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A Motivational Model of Work Turnover

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The purpose of this article was to propose and test a motivational model of work turnover. The model posits that feelings of relatedness toward work colleagues and feelings of competence jointly and positively affect self-determined work motivation, which in turn facilitates work satisfaction but prevents emotional exhaustion. Moreover, work satisfaction and emotional exhaustion respectively lead to negative and positive effects on turnover intentions. Finally, over time, turnover intentions translate into turnover behavior. A total of 490 alumni from a school of administration completed a questionnaire assessing the various components of the motivational model. Results from structural equation modeling analyses (with EQS; Bentler, 1992) supported the motivational model. Results are discussed in light of the relevant literature, and future research directions are proposed.

Work turnover certainly represents one of the most important issues for any organization. Indeed, the money and time invested in hiring and training an individual who leaves the organization is lost forever. In addition, such costs are significant and increase as we move up the organizational hierarchy. In light of this information, it appears that work turnover deserves scientific attention.

Over the years, much research has focused on turnover in the workplace. For instance, empirical work has documented the role of variables such as job satisfaction (DeCottis & Summers, 1987; Irvine & Evans, 1995; Orpen, 1995; Russ & McNeilly, 1995; Thomas & Hafer, 1995), perceptions of control (Spector, 1986), job stress (Parasuraman, 1982; Summers, Denisi^A, & DeCottis, 1989), intentions to leave (Chen, Hui, & Segó, 1998; Tett & Meyer, 1993), and absenteeism (McElroy, Morrow, & Fenton, 1995; Mitra, Jenkins, & Gupta, 1992; Somers, 1995) in predicting turnover behavior.

This research underscores the role of motivational variables in turnover. While several motivational frameworks have been proposed with respect to job-related outcomes (Bandura, 1991; Carver & Scheier, 1981; Mobley, Griffeth, Hand, & Meglino, 1979), one theory that seems particularly useful with respect

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to work turnover is self-determination theory (SDT; Deci & Ryan, 1985, 1991). Indeed, much research over the past 25 years has shown that the theory is able to predict persistent behavior in several life domains (Vallerand, 1997). Furthermore, recent investigations have provided support for its relevance to the organizational field (Deci, Connell, & Ryan, 1989; Ilardi, Leone, Kasser, & Ryan, 1993). Thus, SDT should provide a cogent explanation of turnover behavior in organizations. However, no research to date has demonstrated empirically the usefulness of SDT with respect to work turnover.

B The purpose of this article thus consists in presenting and testing an integrative motivational model of work turnover based on SDT (Deci & Ryan, 1985, 1991) and a recent extension of it, the hierarchical model (Vallerand, 1997; Vallerand & Ratelle, in press^B), as well as relevant organizational research. We feel that such an undertaking can yield benefits on two counts. First, it provides a real-life test of the validity of SDT and the hierarchical model in the workplace. Second, the proposed motivational model should lead to potential insights concerning future applied advances in the work environment.

A Motivational Model of Work Turnover

C In accord with SDT, Vallerand (1997; Vallerand & Ratelle, in press^C) recently proposed the hierarchical model of intrinsic and extrinsic motivation. While the model extends SDT on several counts, for the purpose of the present study, we limit ourselves to the proposition that the model makes with respect to the existence of a motivational sequence integrating the determinants and outcomes of motivation. Specifically, the hierarchical model posits that certain key proximal determinants (e.g., intrinsic task rewards and perceptions of competence and relatedness) influence intrinsic and extrinsic motivation, which in turn lead to various cognitive, affective, and behavioral consequences. This motivational sequence has been supported with respect to different consequences, including persistent behavior in various life domains and in educational (D Vallerand et al., 1997) and sports settings (Sarrazin, Vallerand, Guillet, Pelletier, & Curry, 2001).

E The motivational sequence as applied to work turnover is presented in Figure 1. It^E posits the following: First, intrinsic job rewards, feelings of job competence, and feelings of relatedness toward work colleagues are expected to positively influence self-determined work motivation. Second, self-determined work motivation is hypothesized to positively affect work satisfaction, but to negatively influence emotional exhaustion. In turn, work satisfaction and emotional exhaustion are expected to have negative and positive influences, respectively, on turnover intentions. Finally, turnover intentions are hypothesized to eventually translate into turnover behavior over time. The empirical evidence for each of the components of the motivational model will be presented.

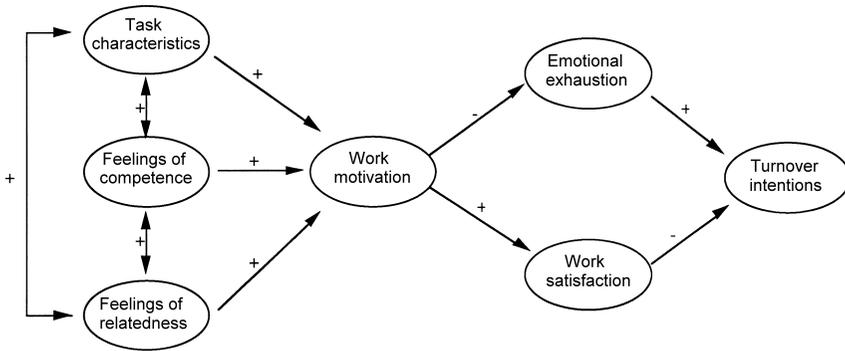


Figure 1. Motivational model of work turnover.

Self-Determined Work Motivation

F Central to the model^F is the construct of motivation. Deci and Ryan (1985, 1991) postulated the existence of three major types of motivation; namely, intrinsic and extrinsic motivation, and amotivation. *Intrinsic motivation* refers to accomplishing one's work for the inherent satisfaction and pleasure one experiences while engaging in it. For instance, individuals might go to work because they like to learn new things related to their jobs.

G On the other hand, *extrinsic motivation* refers to engaging in a given activity in order to receive something external to the activity. The activity then serves only as a means to an end. Three major types of extrinsic motivation have been proposed (Deci & Ryan, 1985, 1991; ^GRyan, Connell, & Deci, 1985); namely, external, introjected, and identified regulation. Individuals are externally regulated when the source of control is outside the person. For instance, workers who say that they engage in their line of work because of the money or for the fringe benefits can be seen as being externally regulated. With introjected regulation, the individual has only partially internalized previous external pressure or inducement to engage in the activity. It is the internal pressure that now leads the individual to engage in the activity. For instance, workers who go to work because they would feel guilty if they did not can be said to be introjected. Finally, when motivated out of identified regulation, the behavior is performed out of choice and is valued as being important by the individual. Thus, workers who stay at work on a Friday night because they have chosen to complete a project would display identified regulation.

In addition to intrinsic and extrinsic motivation, Deci and Ryan (1985) suggested that a third motivational concept is necessary in order to provide a more complete account of human behavior. This concept is termed *amotivation* and

refers to the relative absence of motivation (neither intrinsic nor extrinsic; see Koestner, Losier, Vallerand, & Carducci, 1996; Vallerand, 1997). Individuals who are amotivated engage in the activity without a sense of purpose and do not see a relationship between their actions and the consequences of such behavior. For instance, amotivated individuals might say that they go to work, although they're not sure if it's worth it. Such a state of amotivation can eventually lead to learned helplessness (Abramson, Seligman, & Teasdale, 1978; Seligman, 1975).

Deci and Ryan (1985) also proposed that the different types of motivation discussed earlier should be considered on a self-determination continuum. According to Deci and Ryan, the most self-determined types of motivation are intrinsic motivation and identified regulation. The least self-determined types of motivation are external regulation and amotivation. Much research, both in the work area and in other life domains, has supported the existence of the different types of motivation and their position on the self-determination continuum (Blais, Brière, Lachance, Riddle, & Vallerand, 1993; Blais, Sabourin, Boucher, & Vallerand, 1990; Pelletier, Vallerand, Green-Demers, Blais, & Brière, 1995; Ryan & Connell, 1989; Vallerand & Bissonnette, 1992; Vallerand et al., 1989, 1993). Thus, self-determined motivation refers to high levels of intrinsic motivation and identified regulation, and low levels of external regulation and amotivation (see Vallerand, 1997, and Vallerand et al., 1997, for a more elaborate discussion on self-determined motivation).

On the Determinants of Self-Determined Work Motivation

Cognitive evaluation theory (Deci & Ryan, 1985, 1991), a subtheory of SDT, posits that feelings of autonomy, competence, and relatedness represent important determinants of motivation. Thus, according to this theory, any event that will affect these feelings will also influence motivation. Much research in different life contexts has indicated that when feelings of autonomy increase, so does self-determined motivation, while when feelings of autonomy are decreased, so is self-determined motivation (e.g., Fortier, Vallerand, & Guay, 1995; Reeve & Deci, 1996; Richer & Vallerand, 1995; Zuckerman, Porac, Lathin, Smith, & Deci, 1978). Other research (although not as plentiful) has shown that motivation can also be influenced by feelings of competence (e.g., Harackiewicz & Larson, 1986; Reeve & Deci, 1996; Vallerand & Reid, 1984, 1988). Thus, positive verbal feedback from the supervisor produces an increase in feelings of competence, which in turn lead to self-determined motivation. On the other hand, negative feedback leads to decrements in feelings of competence, which in turn undermine self-determined motivation. However, we still know very little about the role of feelings of relatedness on work motivation.

Deci, Ryan, and their colleagues (Deci et al., 1989; Ilardi et al., 1993; Kasser, Davey, & Ryan, 1992; Riordan & Griffeth, 1995; Ryan, 1995) proposed that

feelings of relatedness should also represent an important determinant of motivation and well-being in the work context. Previous research has looked at the relations between interpersonal relationships and various work outcomes. For instance, Piotrkowski (1985) found that conflict among work colleagues can predict physical and psychological problems among workers. As well, Riordan and Griffeth (1995) demonstrated that employees' perceptions of friendship opportunities in the workplace were related to job satisfaction and job involvement. In addition, Miller and Labovitz (1973) found that the probability of an individual leaving his or her organization is directly related to the proportion of esteemed colleagues, friends, and contacts who have already left the organization. These studies underscore the potential role that feelings of relatedness toward work colleagues might have on motivation and, in turn, its influence on satisfaction, well-being, and turnover intentions. In line with Deci and Ryan (1985, 1991), it is hypothesized that feelings of relatedness produce important affective consequences through their impact on self-determined work motivation.

It is important to underscore that intrinsic job rewards can also influence work motivation. Hackman and Oldham (1974, 1976) proposed a model in which skill variety, task significance, and feedback represent important determinants of work motivation. It is proposed that jobs that provide those elements are likely to foster self-determined motivation. While past research on this issue has not assessed self-determined motivation *per se*, much research has revealed that providing constructive feedback can significantly enhance work motivation (e.g., Hackman & Oldham, 1976; Lee & Graham, 1986; Stepina, Perrewé, Hassell, Harris, & Mayfield, 1991).

Consequences of Self-Determined Work Motivation

Because self-determination is associated with enhanced psychological functioning (Deci, 1980; Ryan, Deci, & Grolnick, 1995), it is hypothesized that self-determined motivation should lead to positive consequences. Research both in non-work contexts (Vallerand, 1997) and in the work domain (Blais et al., 1993) supports this hypothesis. In the work context, self-determined motivation has been associated with high levels of work satisfaction (Harigopal & Kumar, 1982; Ilardi et al., 1993; Keaveney & Nelson, 1993) and with low levels of emotional exhaustion (Blais et al., 1993; Pedrabissi & Santinello, 1991). Keaveney and Nelson also showed through structural equation modeling that an intrinsic work motivational orientation represents an important buffer against stress at work. In addition, these authors showed that intrinsic motivation positively influences work satisfaction, which in turn negatively determines turnover.

Moreover, organizational research has shown that a negative correlation exists between work satisfaction and personnel turnover (Brayfield & Crockett, 1975^H; Porter & Steers, 1973; Vroom, 1964). Similarly, a meta-analysis conducted by

Irvine and Evans (1995) also revealed a strong negative relationship between work satisfaction and turnover intentions (for similar conclusions, see also Hellman, 1997; Netemeyer, Johnston, & Burton, 1990; Rush, Schoel, & Barnard, 1995). Finally, in a longitudinal study involving nurses, Firth and Britton (1989) demonstrated that emotional exhaustion could predict absenteeism, while Singh, Goolsby, and Rhoads (1994) showed through structural equation modeling that emotional exhaustion predicts turnover intentions (see also Lee & Ashforth, 1993; Wright & Cropanzano, 1998). It would thus appear that work satisfaction and emotional exhaustion can both lead to turnover intentions.

Finally, the link between behavioral intentions and behavior has been well documented in the general psychological literature (Ajzen & Fishbein, 1980; Vallerand et al., 1997; see also Ajzen, 1988) as well as with respect to turnover intentions and actual behavior (Chen et al., 1998; Hom, Caranikas-Walker, Prussia, & Griffeth, 1992; Irvine & Evans, 1995; Mitchel, 1981; Parasuraman, 1982; Tett & Meyer, 1993). For instance, a study by Granrose and Kaplan (1994) revealed that women's intentions to return to work following the birth of their first child predicted whether or not they did return to work. Moreover, the behavior was more likely to occur for women who felt they had control over the situation. In sum, most employees who intend to leave their jobs and who feel they have the choice to do so will most likely quit their occupations (Mobley et al., 1979).

The Present Study

The purpose of the present study is to test the motivational model of work turnover (Figure 1). The model proposes the following sequence: Intrinsic job rewards, feelings of job competence, and feelings of relatedness toward work colleagues are expected to positively influence self-determined work motivation. Self-determined work motivation is then hypothesized to positively affect work satisfaction, but to negatively influence emotional exhaustion. In turn, work satisfaction and emotional exhaustion are expected to have negative and positive influences, respectively, on turnover intentions. Finally, turnover intentions are hypothesized to eventually translate into turnover behavior over time. Because research has repeatedly supported the role of feelings of autonomy as a determinant of motivation (see Vallerand, 1997) and to reduce the complexity of the design, feelings of autonomy were not included in the present study.

Method

Participants

A total of 500 alumni from a school of administration from the Greater Montreal area participated in this study. However, we rejected 10 questionnaires, 6

I that were not duly completed and 4 that came from people who were retired, for a total of 490 final participants (181 women, 309 men). This represents a 24% participation rate from the initial sample of 2,093 individuals who were asked to participate. The mean age of the participants was 38.92 years. Participants had been working at their current job for an average of 73 months. They worked an average of 43.88 hours per week. Slightly more than half of the participants (53%¹) worked in the private sector, while 37% were in the public or parapublic sector. Of the 490 participants, 41% worked as managerial staff, 28% as professionals, 10% as clerical workers, 8% as president or vice-president, 4% as technicians, 3% as associates, and 6% had some other function.

Questionnaire

Feelings of relatedness. The Feelings of Relatedness Scale (Richer & Vallerand, 1998) is a 10-item scale that assesses the dimensions of acceptance (i.e., feelings of being understood and listened to by colleagues; 5 items, with a standardized Cronbach's alpha [α] of .91 for this study) and intimacy with colleagues (5 items, $\alpha = .92$ for this study). Research supports the validity and reliability of the scale (Richer & Vallerand, 1998). In the present study, participants had to indicate the extent to which each of the items corresponded to their current interpersonal relationships with their work colleagues. The various items follow the stem "In my relationship with my work colleagues, I feel . . ." and items include "supported," "close," and so forth. Items are completed on a 7-point scale ranging from 1 (*do not agree at all*) to 7 (*very strongly agree*). Cronbach's alpha for the 10 items was .92.

Feelings of competence. Feelings of competence in the work domain were assessed through a scale adapted from Losier, Vallerand, and Blais (1993). This scale is made up of three items assessing feelings of efficacy, ability, and competence toward work. The scale was assessed on a 7-point scale ranging from 1 (*do not agree at all*) to 7 (*very strongly agree*). The standardized Cronbach's alpha of this scale was .76.

Intrinsic job rewards. Intrinsic job rewards were assessed through a scale made up of three items taken from Hackman and Oldham (1976). Thus, three intrinsic job rewards were assessed; namely, task significance, feedback on the job, and skill variety. For instance, the following item measured task significance: "This job is one where a lot of other people can be affected by how well the work gets done." The standardized Cronbach's alpha of this scale was .48.

Work motivation. Participants completed the Blais Work Motivation Inventory (Blais et al., 1993). This scale assesses the different constructs postulated by SDT (Deci & Ryan, 1985, 1991). In light of the high number of items in the questionnaire, we used an abridged version of the scale. This version of the scale measures intrinsic motivation, identified regulation, external regulation, and

amotivation toward work. Each item represents a possible reason why workers go to work. These reasons are scored on a 7-point Likert scale ranging from 1 (*do not agree at all*) to 7 (*very highly agree*). Four items assess each of the four motivational constructs mentioned (thus, a total of 16 items): intrinsic motivation (e.g., “For the satisfaction I experience while I try to meet the challenge of my work”; $\alpha = .90$), identified regulation (e.g., “Because it is the type of work that I have chosen in order to reach my career goals”; $\alpha = .86$), external regulation (e.g., “For the different fringe benefits associated with my work”; $\alpha = .74$), and amotivation (e.g., “I don’t know; I don’t think I have what it takes to do this work”; $\alpha = .92$).

As in previous studies (e.g., Blais et al., 1990; Fortier et al., 1995; Grolnick & Ryan, 1987; Ryan & Connell, 1989; Vallerand & Bissonnette, 1992), a self-determined motivation index was derived by computing four separate autonomy indexes using individual items of the subscales. These four indexes served as multiple indicators of the latent construct of self-determined work motivation. A self-determined motivation index consists of a summation of specifically weighted scores and is used to integrate the information from the different motivational subscales under one score. In line with previous studies using the index, weights were assigned to the motivational items according to their respective placement on the self-determined continuum (Grolnick & Ryan, 1987, 1989; Ryan & Connell, 1989). Because they are considered self-determined forms of motivation, intrinsic motivation and identified regulation items were assigned weights of +2 and +1, respectively. On the other hand, amotivation and external regulation items, because they are conceptualized as less self-determined forms of motivation, were assigned weights of -2 and -1, respectively. As there were four items for each of the motivational subscales, four indexes were computed using the following formula: $\{[2 \times (\text{intrinsic motivation}) + \text{identified regulation}] - [\text{external regulation} + 2 \times (\text{amotivation})]\}$ (see Vallerand, 1997, for more information on the self-determination index). The standardized Cronbach’s alpha of this measure (involving the four indexes) was .93.

Work satisfaction. Work satisfaction was assessed through the Work Satisfaction Scale (Blais, Lachance, Forget, Richer, & Dulude, 1991). It is made up of three items that assess general satisfaction toward work (e.g., “In general, this type of work corresponds to what I want to do in my life”). The scale is measured on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The standardized Cronbach’s alpha for this scale was .86.

Emotional exhaustion. Emotional exhaustion represents one of the three dimensions of professional burnout proposed by Maslach and Jackson (1986). We thus used this subscale from the Maslach Burnout Inventory (Maslach & Jackson, 1986; see Blais, Richer, Lachance, & Dulude, 1991, for the French Canadian translation of the scale). Four items were selected from the emotional exhaustion subscale (e.g., “I feel burnt out from my work” and “I feel used up at



the end of the work day”). This scale is completed on a 7-point scale ranging from 0 (*never*) to 6 (*each day*). The scale showed a standardized Cronbach’s alpha of .87.

Turnover intentions. Turnover intentions were obtained from responses to three items that asked whether respondents thought about leaving their jobs, planned to look for new jobs over the next 12 months, and would actively search for new jobs outside the firm (O’Driscoll & Beehr, 1994). Responses were assessed on a 7-point scale ranging from 1 (*not at all*) to 7 (*extremely*). A standardized Cronbach’s alpha of .91 was obtained from the three-item turnover intention scale.

Procedure

The alumni association from a School of Administration from the Greater Montreal area was contacted and provided a list of 2,250 names that were selected randomly from their 28,000 members. A questionnaire and a return stamped addressed envelope were sent to each of those individuals at their work addresses. A letter was also included that explained the general purpose of the study, how we obtained their work addresses, and the possibility of winning one of three money prizes (\$250, \$150, or \$100) by participating in the study. The letter also indicated that in order to participate in this study, individuals had to work either part-time or full-time. A total of 157 questionnaires were returned to us because they were sent to the wrong address. We received 500 questionnaires from the 2,093 questionnaires that reached their destinations, for a response rate of 24%.

Participants were contacted again through the mail 1 year after the first wave of data collection in order to assess turnover behavior. A short questionnaire was sent to participants in which they were asked to answer questions pertaining to their current job status. A total of 241 participants completed and returned this questionnaire. Participants were asked to indicate whether or not they had left their jobs, and in both cases why. Those who were occupying the same job completed two questions of choice versus obligation according to the following stem: “Why are you still occupying the same job you were occupying last year?” A sample response item is “Because I wanted to keep my job.” Participants who were not occupying the same job completed two questions pertaining to choice versus obligation according to the following stem: “Why are you not occupying the same job you were occupying last year?” A sample response item is “Because I didn’t have any choice, I had to change job.” Responses were assessed on a 7-point scale ranging from 1 (*do not agree at all*) to 7 (*very strongly agree*). Thus, these two questions served to assess the level of choice that participants experienced with respect to the behavior. Because participants’ intentions were assessed 1 year earlier, various factors out of their control might have influenced

participants' behavior since the assessment of their intentions. Thus, such a choice measure might be particularly useful in explaining the strength of the intentions–behavior link. Ajzen (1988) used a similar strategy in his theory of planned behavior.

Data Analyses

Two models were tested. The first model involved all variables except for turnover behavior. This variable was not included in the overall model because the number of participants who provided that information was not sufficient in light of the number of parameters included in the model (Bentler, 1990). However, we tested a second model involving self-determined motivation, emotional exhaustion, work satisfaction, and turnover intentions and behavior. This abridged model allowed us to determine whether the model can predict actual turnover behavior while respecting the parameter/participants ratio (Bentler, 1990).

The adequacy of the different models was assessed through structural equation modeling with the EQS program (Bentler, 1992). The raw data of the observed variables were used as database for the analysis. Inspection of univariate and multivariate normality proved satisfactory. The different models were thus tested with standardized coefficients obtained from the maximum likelihood (ML) method of estimation. A growing body of research indicates that ML performs reasonably well when the data are multivariate normally distributed and the sample size is large enough (e.g., Chou & Bentler, 1995), which was the case with the present data.

The EQS (Bentler, 1992) program provides different indexes to ascertain model fit. Herein, we used chi square, comparative fit index (CFI), and the Bentler-Bonett non-normed fit index (NNFI). The chi-square statistic is a function of the difference between the model examined and a saturated model (with a perfect fit) consisting of all possible sources of variance and covariance among the variables. Consequently, a nonsignificant chi square indicates that the model is an adequate representation of the sample data. Note, however, that chi square is also a function of sample size: the larger the number of participants, the higher the chi-square values. On the other hand, the CFI assesses the relative reduction in lack of fit as estimated by the noncentral chi square of a target model versus a baseline model where all of the observed variables are uncorrelated (Bentler, 1990, 1992). In addition, the NNFI compares the lack of fit of a target model to the lack of fit of the baseline model. Thus, NNFI estimates the relative improvement per degree of freedom of the target model over the baseline model (Bentler & Bonett, 1980). The CFI index varies between 0 and 1, whereas the NNFI can go out of this range (i.e., > 1). Typically, models with a CFI and NNFI below the .90 cutoff value are generally rejected (see Bentler & Bonett, 1980).

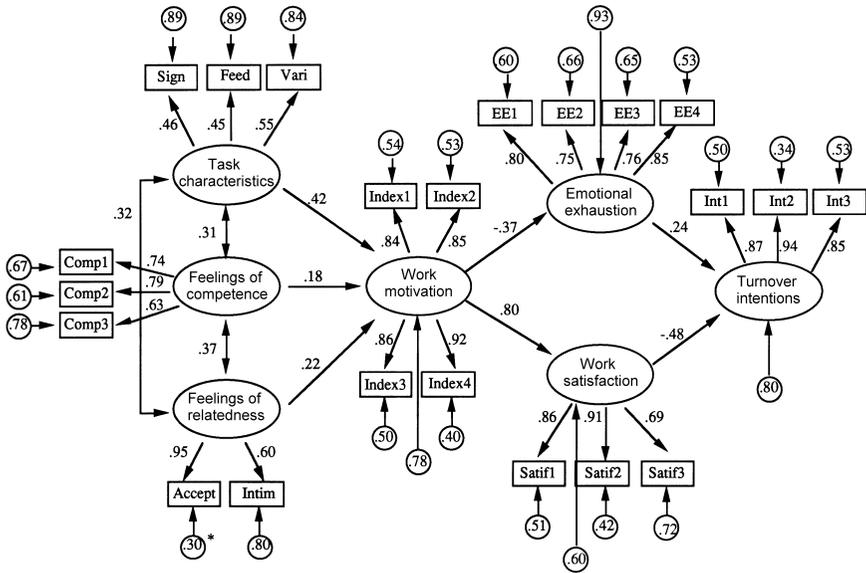


Figure 2. Results of the structural equation modeling analysis of the motivated model of work turnover. All coefficients were standardized and are significant at $z > 1.96$. The error residual was constrained at lower bound. The measurement error was fixed by using the following formula: $\text{var}(1 - \alpha) \cdot .99(1 - .91) = .09$ (Bollen, 1989; Wang, Fisher, Siegal, Falck, & Carlson, 1995).

Y

Results

Turnover Intentions

The correlation coefficients, means, standard deviations, skewness, and kurtosis of the 22 observed variables are shown in Table 1. Figure 2 displays the path coefficients of the integrated model, the coefficients associated with the observed variables, as well as the measurement errors of the first model; for the overall model, $\chi^2(200, N = 490) = 592.19, p < .001$. Although the chi square was significant, the other measures of goodness of fit provided support for the hypothesized model. The NNFI and CFI were .93 and .94, respectively. The model accounted for 36% of the variance in turnover intentions.

As predicted, the results show the importance of feelings of relatedness and of competence, as well as intrinsic job rewards as predictors of work motivation. The beta weights for these three motivational determinants were .22, .18, and .42, respectively. Results also reveal that self-determined work motivation was negatively related to emotional exhaustion ($\beta = -.37$) but positively related to work satisfaction ($\beta = .80$). It was also found that emotional exhaustion was positively

Table 1

Correlation Matrix, Means, Standard Deviations, Skewness, and Kurtosis for the

Variable	1	2	3	4	5	6	7	8	9
Task characteristics									
1. Signification	—								
2. Feedback	.21	—							
3. Variety	.27	.22	—						
Feelings of competence (Comp)									
4. Comp1	.04	.27	.12	—					
5. Comp2	.07	.16	.09	.58	—				
6. Comp3	.08	.10	.07	.43	.54	—			
Feelings of relatedness									
7. Acceptation ^X	.15	.20	.13	.36	.27	.19	—		
8. Intimacy	.08	.13	.04	.21	.16	.12	.61	—	
Work motivation (Index)									
9. Index1	.18	.19	.31	.37	.23	.20	.35	.17	—
10. Index2	.21	.26	.28	.36	.27	.23	.38	.25	.74
11. Index3	.19	.14	.25	.30	.16	.13	.33	.14	.75
12. Index4	.20	.21	.27	.36	.20	.17	.37	.20	.78
Emotional exhaustion (EE)									
13. EE1	.07	-.01	.09	-.18	-.12	-.07	-.26	-.09	-.26
14. EE2	.08	.05	.12	-.16	-.14	-.07	-.12	-.08	-.19
15. EE3	-.02	-.03	.02	-.22	-.13	-.09	-.24	-.19	-.37
16. EE4	.05	-.04	.07	-.27	-.15	-.03	-.26	-.13	-.32
Work satisfaction (Satif)									
17. Satif1	.22	.22	.34	.31	.19	.13	.38	.25	.64
18. Satif2	.19	.32	.28	.35	.16	.12	.38	.26	.66
19. Satif3	.13	.17	.30	.30	.18	.16	.40	.18	.52
Turnover intentions (Int)									
20. Int1	-.05	-.18	-.16	-.14	.00	-.00	-.30	-.20	-.35
21. Int2	-.04	-.18	-.18	-.14	-.04	.02	-.29	-.19	-.33
22. Int3	-.01	-.13	-.09	-.08	.04	.07	-.27	-.14	-.27
<i>M</i>	6.25	5.32	5.76	5.71	5.93	5.91	4.71	3.40	9.00
<i>SD</i>	1.11	1.40	1.29	1.05	0.83	1.07	0.94	1.14	5.38
Skewness	-2.24	-1.18	-1.42	-1.36	-0.63	-1.54	-0.62	-0.07	-0.79
Kurtosis	5.93	1.08	1.89	3.13	0.45	3.76	0.77	-0.47	0.65

Model Variables

10	11	12	13	14	15	16	17	18	19	20	21	22
—												
.75	—											
.81	.83	—										
-.21	-.26	-.24	—									
-.19	-.15	-.16	.62	—								
-.36	-.34	-.34	.57	.61	—							
-.29	-.34	-.33	.69	.62	.64	—						
.64	.61	.68	-.21	-.10	-.27	-.22	—					
.62	.62	.67	-.26	-.15	-.35	-.30	.78	—				
.48	.48	.51	-.20	-.13	-.24	-.23	.60	.63	—			
-.36	-.38	-.42	.31	.24	.38	.37	-.46	-.54	-.34	—		
-.29	-.32	-.35	.28	.20	.31	.30	-.40	-.52	-.35	.81	—	
-.22	-.28	-.29	.27	.17	.28	.32	-.31	-.47	-.31	.72	.81	—
7.58	8.31	8.51	1.87	2.83	1.89	1.38	5.29	5.46	5.24	2.65	2.79	1.99
5.43	5.26	5.12	1.52	1.64	1.61	1.47	1.48	1.36	1.34	1.80	2.08	1.71
-0.11	-0.19	-0.33	0.86	0.12	0.68	1.23	-1.23	-1.32	-1.10	1.01	0.89	1.72
-0.84	-0.71	-0.60	0.02	-0.91	-0.31	0.94	0.97	1.34	0.94	-0.06	-0.64	1.80

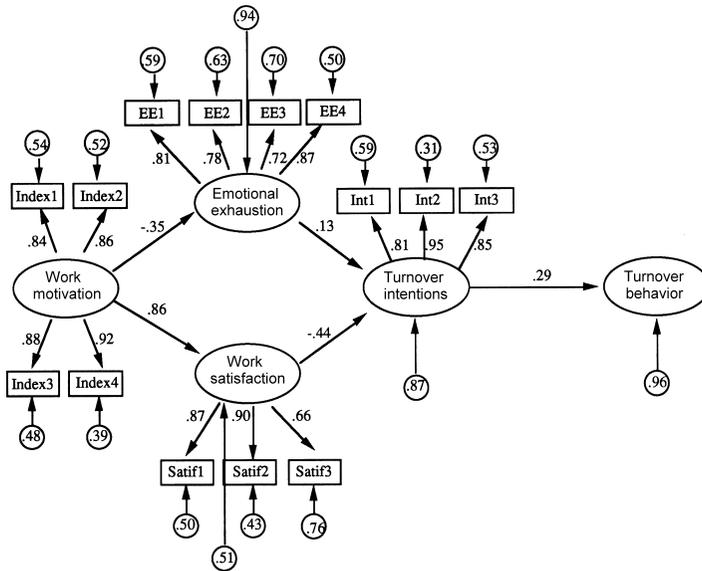


Figure 3. Path diagram of the estimated structural model of the compressed motivational model of work turnover. All coefficients were standardized and are significant at $z > 1.96$.

related to turnover intentions ($\beta = .24$), while work satisfaction was negatively related to turnover intentions ($\beta = -.48$).

Turnover Behavior

Supplementary analyses were conducted in order to predict turnover 1 year after the first wave of data collection. Because the number of participants who participated in this phase of the study was smaller ($n = 241$), we tested an abridged model. In this model, work motivation predicted work satisfaction and emotional exhaustion, the latter two variables predicted intentions to leave the current job, and intentions were hypothesized to predict actual turnover behavior 1 year later; for the overall model, $\chi^2(86, N = 241) = 164.30, p < .001$. The NNFI and CFI were .96 and .97, respectively. Although the chi square was significant, the other measures of goodness of fit provided strong support for the hypothesized model. The results are presented in Figure 3. All hypothesized links were significant. Moreover, analyses reveal a positive relationship between intentions to persist and actual turnover behavior ($\beta = .28$).

The relationship between turnover intentions and actual turnover behavior was further examined while taking into consideration the notion of choice. Based on SDT (Deci & Ryan, 1985, 1991), it was hypothesized that the link between

motivation and behavior would be especially strong for individuals who felt that they had the choice to stay or to quit their jobs. However, the turnover intentions and behavior link should be much weaker in the absence of choice. Two groups were formed based on the degree of choice participants felt they had toward occupying the same job or changing their occupation by splitting workers at the median (4.6). Correlation coefficients of the relationship between intentions to turnover and actual turnover were obtained for the two groups. As expected, results reveal a low and nonsignificant correlation ($r = .06$) between turnover intentions and actual behavior for the group that had little choice in their behavior. However, the results reveal a moderately high correlation ($r = .48$) for the group that felt they had the choice to leave or to stay.

Discussion

This study tested a motivation model of work turnover positing that intrinsic job rewards, feelings of job competence, and feelings of relatedness toward work colleagues positively influence self-determined work motivation and that the latter positively influences work satisfaction, but negatively influences emotional exhaustion. In turn, work satisfaction and emotional exhaustion are hypothesized to have negative and positive influences, respectively, on turnover intentions. Finally, over time, turnover intentions are expected to eventually translate into turnover behavior. Results from structural equation modeling analyses provide support for the hypothesized model. We believe that the present findings have a number of theoretical implications.

On the Determinants of Work Motivation

A first implication of the present findings is that an important set of predictors of work motivation has been uncovered. Indeed, in the present study, feelings of competence and of relatedness were important predictors of self-determined work motivation. These findings are in line with those that have been documented with respect to the existence of a link between feelings of competence and self-determined motivation in other contexts (e.g., Losier et al., 1993; Vallerand & Reid, 1984). These results provide empirical support for SDT (Deci et al., 1989; Deci & Ryan, 1985, 1991), which proposes that feelings of competence play a causal role in self-determined work motivation.

Several authors have postulated that feelings of relatedness should play a causal role in motivation (e.g., Connell & Wellborn, 1991; Deci & Ryan, 1991; Goodenow, 1992; Ryan, 1995; Ryan, Stiller, & Lynch, 1994). However, the present study represents the first empirical demonstration that feelings of relatedness toward colleagues are positively related to work motivation. Thus, the more positive one's feelings of relatedness toward work colleagues, the more self-

determined one's work motivation. These results provide additional support for SDT (Deci et al., 1989; Deci & Ryan, 1985, 1991), which proposes that feelings of relatedness play a causal role in self-determined work motivation.

The present findings also reveal a significant relationship between intrinsic job rewards (Hackman & Oldham, 1974, 1976) and self-determined motivation (Deci & Ryan, 1985, 1991). Interestingly, these findings put an emphasis on the influence of intrinsic job rewards on work motivation, whereas in past research, the emphasis was placed on the influence of intrinsic job rewards on job satisfaction (Kanfer, 1990). The present results reveal that motivation can act as a mediator between intrinsic job rewards and job satisfaction. Future research on the five types of job rewards proposed by Hackman and Oldham (1976)—skill variety, task identity, task significance, autonomy, and feedback—and their respective relationships with the different types of motivation (i.e., intrinsic motivation, identified regulation, extrinsic motivation, and amotivation) is encouraged as it might lead to both theoretical and applied advances.

Influence of Work Motivation on Turnover Intentions and Behavior

The motivational model proposed herein posits that work motivation has a direct influence on emotional exhaustion and work satisfaction. In turn, these two variables are expected to influence turnover intentions. Finally, intentions are hypothesized to translate into actual turnover behavior. The combined results of Models 1 and 2 (Figures 2 and 3) provide support for these propositions. These findings corroborate past research. Thus, the link between self-determined work motivation and work satisfaction has been well documented: the more self-determined the work motivation, the more satisfied the individual (Harigopal & Kumar, 1982; Ilardi et al., 1993; Keaveney & Nelson, 1993). Other research has also shown that the more self-determined the work motivation, the lower the probability of experiencing emotional exhaustion (Blais et al., 1993; Pedrabissi & Santinello, 1991). The relationship between emotional exhaustion, work satisfaction, and turnover intentions has also been tested in the past. It has been shown that emotional exhaustion has a positive influence on turnover intentions (Firth & Britton, 1989; Singh et al., 1994), while work satisfaction is negatively related to turnover intentions (Irvine & Evans, 1995; Keaveney & Nelson, 1993). However, the present study is the first to show within the confines of the same study that work satisfaction and emotional exhaustion originate from work motivation and lead to turnover intentions.

Finally, based on Azjen and Fishbein's (1977) model, we tested the relationship between turnover intentions and actual turnover behavior. Results provide empirical evidence for Azjen and Fishbein's proposition in that the more people intended to leave their jobs, the more they actually did. We feel that it is important to measure turnover intentions because incorporating behavioral intentions

in the motivational model might best reflect the actual process through which people come to implement behavior. Bad working conditions do not always lead to actual turnover. However, they might lead to intentions that will eventually grow into behavior (Vallerand et al., 1997). These findings are in accord with those of Vallerand et al. and Sarrazin et al. (2001) that also found that self-determined motivation leads to intentions of behavioral persistence that in turn lead to actual behavior in education and sport settings, respectively. It would thus appear that using intentions in the motivational sequence allows us to better predict behavior, especially if it is measured several months or even years down the road.

It should be noted, however, that in line with Deci and Ryan (1985, 1991), a more complete understanding of the turnover intentions–behavior relationship was achieved by taking into consideration the employees' perceptions of choice with respect to staying versus leaving their jobs. Results indicate that the relationship between intentions and behavior was quite low ($r = .06$) when people felt that they did not have a choice, but it was much stronger ($r = .48$) when they felt that they did have a choice. Thus, employees might have intentions to leave their jobs, but might still decide to stay because no other jobs are available, because they need the money, because they have acquired seniority within the actual company; in other words, because they don't have any other choice (Mobley et al., 1979). It should be mentioned that to the best of our knowledge, these findings are the first to show that choice is a crucial variable to consider when the goal is to study the link between turnover intentions and behavior within the purview of a motivational sequence. In fact, it appears that choice might play the role of a catalyst allowing intentions to be translated effectively into behavior. This new function of choice might have important theoretical implications for SDT, as well as applied implications for the work domain. Therefore, future research on this issue appears fruitful.

Limitations and Future Research

Although the present results provide support for the proposed motivational model of work turnover, certain limitations should be noted. First, all participants of the present study were alumni from the same school of administration. As well, the return rate was rather low (24%). It would thus be important for external validity purposes to replicate the present findings with a more representative group of participants. Second, future studies should examine turnover behavior through an objective measure, rather than a self-report measure. Third, because of the reduced number of participants for the second wave of data collection, a compressed model assessing the link between motivation and the job-related outcomes (i.e., satisfaction and emotional exhaustion) including actual turnover behavior was tested. It would be important to replicate this study with a greater number of participants in order to bring further support for the overall model,

including both motivational determinants and outcomes, as well as turnover intentions and behavior.

In sum, the present study provides support for the proposed motivational model of turnover at work. These findings underscore the role of feelings of relatedness and of competence as determinants of self-determined work motivation. In addition, this study has shown how motivation might influence certain work consequences (e.g., satisfaction and emotional exhaustion), which in turn might influence turnover intentions. Finally, the link between turnover intentions and actual turnover was supported. Overall, the present study showed how a motivational sequence derived from elements of SDT and the hierarchical model leads to a better understanding of the motivational processes involved in turnover behavior and paves the way for exciting future research. A final limitation pertains to the fact that several variables known to be related to turnover were not included in the present study. Cotton and Tuttle (1986) found over 20 such variables related to turnover. While it is probably true that by incorporating some of these variables (e.g., commitment, job involvement) in our model we would have been able to predict additional variance in turnover, we nevertheless feel that this strategy is ill advised. Indeed, if we bring together a host of variables with different conceptual and theoretical underpinnings, we create a situation where the model becomes empirical rather than conceptual in nature. Empirical models can predict outcomes. However, conceptual models predict the outcome (turnover) as well as explain the nature of the psychological processes leading to the outcome. Because we seek explanation as well as prediction, it is thus crucial that the variables that are included in a model make sense conceptually. It should be noted, however, that we nevertheless incorporated in the model two variables known to predict turnover; namely, work satisfaction and emotional exhaustion. These variables have been included because past research does support their relation to turnover (e.g., Irvine & Evans, 1995; Keaveney & Nelson, 1993; Pedrabissi & Santinello, 1991) and because they make sense conceptually within the model. Indeed, a lack of self-determined motivation at work can lead people to experience emotional exhaustion and a lack of satisfaction at work. Now that we have validated a conceptual model that includes variables derived from a strong theoretical background (SDT and the hierarchical model) and from the organizational literature, we believe that future research should be geared at testing this model against competing models, as suggested by Hom et al. (1993^J). Eventually, we believe that this strategy should lead to both theoretical and applied benefits.

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- A Denisi or DeNisi? See References and make the necessary corrections.
- B Is Vallerand & Ratelle still “in press”? If it has been published already, provide the date of publication.
- C Is Vallerand & Ratelle still “in press”? If it has been published already, provide the date of publication.
- D Should this be Vallerand, Fortier, & Guay, 1997? Please make the necessary corrections, since you have not already cited Vallerand et al. (1997) in your text (i.e., you should list all authors at the first text mention if there are five or fewer authors).
- E What do you mean by “It” here? Please clarify your meaning.
- F *What* “model”? Please clarify your meaning.
- G Not in the References. Provide the missing reference.
- H 1975 or 1955? See References and provide correct date.
- I You should provide numbers of participants in addition to percentages here. Please make the necessary corrections throughout this paragraph.
- J Hom et al. (1993) is not in the References. Provide the missing reference or the correct date.
- K “de la” or “pour la”? Please correct.
- L “de la” or “pour la”? Please correct.
- M 1955 or 1975? See query H and provide correct date.
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- S Unless you actually consulted Piotrkowski (1985), you should not list it in the References. Instead, you should mention it in a text reference (e.g., “Piotrkowski, 1985, as cited in Galinsky, 1986”). In any case, you must make the necessary corrections to this reference entry and to your text citation. In addition, you must provide Galinsky’s initial(s), as well as the page numbers for the chapter.
- T What does “Liks” mean? Please correct.
- U Not cited in your text. Please cite or delete from the References.
- V DeNisi or Denisi? See query A and make the necessary corrections.
- W Is this still “in press”? If it has been published already, provide the date of publication and the page numbers for the chapter.
- X Shouldn’t this be “Acceptance,” rather than “Acceptation”? Please correct.
- Y Should this be “at the lower boundary,” rather than “at lower bound”? Please correct.

Annotations from 20P0117R2.pdf

Page 1

Annotation 1; Label: Copy editor; Date: 10/15/2002 4:16:20 PM
Change "Universie" to "Universite"

Annotation 2; Label: Copy editor; Date: 10/15/2002 4:17:05 PM
Delete the comma between "Quebec" and "H3C 3P8"

Page 8

Annotation 1; Label: Copy editor; Date: 10/15/2002 4:20:05 PM
Delete one of the brackets after the equation; it should appear as `}}`