE itself as Table 3 shows (See Appendix A, Tables A3 and A4 for the comparative descriptive statistics). It is interesting to note that there were significant differences in the means of the two samples on five of the constructs: work-family conflict, work overload, organizational commitment, organizational tenure, and number of raises. The difference in the organizational commitment means (5.29 - original, 4.94 - replication) indicates that the Road Warriors had more organizational commitment than the in-house IT personnel and over three times the number of raises as the in-house IT personnel (4.69 - original, 1.45 - replication). In contrast, the years with the organization was significantly higher for in-house IT personnel (1.8 - original, 9.37 - replication), but the TOI of both groups was not statistically different (2.55 - original, 2.83 - replication). In summary, the measures demonstrated adequate construct validity and thus we proceed to the structural model.

3.4 Structural Model

Figure 2 graphically represents the results of the structural model test. We used the PLS bootstrapping technique with 5,000 resamples and 300 cases (Chin, 2001). Consistent with the original study, control variables were entered as predictors of turnover intention, organizational commitment, and work exhaustion. The variables in the model explained 33% of the variance in work-family conflict with perceived work overload as the main driver. The variables explained 51% of the variance in work exhaustion, 20% of the

variance in organizational commitment, and 34% of the variance in turnover intention. Among the control variables, the only significant influence was from raises to turnover intention ($\beta = -.10$, $p < .05$). Overall, we found support for the proposed model within this context. Hypotheses 1 - 6, 9, 10, and 11 were all supported.

	Component						
	1	2	3	4	5	6	7
Turnover_1R				.736			
Turnover_2				.875			
Turnover_3R				.827			
Turnover_4				.883			
Exhaust_1		.814					
Exhaust_2		.853					
Exhaust_3		.728					
Exhaust_4		.693					
Fairness_1							.883
Fairness_2							.897
Fairness_3							.708
Fairness_4							
Workload_1						.671	
Workload_2						.680	
Autonomy_1					.907		
Autonomy_2					.913		
Autonomy_3					.892		
Autonomy_4					.856		
WFC_2	.629						
WFC_3	.819						
WFC_4	.833						
WFC_5	.777						
WFC_6	.796						
WFC_7	.847						
WFC_8	.842						
OrgCom_3			.786				
OrgCom_4			.888				
OrgCom_5			.857				
OrgCom_6			.794				
OrgCom_7			.754				

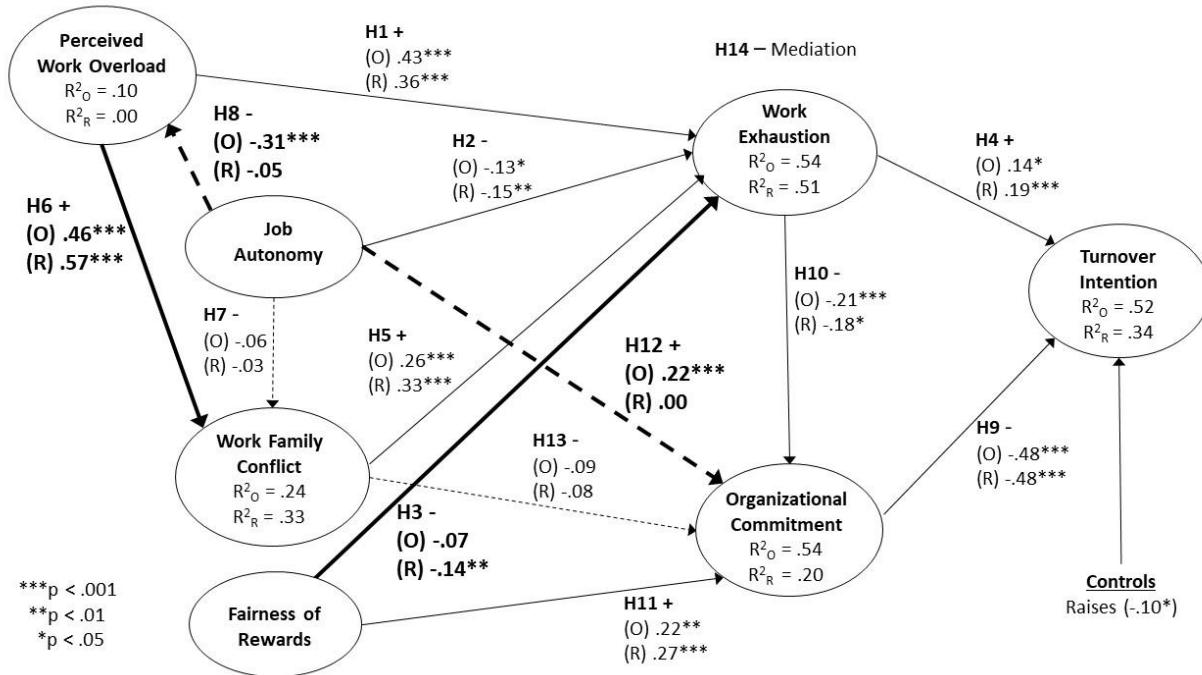


Figure 2. Hypotheses and Results of the Original Study (O) and Replication Study (R)

Notes: Bold lines and font highlight differences between the findings of the original and replication studies.

Dashed lines are non-significant relationships in replication study. Small dashed lines indicate consistent results for the original and replication studies while large dashed lines indicate different results between the two.

Hypotheses 7, 8, 12 and 13 were not supported (indicated with dashed lines in Figure 2). Consistent with the original study, job autonomy did not significantly influence work-family conflict (H7 ns). The variables in the model explained 0% of the variance in perceived work overload, which is consistent with the fact that there was only one predictor, job autonomy, which did not significantly influence perceived work overload (H8 ns). Job autonomy also did not influence organizational commitment for our replication (H12 ns).

To confirm mediation by organizational commitment and work exhaustion (H14), we added direct paths to TOI from job autonomy, work-family conflict, work overload, and fairness of rewards, and re-ran the analysis. Fairness of rewards was the only additional significant predictor of TOI ($\beta = -0.139$, $p < .05$). We then used the Sobel z-test (Sobel, 1982) to examine the significance of the direct and indirect effects following Cohen (1988) and Chin, Marcolin and Newsted (2003). Work exhaustion mediated the effects of perceived work overload (Sobel $Z = 2.59$, $p < 0.01$), work-family conflict (Sobel $Z = 2.54$, $p < 0.05$), and fairness of rewards (Sobel $Z = 2.04$, $p < 0.05$) on TOI. Organizational commitment mediated the effect of fairness of rewards (Sobel $Z = 4.04$, $p < 0.001$) on TOI. Together these results indicate full mediation of perceived work overload and work-family conflict through work exhaustion, partial mediation of fairness of rewards through work exhaustion and organizational commitment, and no influence (direct or indirect) of job autonomy on TOI. The results of the hypotheses are summarized in Table 5.

Table 5. Hypotheses Replicated

H#	Hypothesis	Original Result	Replication Result
H1	Perceived work overload will positively influence work exhaustion among IT Road Warriors.	Supported	Supported
H2	Autonomy will negatively influence work exhaustion among IT Road Warriors.	Supported	Supported
H3	Fairness of rewards will negatively influence work exhaustion among IT Road Warriors.	Not Supported	Supported
H4	Work exhaustion will positively influence turnover intention among IT Road Warriors.	Supported	Supported
H5	Work-family conflict will positively influence work exhaustion among IT Road Warriors.	Supported	Supported
H6	Perceived work overload will positively influence work-family conflict among IT Road Warriors.	Supported	Supported
H7	Job autonomy will negatively influence work-family conflict among IT Road Warriors.	Not Supported	Not Supported
H8	Autonomy will negatively influence perceived work overload among IT Road Warriors.	Supported	Not Supported
H9	Organizational commitment will negatively influence turnover intention among IT Road Warriors.	Supported	Supported
H10	Work exhaustion will negatively influence organizational commitment among IT Road Warriors.	Supported	Supported
H11	Fairness of rewards will positively influence organizational commitment among IT Road Warriors.	Supported	Supported
H12	Job autonomy will positively influence organizational commitment among IT Road Warriors.	Supported	Not Supported
H13	Work-family conflict will negatively influence organizational commitment among IT Road Warriors.	Not Supported	Not Supported
H14	Work exhaustion and organizational commitment will fully mediate the effects of job autonomy, perceived work overload, work-family conflict, and fairness of rewards on turnover intention among IT Road Warriors.	Supported	Partially Supported

4 Discussion

Results from the replication study revealed mixed support for the original study's findings. Consistent with Ahuja et al. (2007) the relationships between work exhaustion, organizational commitment, and turnover intention were supported, thus confirming their generalizability. The influence of work-family conflict on work exhaustion but not on organizational commitment was consistent with the relationships found in the original study in both strength and direction. Interestingly, while the influence of the specific antecedents did not follow the same pattern, in both the original and replication studies the amount of variance explained for the work exhaustion construct was similar ($r^2 = .54$ for original and $r^2 = .51$ for replication).

The replication study also revealed a few potentially non-generalizable constructs and relationships. In contrast to the original study, the replication study found that fairness of rewards played a much larger role

in the model for in-house IT professionals than autonomy. Considering the statistical difference between the number of raises in the original study and the replication, this is quite interesting. Those participants in the replication study did not receive as many raises as those in the original study. This may be a potential explanation for why the fairness of rewards was more salient and played a larger role in the replication study than in the original study. In the original study job autonomy significantly influenced perceived work overload ($\beta_o = -.31$ $p < .001$), whereas in the replication study the relationship was non-significant. Additionally, in the original study job autonomy significantly influenced organizational commitment ($\beta_o = .22$ $p < .001$), but in the current study the relationship was non-significant. Taken together, these findings indicate that the only role job autonomy played in the replication study was a small (but significant) negative relationship with work exhaustion. Thus, the profound influence of autonomy within the IT Road Warrior context was not replicable in the in-house IT context. In contrast, in the original study fairness of rewards did not significantly influence work exhaustion, but in the replication study it did ($\beta_o = -.07$ ns versus $\beta_R = -.14$ $p < .01$). Thus, while the influence could not be categorized as strong, for in-house IT professionals perceptions of fairness seem to reduce work exhaustion, but not so for IT Road Warriors.

One explanation for these findings may be that the influence of job autonomy and fairness of rewards are context dependent. Previous research has asserted that autonomy is a job focused characteristic, whereas fairness of rewards is a workplace focused characteristic (McKnight et al., 2009). Our findings seem to support this categorization. Since IT Road Warriors spend the majority of their time at client firms (Madden, 1995), one would expect that job characteristics might have more of an influence on their level of work exhaustion. In the same light, as the in-house IT professionals in this study spend the majority of their time at the corporate headquarters of their employer, one would expect that workplace characteristics might have more of an influence on their level of work exhaustion. 'Embeddedness' is comprised of the forces that keep a person from leaving his or her job/organization/occupation (e.g., Mitchell, Homtom, Lee, Sablyski & Erez, 2001; Yao, Lee, Mitchell, Burton, & Sablynski, 2004). The nature of being a remote worker would emphasize the job tasks and being among others at headquarters would shift the perception of the job as embedded more in the social structure. Future research replicating this model may benefit from the inclusion of a qualitative component to better understand the job and workplace specific factors within the IT field. Interviews or focus groups with IT professionals could assist in teasing out and understanding the role of job-specific versus workplace-specific factors.

From a practitioner perspective, Morganson, Major, Oborn, Verive, and Heelan (2010) suggest that organizations should take action to improve the workplace inclusion of employees who work away from the main office by encouraging social contact with co-workers and work teams to make an effort to meet face-to-face on a regular basis. Within the IT literature, Windeler, Chudoba, and Sundrup (2017) suggest that IT professionals who participate in part-time telework can minimize some of the negative effects of full-time telework. This is particularly valuable for less experienced workers. Managers may need to devote special effort to engage client-based workers as they may benefit from focused work-life balance initiatives, stress management activities, and/or time away from the client location.

Another explanation may be the difference in measurement items used in the two studies. For example, the replication study used a conceptualization of job autonomy as "input in decision making"; whereas the original study used a measure of job autonomy "how, when and what work is done" (p. 8). This may indicate that different facets/dimensions of job autonomy are more or less relevant for different IT populations. Future research might incorporate expanded measures of job autonomy to determine if different dimensions (e.g., method, criteria, or schedule autonomy; Breugh, 1985) are more or less relevant for different job types.

Additionally, in the replication study perceived work overload was less influential on work exhaustion ($\beta_R = .36$ $p < .001$ versus $\beta_o = .43$ $p < .001$), but more influential on work-family conflict than the original study ($\beta_R = .57$ $p < .001$ versus $\beta_o = .46$ $p < .001$). Because the IT employees in this replication study were not IT Road Warriors, the perceived work overload could have been more influential on work-family conflict because they were 'at home' and could have experienced work-family balance issues on a more regular basis. Participation in family commitments would probably not even be a possibility for the IT Road Warriors when they were physically in a different geographic locale. In contrast, in-house IT professionals may face more work-family balance issues as participation in family commitments may be more of a choice.

When considering alternate or flexible work arrangements one can look at modes of work (e.g., mobile, home-based telecommuting, satellite office) as well as scheduling of work (e.g., telework, flex time, part time) (Messenger & Gschwind, 2016). Alternate work arrangements often allow more control over the timing of activities, but the potential expansion and intensification of work hours can also become a source of stress when choices have to be made between tasks and responsibilities that coexist for work and home (Noonan

& Glass, 2012; Golden, 2012; Golden, Veiga, & Simsek, 2006; Tietze & Musson, 2005). In essence, the flexibility may reduce the impact of some stresses, but it may also introduce new ones. Especially in high stress jobs, working from home may increase the permeability of work and personal life domains, thus not allowing workers to mentally or physically escape work (Russell, O'Connell, & McGinnity, 2009).

Family stage has been found to be influential in structuring a teleworkers daily life (Hilbrecht, Shaw, Johnson, & Andrey, 2013). In addition, the highest quality personal/family hours may not always be outside the regular workday. Research has found that employees engaging in flexible work arrangements who perceived greater psychological job control had significantly lower TOI, family-work conflict, and depression (Kossek, Lautsch, & Eaton, 2006). Thus, when considering alternate work arrangements, putting an individual's time to its best use, regardless of the hour, may translate into better work/family balance.

Finally, the amount of variance explained by the antecedents of organizational commitment and turnover intention was significantly lower in the replication study than in the original study (organizational commitment $r^2_R = .20$ and $r^2_O = .54$; TOI $r^2_R = .34$ and $r^2_O = .52$). One likely explanation for this finding may be the lack of direct influence of job autonomy on organizational commitment and the indirect influence of job autonomy on turnover intention in the replication study. While job autonomy played a significant role in the model for IT Road Warriors, its influence appears to be contextual (i.e., moderator). In conjunction with the more limited role of job autonomy for in-house IT professionals, another related explanation may lie in the role of fairness of rewards. Individuals naturally tend to self-evaluate by comparing themselves and their situation to others that they can identify with (Festinger, 1954; Suls & Wheeler, 2000) often using pay or performance as a benchmark for the comparison (e.g., Bloom & Michel, 2002; Chen, Zhang, & Latimer, 2014).

In-house IT employees are often subject to potentially detrimental influences in terms of social comparisons and perceived office politics. For example, in-house IT employees may see their poorer performing colleagues receiving more or larger raises, coveted promotions, or being assigned to better projects. In essence, they perceive that other workers are more successful, or scoring higher on the points of comparison, and the other's success is often attributed to office politics or a lack of managerial awareness. In-house IT employees get to see first-hand how their colleagues perform on a day-to-day basis. If the colleagues that they perceive to be poorly-performing being rewarded, they may perceive it as unfair. As such, their organizational commitment may be less, as their lower perceptions of fairness may directly and indirectly negatively influence organization commitment via increased work exhaustion.

In contrast, the IT Road Warrior could be characterized as a disinterested third party, who sees the dysfunctionality of the individuals and decision-making in the client organization but is not part of it. The IT Road Warrior has been brought into the client organization because of his/her expertise in a specific area (and the organization's lack of expertise in that area), and as such the organization allows the IT Road Warrior the flexibility and autonomy to complete the work as he/she sees fit. The IT Road Warrior assigned to a client organization directly observes the lack of fairness happening in the organization they are engaged with, but is grateful that he/she is not participating in the comparisons and can leave the work environment as soon as the engagement is completed. As such, the organizational commitment of the IT Road Warrior may be greater, as their perceptions of fairness only directly and positively influence organizational commitment.

Finally, it is possible that the influence of constructs outside the scope of the original study, such as the influence of boundary spanning activities or identity, may explain the differences. Previous research has hinted at the positive influence of boundary spanning on commitment (Baroudi, 1985) and the negative influence of boundary spanning on turnover intention (Igbaria & Siegel, 1992). Researchers may find additional variance can be explained by incorporating constructs such as organizational and/or professional identity as recent research has indicated identity may play a role in IT professionals' turnover intentions (e.g., Brooks, Riemenschneider, Hardgrave, & O'Leary-Kelly, 2011).

4.1 Limitations and Future Research

As researchers look to further replicate this model, there are three important limitations that must be noted. First, the replication study was conducted with IT professionals in a single organization. While this approach is consistent with the original study, this may have introduced some systematic bias into the results. Care should be taken in generalizing these results to other in-house IT professionals. Additionally, future research should measure organizations with multiple work arrangements (e.g., home, mobile, and office personnel) to see if the influence of work arrangement characteristics are drowned out by firm specific factors. Our second limitation is the composition of the sample, specifically that 50% of the respondents were male. The

IT field is known to be predominately male (typical gender ratio is approximately 75% male). The uncertainty represented in our gender composition of this sample (i.e., 40% non-response to the gender question) may have affected the results, and care should be taken when generalizing across the IT field. A third limitation is that there may be some degree of variable confounding in the sense that some workers may choose (and others not) whether to engage in alternate work arrangements such that there may be some self-selection that correlates with the antecedents. Future research should capture the level of voluntariness of the participants' work arrangement. Controlling for self-selection bias would be helpful in evaluating the overall impact of alternate work arrangements on IT professionals.

Our limitations notwithstanding, we see three primary avenues for future research that may be fruitful. First, given the disparity in findings between the original study and the replication study, future research should explore the influence of job autonomy and fairness of rewards on turnover intentions in other IT work contexts. For example, this model could be tested across industries, organizations, and employee types (e.g., temporary workers). Second, future research should investigate Ahuja et al.'s (2007) model of turnover intention for various sub-populations within the IT profession, such as system administrators, contract workers, project managers, and perhaps CIOs. By looking at various job functions and contexts, the generalizability of this model and boundary conditions could be further elaborated. Finally, researchers may want to explore additional measures for the constructs within the model such as fairness and autonomy, to either confirm or refute the conceptual boundaries.

5 Conclusion

This research sought to replicate the study presented by Ahuja et al. (2007) on the exhaustion and turnover intention of IT Road Warriors. We largely validated the model proposed in the original study through a conceptual replication, and found support for the relationships between exhaustion, organizational commitment, and turnover intention. The contextual and measurement discrepancies found in the results of the replication study highlights the generalizable (e.g., work exhaustion – turnover intention) and non-generalizable (e.g., job autonomy – organizational commitment) relationships presented in the original study. In contrast to the original study, the replication study found that fairness of rewards was much more important to in-house IT professionals than job autonomy.

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Appendix A: Methodological Details

Table A1. Constructs and Items		
Construct	Variables	Items
Affective Organizational Commitment ^c	OrgCom1*	I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful.
	OrgCom2*	I really care about the fate of this organization.
	OrgCom3	I am extremely glad that I chose this organization for which to work, over other organizations I was considering at the time I joined.
	OrgCom4	I talk up employment in this organization to friends as a great place to work.
	OrgCom5	I am proud to tell others that I work for this organization.
	OrgCom6	I find that my values and this organization's values are very similar.
	OrgCom7	For me this is the best of all possible organizations for which to work.
Autonomy ^c	Aut1	In my work, I usually do not have to refer matters to my direct supervisor for a final decision.
	Aut2	Usually, my direct supervisor does not have to approve my decisions before I can take action.
	Aut3	Rather than asking my direct supervisor, I usually make my own decisions about what to do on my job.
	Aut4	I can usually do what I want on this job without consulting my direct supervisor.
Fairness of Rewards ^c	Fair1	I think my level of pay is fair.
	Fair2	Overall, the rewards I receive here are quite fair.
	Fair3	No matter what other group members do on joint assignments, I believe my efforts will be rewarded fairly.
	Fair4	I'm comfortable that I would never be penalized because a co-worker failed to do his/her part of a joint assignment.
	Fair5*	Sometimes I fear that my performance evaluation will unfairly suffer because a co-worker didn't do her/his part. (R)
* Dropped items		
Scales:		
a 7 pt Likert scale, Very Unlikely-Very Likely		
b 7 pt Likert scale, Never-Daily		
c 7 pt Likert scale, Strongly Disagree-Strongly Agree		
d 7 pt Likert scale, Daily-Once a year or less		

Table A1. Constructs and Items - Continued		
Construct	Variables	Items
Work-family Conflict ^c	WFC1*	My work schedule often conflicts with my family life.
	WFC2	After work, I come home too tired to do some of the things I'd like to do.
	WFC3	On the job I have so much work to do that it takes away from my personal interests.
	WFC4	My family dislikes how often I am preoccupied with my work while I am home.
	WFC5	Because my work is demanding, at times I am irritable at home.
	WFC6	The demands of my job make it difficult to be relaxed all the time at home.
	WFC7	My work takes up time that I'd like to spend with my family.
	WFC8	My job makes it difficult to be the kind of spouse or parent I'd like to be.
Perceived Work Overload ^d	PW1	I feel busy or rushed. (R)
	PW2	I feel pressured. (R)
Turnover Intention ^a	TOI1	I will be with this company five years from now. (R)
	TOI2	I will probably look for a job at a different company in the next year.
	TOI3	How likely is it that you will be working at the same company this time next year? (R)
	TOI4	How likely is it that you will take steps during the next year to secure a job at a different company?
Work Exhaustion ^b	WE1	I feel emotionally drained from my work.
	WE2	I feel used up at the end of the work day.
	WE3	I feel fatigued when I get up in the morning and have to face another day on the job.
	WE4	I feel burned out from my work.
Demographics	D1_Raises	How many base pay increases have you had over the past five years, if any?
	D2_OrgTenure	How long have you worked at this company?
	D3_Income	What is your annual income for this job?
	D5_JobTenure	How long have you had this job?
	D9_Gender	Gender:
	D10_Race	What is your ethnicity/race?

Table A2. Common Method Variance Test					
Construct	Indicator	Substantive Construct Correlation	Substantive Construct Variance Explained	Common-method Factor Correlation	Common-method Variance Explained
Autonomy	AUT1	0.91	0.83	0.06	0.00
	AUT2	0.93	0.86	0.09	0.01
	AUT3	0.66	0.44	0.01	0.00
	AUT4	0.63	0.40	0.02	0.00
Fairness	FAIR1	0.51	0.26	0.12	0.01
	FAIR2	0.65	0.42	0.21	0.04
	FAIR3	0.79	0.62	0.12	0.01
	FAIR4	0.58	0.34	0.31	0.10
Organizational Commitment	ORGCOM3	0.81	0.66	0.26	0.07
	ORGCOM4	0.66	0.44	0.43	0.18
	ORGCOM5	0.76	0.58	0.28	0.08
Perceived Work Overload	PW1	0.88	0.77	0.20	0.04
	PW2	0.91	0.83	0.29	0.08
Turnover Intention	TOI1	0.67	0.45	0.19	0.04
	TOI2	0.84	0.71	0.24	0.06
	TOI3	0.74	0.55	0.17	0.03
	TOI4	0.88	0.77	0.27	0.07
Work Exhaustion	WE1	0.79	0.62	0.10	0.01
	WE2	0.79	0.62	0.19	0.04
	WE3	0.79	0.62	0.16	0.03
	WE4	0.76	0.58	0.17	0.03
Work-Family Conflict	WFC2	0.75	0.56	0.34	0.12
	WFC3	0.72	0.52	0.33	0.11
	WFC4	0.76	0.58	0.11	0.01
	WFC5	0.79	0.62	0.13	0.02
	WFC6	0.71	0.50	0.33	0.11
	WFC7	0.77	0.59	0.10	0.01
AVERAGE			0.58	0.05	

Variable	Original			Replication		
	Mean	Std	ICR	Mean	Std	ICR
1. Work-Family Conflict***	5.04	1.37	0.95	3.51	1.43	0.95
2. Job Autonomy	5.04	1.12	0.87	4.97	1.31	0.93
3. Work Overload***	4.10	1.46	0.94	4.55	1.52	0.94
4. Work Exhaustion	3.59	1.37	0.94	3.73	1.58	0.94
5. Organizational Commitment**	5.29	1.21	0.93	4.94	1.27	0.94
6. Fairness of Rewards	4.36	1.30	0.95	4.53	1.32	0.87
7. Turnover Intention	2.55	1.35	0.95	2.83	1.44	0.93
8. Organizational Tenure***	1.80	1.74	1.00	9.37	7.35	1.00
9. Job Tenure	n/a	n/a	1.00	3.13	4.44	1.00
10. Gender	n/a	n/a	1.00	n/a	n/a	1.00
11. Number of Raises***	4.69	1.86	1.00	1.45	1.87	1.00

Significant differences between the original study and replication study noted: *** p < 0.001 ** p < 0.01

Variable	AVE ^o	AVE ^R	1	2	3	4	5	6	7
1. Work-Family Conflict	.79	.73	-	-.20**	.48**	.52**	-.32**	-.32**	.22**
2. Job Autonomy	.63	.78	-.03	-	-.31**	-.34**	.55**	.58**	-.32**
3. Work Overload	.79	.89	.57**	-.04	-	.65**	-.41**	-.33**	.25**
4. Work Exhaustion	.80	.78	.60**	-.17**	.60**	-	-.49**	-.40**	.42**
5. Organizational Commitment	.76	.75	-.30**	.05	-.16**	-.34**	-	.60**	-.67**
6. Fairness of Rewards	.80	.63	-.38**	.16**	-.28**	-.38**	.33**	-	-.38**
7. Turnover Intention	.82	.78	.20**	-.12*	.14*	.34**	-.53**	-.32**	-

AVE^o is for the original study; AVE^R is for the replication study.
above diagonal = original study; below diagonal = replication study

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