

Structural Validity and Generalisability of a Referent Cognitions Model of Turnover Intentions

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A model proposed and empirically tested by Aquino, Griffeth, Allen, and Hom (1997) using employees of a hospital in the northeastern United States was replicated in samples of Korean factory workers from two divisions of a large organisation. Results in both samples suggested that the relationships among model variables and relationships with withdrawal cognitions replicated quite closely. Results also suggested that the way people are treated in an organisation by their supervisors exerts a powerful effect on their turnover-related responses. Most importantly, the results of this study in combination with the earlier results from Aquino et al. (1997) highlight the impact of employee expectations of future job advancement on turnover-related responses. Employees who perceive that their present situation will improve

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are more satisfied with their present outcomes and their supervisors. They are also less likely to consider quitting even when being unsatisfied with their present situation.

Un modèle proposé et testé empiriquement par Aquino, Griffeth, Allen, and Hom (1997) sur des employés d'un hôpital du nord des Etats-Unis a été réutilisé auprès de plusieurs échantillons de travailleurs d'une usine coréenne appartenant à deux divisions d'une grande organisation. Les résultats sur les deux échantillons montrent que les relations entre les variables du modèle et les relations avec les cognitions défailantes reproduisent de très près ceux du modèle original. Les résultats montrent aussi que la façon dont les salariés sont traités dans une organisation par leurs supérieurs a de fortes retombées sur leurs réponses concernant les démissions. Plus important encore, les résultats de cette étude en concordance avec ceux initiaux obtenus par Aquino et al. (1997), soulignent l'impact des attentes des employés à propos de leur avancement dans leur futur emploi sur leurs réponses concernant les démissions. Les employés qui perçoivent que leur situation présente va s'améliorer sont plus satisfaits de leur rémunération présente et de leurs supérieurs. Ils sont aussi moins enclins à envisager de démissionner même s'ils sont insatisfaits de leur situation présente.

INTRODUCTION

Turnover research in the early 1990s was characterised as being in need of rejuvenation (O'Reilly, 1991). Since that time several theoretical advances have been made, e.g. the unfolding model with an emphasis on shocks as an impetus to quitting (Lee & Mitchell, 1994), a dynamic search process model (Steel, 2002), development of the embeddedness construct focusing on why employees stay (Mitchell, Holtom, Lee, Sablinski, & Erez, 2001), and an adaptation of Referent Cognitions Theory (RCT) that focuses on justice and fairness (Aquino, Griffeth, Allen, & Hom, 1997). Although subsequent research is beginning to establish the robustness and generalisability of some of these advances, little empirical research has investigated the generalisability of Aquino et al.'s (1997) adaptation of RCT, and little empirical research has investigated the cross-cultural generalisability of any of these turnover theories.

We believe a replication of Aquino et al.'s (1997) test in a non-Western sample is important for at least two reasons. First, at a conceptual level, this model enriches turnover research and theory by incorporating organisational constructs that have historically been ignored by contemporary models. Justice constructs are ideally suited for this type of theoretical integration because turnover models remain surprisingly simplistic and incomplete in their descriptions of how justice concerns affect quits. Although some turnover models and research suggest that perceived inequity is related to quits (e.g. R. Griffeth & Gaertner, 2001; R.W. Griffeth, Vecchio, & Logan, 1989;

Mobley, 1977; Price & Mueller, 1986), they largely ignore the effects of other justice constructs such as procedural (Lind & Tyler, 1988) and interactional justice (Bies & Moag, 1986). The Aquino et al. (1997) model filled this void in the turnover literature by developing and testing a model based on Referent Cognitions Theory (RCT; Folger, 1987; Cropanzano & Folger, 1989). They found empirical support for a model relating RCT constructs to the turnover process.

Second, most turnover theories have been developed by US-based researchers and tested in US contexts. It is important to investigate the extent to which these models hold in different contexts and cultures. The majority of working people are employed in non-Western cultures, and many of these labor markets are experiencing greater individual mobility as Western norms and business models expand to industrialised nations. Further, many organisations are becoming increasingly multinational, with operations in and employees from many different cultural backgrounds. It is particularly appropriate to address Aquino et al.'s (1997) model because it integrates constructs related to interpersonal relationships in the workplace, and it may be that such concerns are even more important in more collectivist cultures.

Therefore, we test the Aquino et al. (1997) RCT model of turnover in two samples of South Korean employees. We use this test to assess the nomological validity and generalisability of the turnover model that was supported by their data. We also expect that the present study will provide insights into traditional and contemporary turnover theory and research. Further, although this is not a cross-cultural study that allows us to directly compare results across multiple cultures, this replication in a South Korean sample may provide some additional insights into the generalisability of this model to a very different context. In the following sections, we review the constructs and theoretical linkages in Aquino et al.'s (1997) model. We then test their model, compare our results to theirs, and discuss the theoretical interpretations, implications, and limitations of the findings.

THEORETICAL BACKGROUND

RCT (Folger, 1987; Cropanzano & Folger, 1989) unites procedural and distributive justice concerns to predict when perceived injustice leads to dissatisfaction. According to the theory, people perform mental simulations involving three distinct constructs: referent cognitions, justifications, and the likelihood of amelioration. Referent cognitions are defined as alternative, imaginable circumstances that differ from one's current circumstances. The theory predicts that people are most likely to be dissatisfied when these imagined alternatives are more attractive than existing reality.

The processes or procedures that produced these outcomes can also be compared to perceived alternatives. The key question underlying this

comparison is whether referent procedures are more justifiable than those that produced the existing outcomes. If a person judges the referent procedure more favorably, then he or she will perceive low justification for existing outcomes. Conversely, a less favorable comparison will be associated with high justification. The theory predicts that a person will be dissatisfied with present outcomes if existing procedures are judged less appropriate than comparative referents. However, when the rationale for outcomes is considered appropriate and justifiable, then dissatisfaction with present outcomes is minimised (Folger & Martin, 1986; Folger, Rosenfield, & Robinson, 1983; Greenberg, 1987).

RCT postulates that outcome satisfaction is also influenced by the probable outcomes one expects to receive in the future. Mental simulations involving future states are represented by the construct of likelihood of amelioration. Likelihood of amelioration is an important component of RCT because the expectation that one's outcomes will improve will, according to the theory, lead people to be less dissatisfied than when they see little chance for improvement (Folger, Rosenfield, Rheume, & Martin, 1983). This prediction is consistent with Martin's (1981) argument that people's responses to felt deprivation are influenced by whether they believe the organisation is amenable to change. If they believe it is, then receiving poor outcomes may not necessarily produce dissatisfaction. Instead, it may motivate constructive attempts at self or organisational improvement (Martin, 1981). However, if employees do not believe the organisation can change, then poor outcomes can produce negative responses. These responses can be directed inwardly as stress and depression or outwardly as absenteeism, poor performance, and resignations.

A Model Linking RCT to Turnover

Aquino et al. (1997) used these RCT predictions to propose that referent outcomes, and the procedural and interpersonal justifications associated with those outcomes, would be significantly related to outcome and supervisory satisfaction. They also theorised that likelihood of amelioration would be related to both facets of satisfaction. In turn, these satisfaction facets were expected to predict withdrawal cognitions, which were then hypothesised to be the sole predictors of voluntary turnover (e.g. Hom & Griffeth, 1995).

Interestingly, injustice perceptions may appear as "shocks to the system" from an unfolding model perspective (Lee & Mitchell, 1994), that is, a particular practice, policy, or procedure may serve as an event that triggers leaving. Since first introduced a variety of organisational variables have been described as shocks, precipitating thoughts of quitting or actual quitting: downsizing (Iverson & Pullman, 2000); sexual harassment (Sims, Drasgow, & Fitzgerald, 2005); and "critical events" (Kammeyer-Mueller,

Wanberg, Glomb, & Ahlburg, 2005). Perhaps similar to shocks, Maertz, Stevens, and Campion (2003) found support for “turnover triggers”. Thus, shocks appear to be almost anything that can stimulate one to think about leaving one’s job (Harman, Lee, Mitchell, Felps, & Owens, in press).

Aquino and his associates (Aquino et al., 1997) tested and found empirical support for their proposed structural model. However, they found even stronger support for an alternative model hypothesised *a priori*. This model differed from the original because it introduced a pathway linking likelihood of amelioration directly to withdrawal cognitions. The rationale for adding this pathway was based on the notion, in part from traditional turnover theory, that if one views one’s situation as likely to improve, then withdrawal cognitions are less likely to emerge even if the present situation is perceived as unsatisfying (Martin, 1981; Mobley, Griffeth, Hand, & Meglino, 1979). This is similar to an expectancy theory perspective. Mobley et al. (1979) proposed that although one’s attraction and expected utility of the present job is low, one remains in the present job because “of expectations that it will facilitate the future attainment of valued outcomes or goals” (p. 518).

The results of Aquino et al.’s (1997) nested comparison tests showed that this alternative model fit the data better than a model specifying no relation between these constructs. The pathways and completely standardised parameter estimates of the alternative model from Aquino et al.’s (1997) study are presented in Figure 1.

That their model tests supported relations among justice and turnover constructs suggests that an integration of RCT into the turnover process offers a promising framework for explaining voluntary withdrawal cognitions. Aquino et al. (1997) concluded that the new model provided a better representation of the turnover process than the one they originally proposed. However, this conclusion remains unsubstantiated because the revised model has not been cross-validated.

In this study, we sought to confirm the predictions of the alternative model by examining the model tested by Aquino et al. (1997) using a new sample. Four differences between their study and ours are worth noting. First, Aquino et al. (1997) used a sample of US employees from a large northeastern hospital; the present study uses two samples of South Korean factory workers in the electronics industry. Second, the two studies use different measures to operationalise model constructs. Third, our model does not predict actual turnover, but withdrawal cognitions. We address this difference more extensively in our results and discussion sections. Lastly, in this study we improve on their methods by examining two samples to conduct a more rigorous test of the model. We used one sample to evaluate the measurement model, structural model, and nested alternative model tests; we then cross-validated the structural model and nested alternative model tests in a second sample from a different division of the organisation. In contrast, Aquino et al.

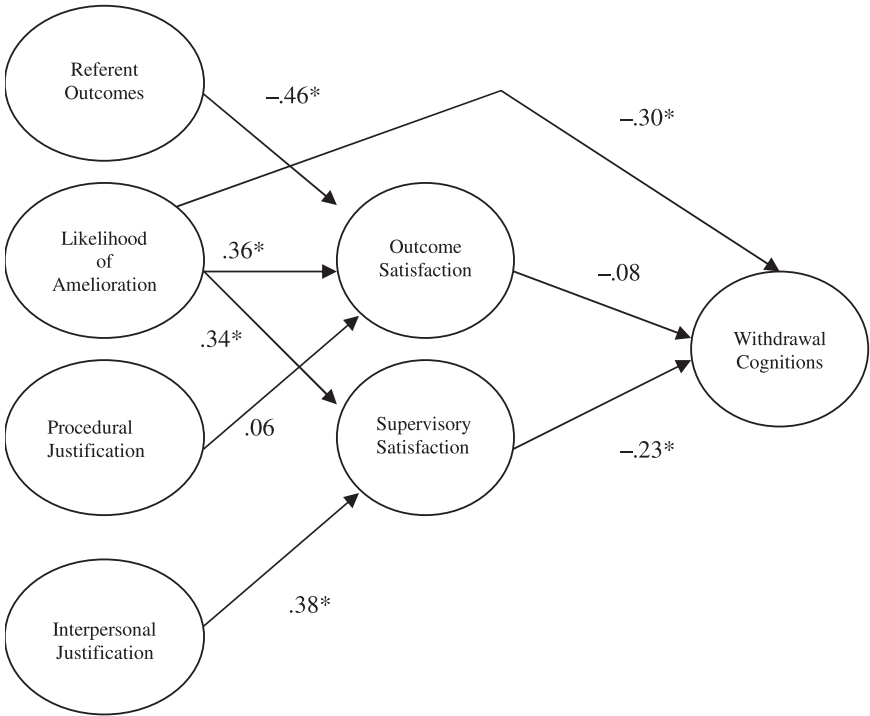


FIGURE 1. Empirical results from Aquino, Griffeth, Allen, and Hom (1997): Completely standardised structural parameter estimates for the less constrained alternative model.
 * $p > .05$.

(1997) used a single sample to both evaluate their measurement model and test the structural models.

The present study has theoretical and practical benefits. One theoretical benefit is that the replication provides a rigorous test of the generalisability of Aquino et al.’s (1997) results. The respondents for this replication clearly differ from those in Aquino et al.’s (1997) study not only in nationality, but also in occupational membership; and the measures differed as well. A second theoretical benefit relates to the exploration of RCT of mainstream turnover models. As noted above, injustice perceptions could be a “system shock” in the unfolding model perspective (Lee & Mitchell, 1994) if found significant. Additionally, as we have also noted, the rationale of RCT fits with Mobley et al.’s (1979) expectancy theory analysis. Moreover, examining both outcome and supervisory satisfaction as potential mediators of withdrawal cognitions adds to the theoretical development of the turnover process.

Now, instead of just “job satisfaction” stimulating withdrawal cognitions, satisfaction with one’s outcomes and supervision may also may serve to initiate thoughts of searching and quitting. Finally, the conceptual work of Price and Mueller (1981, 1986) describes a number of causal factors that can stimulate job satisfaction. Price and Mueller (1981, 1986) acknowledge that distributive justice (fair allocation of resources among an organisation’s members) is an antecedent of turnover. The present study would add to the theoretical richness of the Price and Mueller formulation if referent cognitions, likelihood of amelioration, procedural and interpersonal justice are found to be significant in this test. A practical benefit is that it can provide insights into how managers confront the challenge of retaining an increasingly intercultural, mobile, and globally interdependent workforce (Gomez-Mejia & Welbourne, 1991; Hofstede & Bond, 1988). In sum, the use of a Korean sample to examine Aquino et al.’s (1997) findings provides a unique opportunity to assess both the internal validity and the generalisability of their proposed model.

METHOD

Respondent Characteristics

Sample 1. Sample 1 was drawn from factory workers in the electronics division at a large South Korean company. Men comprised 82 per cent of the sample. The average age of the respondents was 30.9 years ($SD = 5.9$) and their average organisational tenure was 84 months ($SD = 52.1$). Ninety-two per cent possessed the Korean equivalent of a high school diploma and 3 per cent had formal education beyond a high school degree.

Sample 2. Sample 2 was drawn from factory workers employed in the semiconductor division in the same large South Korean company. Men comprised 72 per cent of the sample. The average age of the respondents was 28 years ($SD = 5.7$) and their average organisational tenure was 59 months ($SD = 38.8$). Ninety-nine per cent possessed the Korean equivalent of a high school diploma, while over half (53.5%) possessed formal education beyond a high school degree.

Procedures

Sample 1. A survey was administered to factory workers in the electronics division of a multi-divisional South Korean corporation. The electronics division primarily manufactured TVs and VCRs. The survey was distributed to 1,674 employees. Of that number 83 per cent, or 1,395 workers, completed the questionnaire anonymously, and 877 provided usable data on all study

variables (final response rate = 52%). The questionnaires were translated into Korean and then back-translated into English to examine if any differences existed between the two versions. The final version was administered in Korean.

Sample 2. The same survey was administered to factory workers in the semiconductor division as well. The survey was distributed to 900 employees. Of that number 96 per cent, or 853 workers, completed the questionnaire anonymously, and 731 provided usable data on all study variables (final response rate = 81%). As with the electronics division, the questionnaires were translated into Korean and then back-translated into English to examine if any differences existed between the two versions. The final version was administered in Korean.

Measures

Most of the model constructs were assessed with items anchored on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree).

Referent Outcomes. Two items measured referent outcomes. For each item, respondents were asked to compare their outcomes to referent others within their division. High scores on this scale indicate that the referent receives higher outcomes than the respondent.

Likelihood of Amelioration. Four items measured this construct. Respondents were asked to assess their chances of being promoted and several aspects reflecting the quality of the promotion system in their division. Items on this measure were scored such that a high score indicated a high expectation that one's future circumstances would improve.

Procedural Justification. Two items assessed procedural justifications for outcomes. These items measure the extent to which a respondent considers the performance evaluation procedure of his or her division as fair.

Interpersonal Justification. Five items measured justification based on the personal treatment employees received from their immediate supervisors. Respondents indicated whether they perceived their immediate supervisor as treating subordinates with respect, being helpful, caring, and friendly, and evaluating performance in a reasonable way.

Outcome Satisfaction. Five items were used to identify outcome satisfaction. The items measured the degree to which employees are satisfied with outcomes they receive.

Supervisory Satisfaction. Four items measured the degree to which the respondents were satisfied with the management of their division.

Withdrawal Cognitions. Four items measured this construct. Following Podsakoff, MacKenzie, Lee, and Podsakoff's (2003) suggestion for reducing mono-method biases we used "different scale endpoints and formats for the predictor and criterion" (p. 888). Unlike the previous measures, withdrawal cognitions were assessed with one 4-point item, two 3-point items, and one 2-point item, and assess respondents' thoughts about and intentions to leave the company voluntarily. The items are coded so that high scores indicate high withdrawal cognitions.

Statistical Analyses

We used LISREL 8 (Jöreskog & Sörbom, 1993) to evaluate the fit of the measurement model and the structural model. Following recommendations from Anderson and Gerbing (1988) we evaluated the measurement model using the first sample as data input. The measurement model assessed whether all items in a given scale represented the same latent factor. We performed structural model tests using sample 1 and sample 2.

To evaluate the fit of the measurement model and the structural models we followed Bollen's (1989, 1990) recommendation to interpret multiple indexes of model fit. We reviewed the χ^2 test, the Root Mean Square Error of Approximation (RMSEA; Steiger & Lind, 1980), the Comparative Fit Index (CFI; Bentler, 1990), the Normed Fit Index (NFI; Bentler & Bonnett, 1980), and the Goodness of Fit Index (GFI; Jöreskog & Sörbom, 1984). We also assessed the fit of the models by examining individual parameter estimates. We screened these estimates for improper solutions (e.g. negative variances), counterintuitive signs, and inflated standard errors. In addition, we assessed the quality of the measurement model by searching for cross loadings of the indicator variables.

We compared the fit of the three structural models proposed by Aquino et al. (1997) by performing nested model comparisons (Anderson & Gerbing, 1988). This procedure uses comparisons of the theoretical model with a more constrained alternative model and a less constrained alternative model. We applied two standards to assess the equivalence of our findings to those obtained by Aquino et al. (1997). First, the nested model procedure should indicate a superior fit for the less constrained alternative model as it did in Aquino et al.'s (1997) study. Second, the magnitude, direction, and statistical significance of the individual parameter estimates linking model constructs should be similar in both Aquino et al.'s (1997) study and ours.

RESULTS

An item-level confirmatory factor analysis revealed that the initial measurement model with 26 indicator variables fit the data satisfactorily ($\chi^2 = 738.57$, $df = 278$, $p < .01$, RMSEA = .046; 90% Confidence Interval RMSEA = .042–.050; NFI = .91; CFI = 0.94; GFI = 0.93). However, inspection of the modification indexes showed that one indicator loaded highly on multiple constructs. Following recommendations from Anderson and Gerbing (1988), we reanalysed the content of this indicator and decided to respecify the measurement model deleting the problem indicator. The problem indicator, “My boss evaluates my performance in a reasonable way”, from the interpersonal justification scale, appeared to be vague (a “reasonable way” assessment of one’s supervisory skill or ability in evaluating performance). The final measurement model with 25 variables fit the data well ($\chi^2 = 568.04$, $df = 254$, $p < .01$, RMSEA = .040; 90% Confidence Interval RMSEA = .036–.045; NFI = .93; CFI = 0.96; GFI = 0.94). Furthermore each indicator variable loaded significantly on its model construct and none of the remaining items had high cross loadings. Thus the measurement model provided a good fit and a simple structure. We followed the procedures used by Aquino et al. (1997) to conduct the comparative model test in sample 1 and sample 2 once an acceptable measurement model was obtained.

In order to investigate the potential severity of mono-method bias in our sample we empirically contrasted our theoretical measurement model with a mono-method model using sample 1. In the mono-method model we hypothesised that each of the items in this study is an indicator of the same underlying latent method factor. Compared to our theoretical seven-factor measurement model, the one-factor model fit the data poorly ($\chi^2 = 4,355.50$, $df = 275$, $p < .01$, RMSEA = .14, NFI = .55; CFI = 0.57; GFI = 0.69); although an insensitive diagnostic tool that does not control or rule out common method bias, this test provides some evidence that common method bias is not a primary explanation for our findings.

Table 1 presents the means, standard deviations, reliabilities, and correlations among model components in sample 1. In sample 1, the original model proposed by Aquino et al. (1997) reproduced the sample covariance matrix well ($\chi^2 = 634.30$, $df = 262$, $p < .01$, RMSEA = .043; 90% Confidence Interval RMSEA = .039–.047; NFI = .92; CFI = 0.95; GFI = 0.94). We performed nested model comparisons to compare the theoretical model to its rivals. First, we compared the theoretical model to the more constrained alternative model proposed by Aquino et al. (1997). The original theoretical model showed a significantly better fit to the data than the more constrained alternative (χ^2 difference = 48.68, $df = 1$, $p < .01$). Next, we compared the original theoretical model to Aquino et al.’s (1997) less constrained alternative. This less constrained model fit the data significantly better than the

TABLE 1
Sample 1 Means, Standard Deviations, and Correlations^a

	Mean	Standard Deviation								
			1	2	3	4	5	6	7	
Referent Outcomes	2.85	.84	(.70)							
Likelihood of Amelioration	2.50	.75	-.17	(.73)						
Procedural Justification	2.65	.87	-.30	.51	(.84)					
Interpersonal Justification	3.13	.78	-.25	.44	.41	(.74)				
Outcome Satisfaction	2.34	.75	-.29	.40	.38	.29	(.86)			
Supervisory Satisfaction	2.78	.76	-.31	.46	.47	.53	.35	(.81)		
Withdrawal Cognitions	2.27	.38	.19	-.32	-.26	-.32	-.24	-.34	(.61)	

^a Cronbach's alpha reliabilities are shown along the diagonal.
All correlations are significant at the $p < .01$ level.

TABLE 2
Sample 2 Means, Standard Deviations, and Correlations^a

	Mean	Standard Deviation							
			1	2	3	4	5	6	
Referent Outcomes	3.05	.82	(.64)						
Likelihood of Amelioration	2.59	.73	-.18	(.72)					
Procedural Justification	2.71	.85	-.30	.52	(.82)				
Interpersonal Justification	3.08	.77	-.30	.50	.43	(.75)			
Outcome Satisfaction	2.31	.68	-.36	.29	.33	.26	(.82)		
Supervisory Satisfaction	2.90	.77	-.38	.45	.41	.47	.33	(.82)	
Withdrawal Cognitions	2.25	.37	.20	-.39	-.26	-.37	-.21	-.38	(.57)

^a Cronbach's alpha reliabilities are shown along the diagonal.
All correlations are significant at the $p < .01$ level.

original theoretical model (χ^2 difference = 14.14, $df = 1$, $p < .01$). The standardised parameter estimates of this less constrained alternative model in sample 1 are presented in Figure 2.

We repeated these analyses using sample 2. Table 2 presents the means, standard deviations, reliabilities, and correlations among model components in sample 2. Once again, the original theoretical model reproduced the sample covariance matrix reasonably well ($\chi^2 = 776.14$, $df = 262$, $p < .01$, RMSEA = .056, 90% Confidence Interval RMSEA = .051–.060; NFI = .87; CFI = 0.91; GFI = 0.91). We compared the theoretical model to the more constrained alternative model. The theoretical model showed a superior fit to the data and the improvement was significant at $p < .05$ (χ^2 difference = 22.85, $df = 1$, $p < .01$). In the next step, we compared the original theoretical model to the less constrained alternative model. The less constrained model

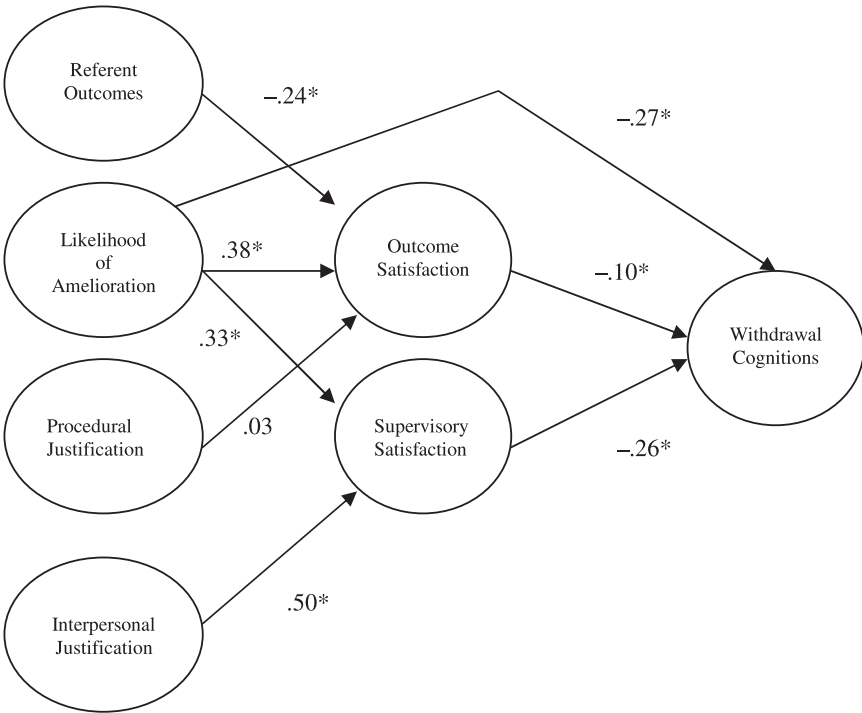


FIGURE 2. Sample 1: Completely standardised structural parameter estimates for the less constrained alternative model.
 * $p > .01$.

fit the data significantly better (χ^2 difference = 61.90, $df = 1$, $p < .01$). The standardised parameter estimates of the less constrained alternative in sample 2 are shown in Figure 3.

In summary, the theoretical model fit the data well across both samples, supporting the generalisability of the Aquino et al. (1997) model. Further, the nested model comparisons were generally consistent with Aquino et al.'s (1997) finding that the less constrained alternative with a direct path from likelihood of amelioration to withdrawal cognitions fits the data better than rival models. Sample 1 obtained from the Korean data strongly supported Aquino et al.'s (1997) conclusions, as did sample 2. Another standard used to compare the findings of Aquino et al. (1997) with ours was the degree to which the magnitude, direction, and significance of the standardised parameter estimates in each study were similar. Table 3 shows the completely standardised parameter estimates obtained by Aquino et al. (1997) for the less constrained alternative model. The respective parameter estimates obtained in the present study are also presented.

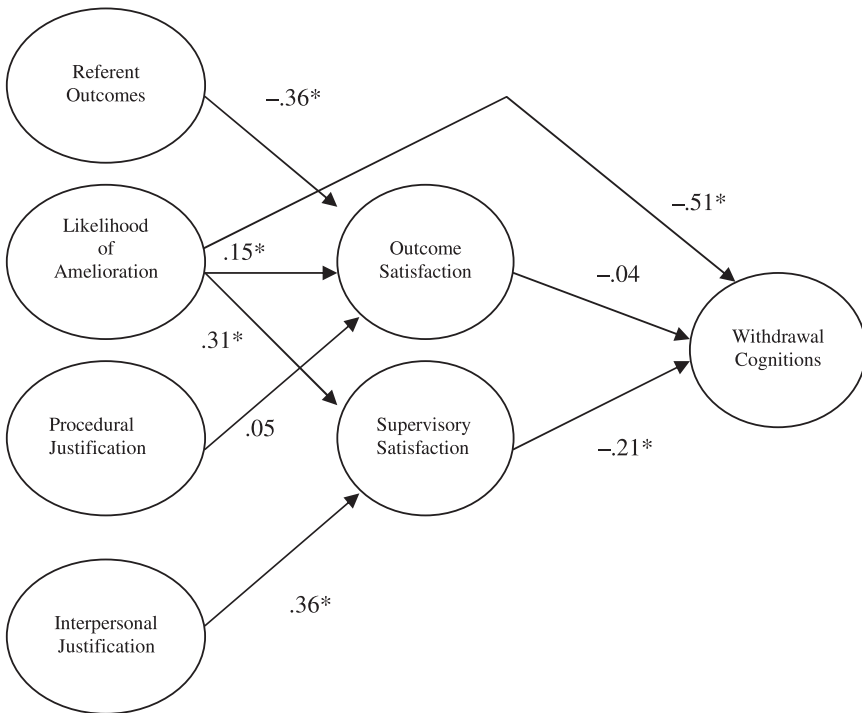


FIGURE 3. Sample 2: Completely standardised structural parameter estimates for the less constrained alternative model.
 * $p > .01$.

TABLE 3
 Parameter Estimates of the Less Constrained Alternative Model:
 Aquino et al. (1997) vs. the Present Analysis

<i>Paths</i>	<i>Aquino et al. (1997)</i>	<i>Present Analysis Sample 1</i>	<i>Present Analysis Sample 2</i>
Referent outcome to outcome satisfaction	-.46*	-.24*	-.36*
Likelihood of amelioration to outcome satisfaction	.36*	.38*	.15*
Procedural justification to outcome satisfaction	.06	.03	.05
Likelihood of amelioration to supervisor satisfaction	.24*	.33*	.31*
Likelihood of amelioration to withdrawal cognitions	-.30*	-.27*	-.51*
Interpersonal justification to supervisor satisfaction	.38*	.50*	.36*
Outcome satisfaction to withdrawal cognitions	-.08	-.10*	-.04
Supervisor satisfaction to withdrawal cognitions	-.23*	-.26*	-.21*

* $p < .05$.

DISCUSSION

The results of this study supported the generalisability of Aquino et al.'s (1997) RCT model of the turnover process up to the point of withdrawal cognitions in that the original theoretical model fit well in two samples of Korean employees, and the less constrained alternative turnover model that Aquino et al. (1997) concluded was the best fitting model also fit best. Following the same procedures they used to test their model, we found significant support for their comparative model test in both samples at the $p < .05$ level. These significant values point to the generalisability of Aquino et al.'s (1997) findings.

We also assessed generalisability by comparing parameter estimates across samples (see Table 3). This comparison showed that the replication of the less constrained alternative model using sample 1 produced parameter estimates that were identical in direction and significance, and similar in magnitude, for seven out of eight relationships compared to the results reported by Aquino et al. (1997). The one difference in significance was the path from outcome satisfaction to withdrawal cognitions that was not significant ($-.08$) in Aquino et al. (1997), but was significant in this case ($-.10^*$). Given the similarity of the magnitude, this difference in significance could merely be a function of sample size ($n = 877$ here versus $n = 150$ for Aquino et al.). In terms of magnitude, the path from interpersonal justification to supervisor satisfaction was somewhat stronger while the path from referent outcomes to outcome satisfaction was somewhat weaker in sample 1 than in Aquino et al. (1997). In sample 2, the parameter estimates were identical in direction and significance, and similar in magnitude, for eight out of eight relationships. Likelihood of amelioration was less strongly related to outcome satisfaction but more strongly related to withdrawal cognitions in sample 2 than in Aquino et al. (1997).

Perhaps the most important contribution of the Aquino et al. (1997) study and the present research is that both highlight the important role of likelihood of amelioration in the turnover process. Likelihood of amelioration was the strongest predictor of withdrawal cognitions in both Aquino et al.'s (1997) study and in the second sample of the present study. Moreover, it was a stronger predictor of these cognitions than two facets of job satisfaction. These findings indicate that employee expectations play a decisive role in the cognitive process leading to the actual decision to quit. If employees believe their situations will improve, then they are less likely to think about quitting which, in turn, should reduce their chances of actually quitting although we could not assess that in this case. This conclusion also supports the thinking from the Mobley et al. (1979) expectancy theory-based model.

One practical implication of this finding is that organisational leaders may be able to lower voluntary turnover by shaping employee perceptions

about the future. By presenting favorable future scenarios, such as likely improvements in salary or benefits or promotions, managers may be able to discourage turnover thinking. However, if the anticipated events fail to materialise, then it can negatively affect other components of the proposed turnover model (e.g. referent cognitions, interpersonal justification), leading to feelings of injustice. As the Aquino et al. (1997) model suggests, perceptions of injustice can also lead to turnover. The above examples illustrate the dynamic and complex cognitive process underlying Aquino et al.'s (1997) model.

The use of cross-validation in the present study should increase our confidence in the generalisability of the findings. Unlike most empirical replications that use a single sample to validate a model, we used two samples to validate the Aquino et al. (1997) model and found support for the hypothesised relationships in a South Korean sample. The study findings also strengthen support for the generality of the RCT predictions, given the rigorous confirmatory approach used to test them. That RCT predicted outcome and supervisory satisfaction in a South Korean sample suggests that the concepts underlying the theory may have greater applicability than those based on a single study. However, further testing in other settings is required to support this conclusion.

The proposed relationship linking procedural justification to outcome satisfaction was not supported by our replication. This result parallels the findings of Aquino et al. (1997), and casts serious doubt on whether a direct path linking procedural justification and outcome satisfaction should be included in the turnover process. In contrast, the interpersonal dimensions of both justice perceptions (e.g. interpersonal justification) and satisfaction (e.g. supervisory satisfaction) were highly significant across the US and South Korean samples. This finding reinforces Aquino et al.'s (1997) conclusion that the way people are treated by their supervisors exerts a powerful effect on their turnover-related responses, independently of the objective facets of their work environment. Adaptation to unjust procedures may be more likely than adaptation to unjust interpersonal relationships because the former may be perceived as institutionalised and impersonal while the latter is more individual and personal. It is not inconceivable that impersonal injustices by a supervisor, for example, may become part of employees' memories as they evaluate their future with the organisation, perhaps even being a "shock to the system" (Lee & Mitchell, 1994) stimulating supervisory dissatisfaction and withdrawal cognitions.

Limitations

We would be remiss if we did not mention the limitations of this study. For some, the failure to measure actual turnover remains a serious and perhaps

intractable problem. If our goal had been to predict turnover, then this criticism would have been correct. However, our goal was not to *predict* turnover, but to cross-validate structural relations in a newly proposed turnover model. Furthermore, there is evidence that the magnitude and significance levels of the empirical links between antecedents of turnover are the same whether or not turnover is included in a turnover model (Mueller, Boyer, Price, & Iverson, 1994). To be sure, we reanalysed the data from the original Aquino et al. (1997) study from the correlations, means, standard deviations, and scale reliabilities provided *with actual turnover excluded*. As expected, the results were identical to those when turnover was included in the model. That is, none of the standardised parameter estimates linking the turnover antecedents to withdrawal cognitions changed in terms of magnitude or significance level as a result of excluding actual turnover. This supports our contention that, in this study, a test of the nomological validity among these relations does not require the inclusion of turnover.

This finding parallels the results of Mueller et al. (1994). In their study, Mueller et al. (1994) used LISREL to test a recent variation of the Price and Mueller turnover model (e.g. Price & Mueller, 1981, 1986; Kim, Price, Mueller, & Watson, 1996). Included in their comprehensive analyses was a test of the differences in parameter estimates among the antecedents of turnover that occur when turnover is added to an otherwise unchanged model. The results revealed that the magnitude of the parameter estimates linking the turnover antecedents to each other were unaffected by the inclusion of turnover. Mueller et al. (1994) explained that those results are equal because only one endogenous variable has been added (turnover) which is directly affected by only one independent variable (intent to stay). The Aquino et al. (1997) model is similar to the one tested by Mueller et al. (1994) in that only one variable—withdrawal cognitions—is directly linked to turnover. We therefore expected, and found empirically using Aquino et al.'s (1997) data, that whether turnover was included or excluded from the model would not affect the nomological relationships between the turnover antecedents and withdrawal cognitions. Admittedly, we cannot conclude from the present study that turnover intentions are related to actual turnover among South Korean factory workers. However, according to extensive meta-analyses (e.g. Hom & Griffeth, 1995; Steel & Ovalle, 1984), intentions to quit, or in this case, withdrawal cognitions, are the single best predictor of actual turnover in a wide range of settings. Finally, we suggest that the benefits of replicating the Aquino et al. (1997) turnover model using a large dataset obtained in an entirely different cultural and industrial setting outweigh the costs of excluding turnover in order to obtain these data.

A second limitation of the study is the issue of mono-method bias. Only one method (a questionnaire) was used to obtain the data for this study.

Consequently, it could be argued that the good fit of the data to the less constrained alternative model is primarily due to mono-method bias. We suggest, however, that such an alternative explanation appears less likely to be true than our theoretical explanation for several reasons. First, we followed the suggestions of Podsakoff et al. (2003) and administered the survey anonymously. Also, we used different endpoints and scales for the predictor and criterion (Podsakoff et al., 2003). Additionally, the developmental process of the alternative model was described above and by Aquino et al. (1997). Each construct and each link between the constructs was carefully chosen based on earlier conceptual and empirical work. We tested this model and the results suggest that it represents the data well. This good fit, we believe, can better be attributed to the validity of the conceptual work underlying that model than to the potential problem of mono-method bias. To be sure, mono-method bias cannot be ruled out conclusively as an alternative explanation for the results since we used only one method to obtain the data for this study. Furthermore, an almost infinite number of untested alternative theoretical and atheoretical models cannot be ruled out by the good fit of the data to our alternative model. Nevertheless, we believe that the combination of conceptual reasoning and empirical fit provides compelling evidence for the validity of the Aquino et al. (1997) less constrained alternative turnover model.

We tested empirically whether the data obtained from the first sample fit a mono-method measurement model better or about as well as our theoretical seven-factor measurement model. We found that this is not the case. We do not argue that these results conclusively rule out the existence of mono-method bias in our study. However, because our theoretical seven-factor measurement model represents the underlying structure of the data better than an alternative mono-method hypothesis, we regard the empirical results as supporting the factor structure that underlies the Aquino et al. (1997) model.

A third limitation of the study is that the act of translating the questionnaire from English to Korean may have increased measurement error. This may not be too problematic, however, since structural equation modeling takes measurement error into account when estimating model parameters. Nonetheless, it is unknown whether Korean workers actually interpret the items the same way as workers in the US. This is, unfortunately, a problem with all research in which constructs or models are developed in one culture and are tested in another. Use of the constructs or models over time, with multiple samples, helps to determine the universality of creations. We believe these series of studies move us a little closer to establishing the RCT's generality than was previously the case. Finally, the reliabilities of withdrawal cognitions in both samples were somewhat low. Additionally, in sample 2, the reliability for referent outcomes is a bit low with an alpha of .65. However,

these reliabilities are only minimally below the .7 threshold set by Nunnally (1978), and exceed the .5 standard for adequacy set Nunnally (1967).

Conclusions

The data generally upheld the conclusions of Aquino et al.'s (1997) research. Thus, the present study makes an incremental contribution to the turnover literature by providing a test of a relatively new conceptualisation of the turnover process. Yet this study also suggests that the model may require modification. Additional research using different samples is needed to further assess the model's boundary conditions and limitations. However, the available empirical data suggest that Aquino et al.'s (1997) model does provide a promising framework for reinvigorating turnover research.

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