



EFFECTIVENESS OF ORGANIZATIONAL EFFORTS TO LOWER TURNOVER INTENTIONS: THE MODERATING ROLE OF EMPLOYEE LOCUS OF CONTROL

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In the current career climate characterized by change and turbulence, employees may demonstrate limited psychological attachment to their employers. Rousseau (1998) suggested that organizations can elicit psychological attachment from employees by reinforcing perceptions of organizational membership and demonstrating care and support for them. The effectiveness of these strategies, however, may depend on individuals' personality traits. In this study, we examined the moderating effect of locus of control in the relationship among four valued aspects of the work environment—information sharing, job significance, opportunity for learning, and availability of rewards for performance—and employees' intentions to stay. In two empirical studies, we found that information sharing, job significance, and locus of control interacted to positively affect intentions to stay and that opportunity for learning, availability of rewards for performance, and locus of control also interacted to increase intentions to stay. Implications of these results for theory building and practice are discussed. © 2009 Wiley Periodicals, Inc.

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With the growing emphasis on individuals' personal control over their careers and external mobility (Arthur & Rousseau, 1996), workers today are likely to have weaker intentions to stay, even at organizational entry, than was the case when careers were characterized by stability. Rousseau (1998) suggested two core

ways that organizations can retain employees: enhancing employees' perceptions of organizational membership and actively demonstrating to them that they are cared for and valued, even though their employment may be temporary. Although we agree with Rousseau's assertions, we believe that some employees may react more favorably to these tactics than others. Testing how the means

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of retaining employees proposed by Rousseau may have differential effects on different groups of employees has both theoretical and practical implications. Theoretically, it may help promote research on retention and turnover, particularly with regard to the role of individual differences within the changed employee-employer relationship. Practically, it is important because in recent years organizations have been struggling to find effective ways to lower employee turnover (Mitchell, Holtom, & Lee, 2001; Rousseau, 2004).

The central purpose of the study explored in this article is to examine the moderating role of the personality trait of locus of control (LOC)—or the extent to which people believe they have control over their own fate (Rotter, 1966). LOC is examined in the relationship

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between employees' perceptions of work environment features that purportedly reinforce organizational membership or demonstrate organizational care and support, on the one hand, and employees' intentions to stay with the employer, on the other. In other words, this study adopts a person-situation interactionist perspective to explore employee retention.

We focus on LOC because careers today are increasingly self-directed (King, 2004). Therefore, individuals' beliefs of being able to control their external environ-

ment (or not) may greatly affect their job change decisions (Spector, 1982). In addition, examining LOC helps promote a dispositional perspective of job change (Barrick & Zimmerman, in press; Ng, Sorensen, Eby, & Feldman, 2007), an alternative theoretical lens to the widely studied situational perspective of job change (e.g., Griffeth, Hom, & Gaertner, 2000).

Our study focuses on four characteristics of the work environment—information sharing, job significance, opportunity for learning, and availability of rewards for performance—for two main reasons. First, these four environment variables fit with Rousseau's (1998) framework. Information sharing and job significance may be helpful to promote

employees' perceptions of organizational membership, whereas opportunities for learning and the availability of rewards seem helpful to demonstrate organizational care and support. Second, recent HR theories have emphasized the importance of increasing power, information, rewards, and knowledge (PIRK) for employees as a tool to enhance organizational effectiveness and lower employee turnover (Vandenberg, Richardson, & Eastman, 1999). The four work environment characteristics we examine here represent the key HR practices to promote PIRK: (1) increasing job significance is a power-related HR practice, (2) enhancing information sharing is an information-related HR practice, (3) increasing the availability of rewards for performance is a rewards-related HR practice, and (4) providing opportunity for learning is a knowledge-related HR practice.

The core dependent variable in this study is intention to stay with the employer. Turnover intent and turnover behavior are closely related. Steel and Ovalle (1984) observed that turnover intent was correlated with turnover at .50 across cumulative studies. A more recent meta-analysis found that the magnitude of the relationship was .45 (Griffeth et al., 2000). Turnover intent, however, is not merely a proxy for turnover behavior. For instance, Doran, Stone, Brief, and George (1991) found that those who had higher turnover intentions at the time of organizational entry had lower subsequent job satisfaction. They reasoned that those who had higher turnover intentions strived for cognitive consistency by perceiving their jobs as less satisfying. Thus, intention to stay is a psychological variable worthy of more attention in its own right.

Theoretical Overview

Rotter (1966) differentiated between *internal* and *external* LOC. *Internals* are those who believe they are the masters of their fate and therefore often are confident, alert, and directive in attempting to control their external environments (Phares, 1976). Furthermore, they often perceive a strong link between their actions and consequences. *Externals* are

those who believe they do not have direct control of their fate and perceive themselves passively in relation to the external environment. They therefore tend to attribute personal outcomes to external factors or luck. Researchers have found that individual LOC affects both work attitudes and behaviors (Ng et al., 2006). As we discuss in more detail here, LOC may also affect the decision process underlying job changes.

Rousseau (1998) suggested that the key to strengthening employees' psychological attachment (and, thus, intention to stay) in the contemporary workplace is to reinforce perceptions of organizational membership, express organizational care and support for employees, or perhaps do both. Strong perceptions of organizational membership exist when individuals and the organization have common interests and individuals perceive that their relationship to the organization forms a sense of "us." Organizations also elicit employees' psychological attachment by demonstrating care and support (Rousseau, 1998). Employees who perceive they are valued and respected are likely to reciprocate with trust and loyalty in the exchange relationship.

Rousseau's (1998) framework is consistent with recent turnover theories. For instance, research increasingly suggests that high-involvement or high-empowerment practices are likely to lower turnover rates (Guthrie, 2001; Huselid, 1995). The key underlying reason is that employees are likely to have a stronger sense of ownership and membership when they are empowered. For instance, Vandenberg et al. (1999) found that providing employees with access to information about the organization is negatively related to turnover intentions. Also, a meta-analysis by McEvoy and Cascio (1985) found that HR strategies aimed at enriching employees' job scope reduced turnover rates.

Another growing stream of literature focuses on how perceptions of organizational support might be the linchpins through which HR practices promote greater intentions to stay. When employees perceive that they are supported and cared for, they are likely to stay with the employer as a form of reciprocation (Eisenberger, Armeli,

Rexwinkel, Lynch, & Rhodes, 2001). To illustrate, Allen, Shore, and Griffeth (2003) found that HR practices that promote growth opportunities (e.g., skills training) and increase the availability of fair rewards lower employee turnover intentions, and the effects are mediated by employee perceptions of organizational support. Rhoades and Eisenberger's (2002) meta-analysis showed that organizational provisions of training and rewards are strongly related to perceptions of organizational support, which in turn are related to turnover intentions ($r = -.51$).

Little is known about the possible influence of LOC on the effectiveness of HR practices in curtailing turnover, although a few studies have investigated it in the context of HR practices or turnover behavior. For instance, some researchers have investigated both LOC and information sharing as independent variables, although they did not examine possible interaction effects between them (Spreitzer, 1995; Vardi, 2000). Regarding job significance, internals are frequently cited as being more proactive than externals in seeking work tasks that have desirable attributes (cf. Judge, Bono, & Locke, 2000), such as tasks that have higher motivating potential. Similarly, some research has examined LOC as a moderator in the task experience-work outcome relationship (e.g., Loneragan & Maher, 2000).

We are aware of no studies examining both LOC and opportunity for learning. Colquitt, LePine, and Noe's (2000) meta-analysis on training motivation, however, found that internals had a stronger motivation to learn than did externals (corrected correlation = .46). Finally, much research to date linking LOC with performance rewards discusses why internals and externals may have different preferences for rewards: internals usually have stronger faith than externals in both effort-performance and performance-reward relationships (Spector, 1982).

Regarding turnover, Blau (1987) found interesting moderating results associated with LOC. Internals exhibited a stronger negative

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relationship between job satisfaction and withdrawal intent than did externals, but they also demonstrated a stronger positive relationship between withdrawal intent and turnover than did externals. Thus, LOC appears to relate to intentions to stay in an intriguing, complicated manner certainly worthy of further investigation.

Enhancing Perceptions of Organizational Membership

The perceived ties between employees and their organizations are strengthened through information sharing and job significance.

Information Sharing

This is the extent to which organizations provide organization-related information to their employees, such as information about

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changes in organizational policies and procedures, financial results, employee and group successes, and customer feedback (Vandenberg et al., 1999). Organization-related information can be distributed to employees through a variety of channels, such as supervisors, group meetings, brochures and newsletters, company Web sites, and mission statements (Argenti, 1998; Soupata, 2005).

Rousseau (1998) suggested that the communication of organization-related information may enhance employees' psychological attachment to their employers because it encourages employees to perceive themselves as core members of the organization and to contribute to organizational goals. In support of this suggestion, Soupata (2005) observed that the success of UPS as the world's largest package delivery company primarily stems from the company's efforts to instill a sense of ownership in employees through information sharing. The organizational justice literature also suggests that employees are likely to react more positively when organizational communication efforts supply adequate information about the

organization (Colquitt, 2001; Greenberg, 1994). Information sharing therefore is expected to increase psychological attachment, and thus intentions to stay.

Hypothesis 1: Information sharing is positively related to employees' intentions to stay.

Job Significance

Another possible way to reinforce stronger perceptions of organizational membership is to create or redesign jobs to be of higher significance in the organization. Such jobs are important in the broader scheme of things: success or failure in them would affect a number of other people at work, as well as organizational performance (Hackman & Oldham, 1980). When employees occupy such jobs, they are likely to perceive themselves as important members of the organization whose work behaviors can influence the well-being of various others in the organization. Job significance should therefore elicit a stronger sense of organizational membership. Not surprisingly, researchers have found that job significance is positively related to employees' reported involvement in their organizations' quality improvement programs (Nasurdin, Jantan, & Peng, 2005). Conversely, when employees work in jobs of little significance, they are likely to see themselves as having limited influence on others at work (Hackman & Oldham, 1980) and therefore perceive themselves as unimportant organizational members with few reasons to stay with the organization.

Hypothesis 2: Job significance is positively related to employees' intentions to stay.

Locus of Control as a Moderator

LOC indicates people's tendency to exert active control over the environment. For instance, Phares (1976) suggests that internals are able to create and shape their work experiences in a way that is most favorable to them. Providing empirical support for this contention, Kahle (1980) found that when subjects were asked to choose between a task that requires luck or skill, internals preferred

a task requiring skill, whereas externals preferred a task requiring luck.

Internals' need to exert control at work may strengthen both the effect of information sharing and job significance on intentions to stay. With respect to information sharing, internals should welcome organizations' efforts to distribute more information to them. For instance, an early field experiment showed that internals receiving detailed information about dental procedures before their dental surgeries had better emotional adjustment during the surgery than internals receiving merely general information (Auerbach, Kendall, & Cuttler, 1976). The authors explained that receiving detailed information about the dental situation satisfied internals' need to fully understand the external environment. Thus, we predict that internals, compared to externals, should be more likely to react positively when information sharing in organizations is high.

Hypothesis 3a: LOC moderates the positive relationship between information sharing and intentions to stay such that the relationship will be stronger when employees have an internal versus an external LOC.

With respect to job significance, internals should be more likely than externals to value positive work attributes because internals often strive for positive task experiences that align with their orientation toward exerting more control and having a greater impact in organizations (Judge et al., 2000; Spector, 1982).

Hypothesis 3b: LOC moderates the positive relationship between job significance and intentions to stay such that the relationship will be stronger when employees have an internal versus an external LOC.

A logical extension of the above reasoning is predicting a three-way interaction. Internals should react positively to organizational efforts to distribute more information to them. This positive reaction may be even stronger if the jobs are highly significant because internals may be especially motivated to maintain control over important jobs, and internals work-

ing in more complex jobs may be more likely to use or benefit from information shared by the organization. Thus, when a high degree of job significance is accompanied by a high degree of organization-related information sharing, internals are more likely to have their needs for exercising control at work fulfilled.

Hypothesis 3c: Information sharing, job significance, and employee LOC interact to affect intentions to stay such that the relationship will be strongest when information sharing is high, job significance is high, and employees have an internal versus an external LOC.

Demonstrating Organizational Care and Support

Another way organizations can attempt to increase employees' likelihood to stay is to exhibit care and support for their members. The two primary means for accomplishing this are to provide opportunities for learning and rewards for performance.

Opportunity for Learning

There is a growing belief that individuals shape their own careers (King, 2004; Sullivan, Carden, & Martin, 1998). This interest in career self-management accentuates the importance of learning emphasized in recent years. Acquiring knowledge and skills (through learning) often benefits one's career (DeFillippi & Arthur, 1994) because it is a form of human capital investment that is likely to be rewarded in the labor market, for example, through higher salary or more promotions (Ng, Eby, Sorensen, & Feldman, 2005). Organizations can provide employees with a variety of channels for learning, including formal training and development programs, workshops, informal sharing groups, mentoring, job rotations, international assignments, promotions, and demotions (e.g., Stilwell, Liden, Parsons, & Deconinck, 1998). Because employees increasingly seek out opportunities for

Researchers have found that job significance is positively related to employees' reported involvement in their organizations' quality-improvement programs.

learning at work, organizations that provide them should help elicit employees' perceptions of reciprocation in terms of stronger attachment to the organization through greater intentions to stay.

Hypothesis 4: Opportunity for learning is positively related to employees' intentions to stay.

Availability of Rewards for Performance

Organizations can demonstrate that they care for and support employees by offering performance rewards. The availability of

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such rewards is an important source of work motivation (Rynes, Gerhart, & Minette, 2004), and researchers have found it has become an important element in employment relationships today (Tsui, Pearce, Porter, & Tripoli, 1997). An increase in availability of rewards for performance may elicit employees' reciprocation to their organizations, manifested in greater willingness to stay with the organization and contribution to its collective goal. Supporting this rationale, studies have shown that organizations' recognition of employee contributions motivates individuals to expend extra effort in various aspects of their jobs to help enhance organizational effectiveness (Forrester, 2000; Nielsen & Pedersen, 2003; Wayne, Shore, Bommer, & Tetrick, 2002). Following this logic, we expect that employees' intentions to stay will

increase when availability of rewards for individual performance increases.

Hypothesis 5: Availability of rewards for performance is positively related to employees' intentions to stay.

Locus of Control as a Moderator

LOC may be closely related to achievement motivation. In fact, it has been suggested that

the major reason people desire control is that it increases the predictability of the effort-outcome link (Parker, 1993). Internals often perceive a strong link between their actions and expected goals and outcomes (Ng et al., 2006). Because of this achievement motivation, we suggest that both the effect of opportunity for learning and availability of rewards for performance may be stronger for internals than for externals. With respect to opportunity for learning, internals, who have greater expectancy of desired outcomes, are more likely to see the link between their equipped knowledge and its associated benefits and therefore are more likely to stay with the organization as a form of reciprocation.

Hypothesis 6a: LOC moderates the positive relationship between opportunity for learning and intentions to stay such that the relationship will be stronger when employees have an internal versus an external LOC.

With respect to rewards for individual performance, their availability directly fulfills internals' desire to achieve (Yukl & Latham, 1978) and their preference for rewards that are based on their behaviors (Cable & Judge, 1994). As a result, a stronger sense of reciprocation is likely to be generated and accompanied by greater intentions to stay with the organization.

Hypothesis 6b: LOC moderates the positive relationship between availability of rewards for performance and intentions to stay such that the relationship will be stronger when employees have an internal versus an external LOC.

A logical extension of this reasoning is the prediction of a three-way interaction. Opportunity for learning in the presence of job rewards should increase the value that internals attach to learning. According to expectancy theory (Vroom, 1964), for those who have a high expectancy of successful learning (e.g., internals), the presence of rewards may enhance their motivation because the availability of rewards increases the perceived instrumentality or importance of successful learning. Opportunity for learning and the

availability of rewards therefore may interact with LOC to increase intentions to stay. That is, when a high degree of opportunity for learning is supplemented by a high degree of availability of rewards, internals are more likely to see the benefits of skills acquisition—the attainment of the available rewards for performance. The resulting reciprocation in terms of intentions to stay with the organization should be greatest under these conditions.

Hypothesis 6c: Opportunity for learning, availability of rewards for performance, and employee LOC interact to affect intentions to stay such that the relationship will be strongest when opportunity for learning is high, the availability of rewards for performance is high, and employees have an internal versus an external LOC.

Elements of Study 1

Data were collected from a nationwide financial company that has multiple branches in the United States and employs approximately 800 employees. The human resource director sent employees of branches selected to participate in the study an invitation to take an online survey, accompanied with the address of the Web site where the survey was located. Within two months, 206 completed surveys were received from employees, representing a response rate of 87%. The average age was 33, average organizational tenure was 2.8 years, 75% had at least some college education, 50% were Caucasian, 55% were female, and 83% were in nonmanagerial positions.

Measures

In terms of independent variables, *locus of control* ($\alpha=.72$) was measured by Presson, Clark, and Benassi's (1997) 6-item scale. These authors observed that this scale was predictive of one's depression. In fact, many researchers have noted that LOC is closely related to mental well-being (Benassi, Sweeney, & Dufour, 1988; Presson & Benassi, 1996). A sample item is "My life is determined by my own actions." Higher scores indicated an internal LOC.

The four work environment variables were measured using existing measurement scales. *Information sharing* ($\alpha=.75$) was measured by Matthews, Diaz, and Cole's (2003) 5-item scale. These items ask the extent to which respondents agree that they have access to the information about different aspects of the organization, such as financial records, policies, procedures, databases, and goals. Because the information encompassed by these five aspects is readily distributable to employees in virtually all firms, this scale should have acceptable external validity. In fact, Matthews et al. (2003) developed this scale based on multiple employee samples and showed that it was significantly related to feelings of psychological empowerment. A sample item is "Employees are provided with financial records of the company."

Job significance ($\alpha=.86$) was measured by the 3-item scale in the Job Diagnostic Survey (Hackman & Oldham, 1980), the most frequently used scale to measure task experiences. Fried and Ferris (1987) observed that this scale demonstrated acceptable predictive validity across studies. For instance, job significance was positively related to job satisfaction, growth satisfaction, and work motivation. A sample item from this scale is "My job is one where a lot of other people can be affected by how well the work gets done."

Opportunity for learning ($\alpha=.86$) was measured by four items adapted from Vandenberg et al.'s (1999) scale. Based on a sample of more than 3,000 employees, Vandenberg et al. (1999) observed that this scale demonstrated predictive validity; it was positively related to favorable work attitudes such as organizational commitment and negatively related to turnover intentions. A sample item is "I receive ongoing training, which helps me do my job better."

Availability of rewards for performance ($\alpha=.89$) was measured using Vandenberg et al.'s (1999) 7-item scale. These items assess the extent to which reward allocations in an organization depend on how well an

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individual performs. Working with the same sample of employees noted above, Vandenberg et al. (1999) observed that, like opportunity for learning, this scale was positively related to organizational commitment and negatively related to turnover intentions. A sample item is “If I perform my job well, I am likely to be promoted.”

It is not uncommon to measure intentions to stay and turnover with single-item scales (Lounsbury & Hoopes, 1986; O’Neil & Mone, 1998; Schneider & Bowen, 1985; Spector & Jex, 1991; Thompson & Prottas, 2005). Thus, we measured intentions to stay with the sole item, “It is likely that I will leave the organization in the next 12

Gender and race are biological differences that have been found to be related to turnover intentions, with female and Caucasian employees less likely to leave.

months” (reverse-coded). Higher scores indicated greater intentions to stay.

Researchers have found that many LOC scales are susceptible to the influence of social desirability (Chung & Ding 2002; Kestenbaum, 1976), largely because individuals tend to hold a self-serving bias that their fate is well within their personal control. Thus, like other studies investigating LOC (e.g., Bugaighis, Schumm, Bollman, & Jurich, 1987; Premeaux & Bedeian, 2003), *social desirability* was measured and used as a control variable to reduce concerns about response bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Although Crowne and Marlowe’s (1960) 33-item scale of social desirability is most frequently used in the literature (Tanaka-Matsumi & Kameoka, 1986), there are also growing concerns that this scale may be too lengthy. Thus, we used Hays, Hayashi, and Stewart’s (1989) 5-item shortened version of Crowne and Marlowe’s scale ($\alpha=.68$). A sample item is “I am always courteous, even to people who are disagreeable.”

Finally, the sociodemographic variables of *gender, race, organizational tenure, education level, and job level* were used as controls. Gender and race are biological differences that have been found to be related to

turnover intentions, with female and Caucasian employees less likely to leave (Frone, 2000; Thompson & Prottas, 2005). Organizational tenure captures the length of the employment relationship, and those with longer tenure have been found to have lower turnover intentions (Rafferty & Griffin, 2006). There is also research evidence that educational level and job level are related to withdrawal intentions (Cole & Bruch, 2006; Grawitch, Trares, & Kohler, 2007; Ng & Feldman, in press).

Evaluating Common-Method Bias

Because all measurement scales were self-reported, we took extra steps to examine the influence of common-method bias in the study. Specifically, we employed three techniques using confirmatory factor analysis (CFA) and evaluated model fit according to various fit indicators, including the χ^2 goodness-of-fit test, Tucker-Lewis index (TLI), comparative fit index (CFI), and root mean square error of approximation (RMSEA). Hu and Bentler (1999) suggest that a value close to .95 is reflective of good fit for TLI and CFI, and RMSEA values close to .06 are indicative of reasonable model fit.

In the first analysis, we used CFA to test our measurement model (Anderson & Gerbing, 1988) by examining the correlations among factors. We specified a model using the six core variables of interest: LOC, information sharing, job significance, opportunity for learning, availability of rewards for performance, and intentions to stay. This model demonstrated acceptable fit ($\chi^2/df=568.29/285$, TLI=.96, CFI=.96, RMSEA=.07). Next, we alternately constrained each pair-wise factor correlation to a value of 1.0 and examined whether model fit would be significantly worsened in each case as assessed by the traditional test of change in χ^2 (James, Mulaik, & Bret, 1982). As demonstrated by others (Edwards, 2001; Mallard & Lance, 1998), this procedure was used to determine the empirical distinctness of the six factors. We found that in each case, constraining the factor correlations significantly worsened model fit

($\chi^2/\Delta df$ ranged from 66.1/1 to 232.17/1), suggesting that our six constructs were empirically distinctive from one another.

In the second analysis, we performed a single-factor test in which all items were specified to load on one latent factor (cf. Iversen & Maguire, 2000; Mossholder, Bennett, Kemery, & Wesolowski, 1998). The use of this procedure is based on the logic that if common-method bias exists, specifying a single factor should be sufficient to account for all the variance in the data. We found that this single-factor model, however, demonstrated poor fit with the data ($df=1081.57/299$, $TLI=.88$, $CFI=.89$, $RMSEA=.12$).

Next, we performed the same single-factor test using only the four work environment features to ensure that the perceptions of work environment were distinct from one another. Once again, we found that the single factor model demonstrated rather poor fit ($\chi^2/df=688.05/152$, $TLI=.89$, $CFI=.90$, $RMSEA=.14$). Furthermore, relatively speaking, fit for the single-factor model was much worse than for our hypothesized model specifying four latent factors ($\chi^2/df=299.09/146$, $TLI=.97$, $CFI=.97$, $RMSEA=.07$). Overall, the results illustrate that the observed covariance among the variables of interest reflect substantive relationships rather than purely methodological artifacts.

In the third analysis, we examined whether social desirability might have affected individual responses. According to Podsakoff et al. (2003), controlling for social desirability is one acceptable alternative to detect and reduce the bias associated with using common measurement methods. Thus, we first ran a CFA model with our six core variables of interest and our measure of social desirability as latent factors. This model demonstrated acceptable fit ($\chi^2/df=793.33/414$, $TLI=.95$, $CFI=.95$, $RMSEA=.06$). More important, when we constrained the factor correlations between social desirability and the other factors to zero, the $\chi^2/\Delta df$ (38.52/6) was statistically significant ($p<.05$), demonstrating that the inclusion of pair-wise factor correlations with social desirability in the CFA model actually improved model fit. These results suggest that social desirability may play a role in explaining the covariance among latent constructs.

Thus, we controlled for its effect in subsequent regression analyses.

Results of Study 1

Table I presents the means, standard deviations, and correlations from study 1. Regression results for hypotheses 1 to 3 are shown in Table II. Following Aiken and West's (1991) recommendation, variables were centered before the interaction terms were created to reduce nonessential multicollinearity. Because two-way interaction effects were statistically nested within the three-way interaction effect, we focused on the three-way interaction effect, even though we still reported the results of testing for two-way interaction effects.

We found that information sharing had a positive effect on intentions to stay above and beyond the control variables, whereas job significance did not. Thus, hypothesis 1 received support, but hypothesis 2 did not.

Hypothesis 3a predicted that information sharing and LOC would interact to relate to intentions to stay. We did not find support for this interaction effect or for hypothesis 3b, which predicted that job significance and LOC would interact to relate to intentions to stay. Finally, hypothesis 3c predicted that information sharing, job significance, and LOC would interact to relate to intentions to stay. Our results showed that this three-way interaction effect was not statistically significant. Thus, hypotheses 3a, 3b, and 3c were not supported.

Regression results for testing hypotheses 4 to 6 are shown in Table III. Hypotheses 4 and 5 were main effect hypotheses. They suggested that opportunity for learning and availability of rewards for performance, respectively, would be positively related to employees' intentions to stay. As shown in the table, the two independent variables had positive effects on intentions to stay above and beyond the control variables.

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T A B L E I Means, Standard Deviations, and Correlations Among Variables in Study 1 (N=206)

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender ^a	—											
2. Race ^b	.01	—										
3. Organization tenure	.06	-.04	—									
4. Job level ^c	-.16*	-.02	.37**	—								
5. Education level ^d	-.22**	-.06	.14*	.20**	—							
6. Social desirability	.11	.01	-.18*	-.10	-.09	(.68)						
7. Locus of control	-.05	.05	.02	.02	-.04	.30**	(.72)					
8. Information sharing	-.03	.08	-.16*	.00	-.03	-.01	.22**	(.75)				
9. Job significance	-.21**	.05	.05	.24**	-.09	.20**	.44**	.38**	(.86)			
10. Availability of rewards for performance	-.01	.03	.08	-.03	-.02	.09	.52**	.58**	.47**	(.89)		
11. Opportunity for learning	.01	.09	.06	-.07	-.06	.12	.39**	.54**	.50**	.69**	(.86)	
12. Intentions to stay	.18*	.03	.06	-.03	-.14*	.34**	.27**	.23**	.24**	.42**	.43**	—
Mean	1.55	1.50	2.84	1.15	3.01	3.77	4.17	3.01	3.31	3.57	3.73	3.82
Standard deviation	0.50	0.46	3.95	0.40	1.00	0.64	0.51	0.74	1.01	0.84	0.83	1.10

Internal consistency estimates (coefficient alphas) are provided in parentheses.

^a1= male, 2= female.

^b1= white, 2= nonwhite.

^c1= employee, 2= manager, 3= senior manager.

^d1= some high school, 2= high school graduate, 3= some college, 4= associate's degree, 5= bachelor's degree, 6= postgraduate degree.

* $p < .05$

** $p < .01$

TABLE II Study 1 Regression Results for Hypotheses 1-3: Dependent Variable = Intentions to Stay

	Step 1	Step 2	Step 3
Control variables			
Gender ^a	.08	.07	.07
Race ^b	-.02	-.01	-.01
Organization tenure	.15*	.15*	.15*
Job level ^c	-.02	-.02	-.02
Education level ^d	-.14*	-.14*	-.14*
Social desirability	.31**	.29**	.29**
R^2	.15**	.15**	.15**
Main effects			
Information sharing	.22**	.20*	.21*
Job significance	.02	-.02	-.02
LOC	.10	.15*	.15*
ΔR^2	.07**	.07**	.07**
Two-way interaction terms			
Information sharing \times Job significance		-.13	-.13
Information sharing LOC		.09	.10
Job significance LOC		.09	.09
ΔR^2		.02	.02
Three-way interaction term			
Information sharing \times Job significance \times LOC			-.02
R^2			.00
Total R^2	.22**	.24**	.24**
Adjusted R^2	.18**	.18**	.18**
F -value	4.78**	3.96**	3.63**

$N=206$. LOC = Locus of control. Regression coefficients represent standardized parameters (betas).

^a1= male, 2= female.

^b1= white, 2= nonwhite.

^c1= employee, 2= manager, 3= senior manager.

^d1= some high school, 2= high school graduate, 3= some college, 4= associate's degree, 5= bachelor's degree, 6= postgraduate degree.

† $p < .10$

* $p < .05$

** $p < .01$

Thus, hypotheses 4 and 5 received full support.

Hypothesis 6a predicted that opportunity for learning and LOC would interact to relate to intentions to stay. We found marginal support for this hypothesis. We did not find support for hypothesis 6b, which predicted that availability of rewards for performance and LOC would interact to relate to intentions to stay.

Finally, hypothesis 6c predicted that the three independent variables would interact to relate to intentions to stay such that the relationship would be strongest when opportunity for learning, availability of rewards for performance, and LOC were high. We found

that this three-way interaction effect was statistically significant. Furthermore, the three-way interaction explained 4% of variance. To determine the direction of the significant interaction effects, we followed Aiken and West's (1991) recommendation to examine the simple slope of intentions to stay regressed on opportunity for learning at different levels of availability of rewards for performance and LOC (1 SD above or below the mean). Figure 1 illustrates this three-way interaction effect. As shown in the figure, the positive relationship between opportunity for learning and intentions to stay was strongest when both availability of rewards for performance and LOC were high (internal), even though there

TABLE III Study 1 Regression Results for Hypotheses 4-6: Dependent Variable = Intentions to Stay

	Step 1	Step 2	Step 3
Control variables			
Gender ^a	.07	.06	.06
Race ^b	-.04	-.02	-.02
Organization tenure	.08	.08	.07
Job level ^c	.02	.03	.04
Education level ^d	-.13*	-.12	-.12
Social desirability	.28**	.28**	.28**
<i>R</i> ²	.14**	.14**	.14**
Main effects			
Learning	.30**	.32**	.41**
Rewards	.19*	.20*	.21*
LOC	-.04	-.03	.06
<i>R</i> ²	.18**	.18**	.18**
Two-way interaction terms			
Learning × Rewards		.04	.06
Learning × LOC		.15 [†]	.07
Rewards × LOC		.01	-.04
ΔR^2		.03	.03
Three-way interaction term			
Rewards × Learning × LOC			-.28**
ΔR^2			.04**
Total <i>R</i> ²	.32**	.35**	.39**
Adjusted <i>R</i> ²	.29**	.30**	.34**
<i>F</i> -value	8.10**	6.80**	7.28**

N=206. Learning = Opportunity for learning. Rewards = Availability of rewards for performance. LOC = Locus of control. Regression coefficients represent standardized parameters (betas).

^a1= male, 2= female.

^b1= white, 2= nonwhite.

^c1= employee, 2= manager, 3= senior manager.

^d1= some high school, 2= high school graduate, 3= some college, 4= associate's degree, 5= bachelor's degree, 6= postgraduate degree.

[†]*p*<.10

**p*<.05

***p*<.01

was only a small difference in the end points for high rewards, high opportunity of externals versus internals. Overall, hypothesis 6c received support.

Finally, we reran the analyses without using social desirability as a control variable to determine whether social desirability was a contributing factor to the results found above. This is important in light of the observation that social desirability was a significant predictor in the regression models tested (see Tables II and III). When we removed social desirability from the regression model, however, the pattern of significant results remained largely

unchanged, although some of the parameter estimates were altered slightly. Changes of relatively large magnitude included the change from .21 to .14 for the main effect of information sharing reported in Table II, the change from .15 to .24 for the main effect of LOC in Table II, and the change from .06 to .14 for the main effect of LOC in Table III.

In summary, we found some support for the main effects of work environment variables on employees' intentions to stay, but we did not find much support for our predicted two-way interaction effects. Finally, we found support for one of the three-way

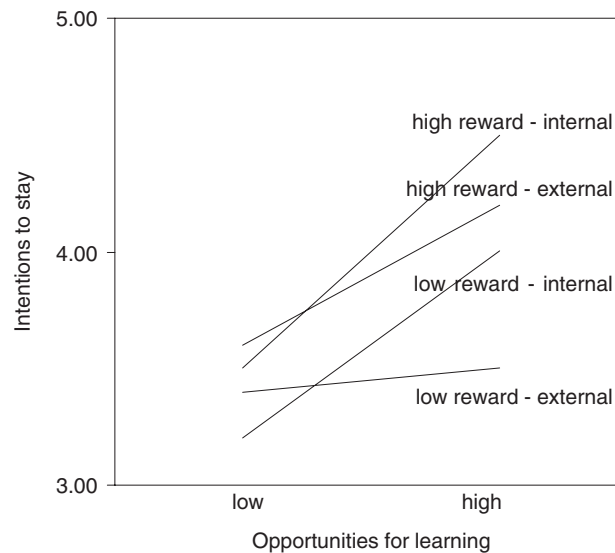


FIGURE 1. Three-Way Interaction Effect Among Opportunities for Learning, Availability of Rewards for Performance, and Locus of Control on Employees' Intentions to Stay (Study 1).

To present the interaction effects more clearly, the y -axis starts with the value of 3 instead of 1 (the minimum point of the 5-point measurement scale). Reward = Availability of rewards for performance. Internal = Internal locus of control. External = External locus of control.

interaction effects we proposed: the relationship between opportunities for learning and intentions to stay was strongest when availability of rewards for performance was high and employees had internal LOC.

Elements of Study 2

Study 1 did not find support for the three-way interaction effect proposed among information sharing, job significance, and LOC (hypothesis 3c). To examine the tenability of this interaction effect in a different context, we collected additional data from a U.S. restaurant chain that employs approximately 900 employees. Surveys were administered via an online Web site. The human resource director sent employees of branches selected to participate in the study an invitation to complete an online survey, accompanied with the address of the Web site where the survey was located. A drawing with three \$100 cash prizes was set up to encourage participation. Within two months, 190 responses were received from employees, representing a response rate of approximately 65%. The average age of respondents was 29,

average organizational tenure was 3.2 years, 72.5% had at least some college education, 90% were Caucasian, 59% were women, and 80% were in nonmanagerial positions.

Measures

As in study 1, *locus of control* ($\alpha=.72$) was measured by Presson et al.'s (1997) 6-item scale; once again, higher scores indicated an internal LOC. As in study 1, *information sharing* ($\alpha=.72$) was measured by Matthews et al.'s (2003) 5-item scale. *Job significance* ($\alpha=.88$) was measured using Hackman and Oldham's (1980) 3-item scale. As in study 1, intentions to stay was measured by a single item. Hays et al.'s (1989) measure of social desirability ($\alpha=.66$) was again used as a control variable, as were gender, race, organizational tenure, education level, and job level.

Evaluating Common-Method Bias

We performed the same series of analyses as in study 1 to evaluate the influence of common-method bias on our data. In the first analysis, we conducted a measurement model

CFA including the four core variables of interest: LOC, information sharing, job significance, and intentions to stay. We found that the model demonstrated marginally acceptable fit ($\chi^2/df=195.68/85$, TLI=.85, CFI=.88, RMSEA=.08). Next, we alternately constrained each pair-wise factor correlation to a value of 1.0 and examined whether the model fit would be significantly worsened in each case. In each case, constraining the factor correlations significantly worsened model fit ($\chi^2/\Delta df$ ranged from 43.43/1 to 158.45/1), suggesting that the four constructs were empirically distinct from one another.

In the second analysis, we performed a single-factor test with all items specified to load on one latent factor. This single-factor model demonstrated poor fit ($\chi^2/df=396.64/90$, TLI=.58, CFI=.64, RMSEA=.16). Next, we performed the same single-factor test using only the two work environment characteristics (information sharing and job significance). This model also had poor fit ($\chi^2/df=117.78/20$, TLI=.63, CFI=.74, RMSEA=.17). Comparatively speaking, model fit was much worse than in our hypothesized model specifying two latent factors ($\chi^2/df=48.41/19$, TLI=.89, CFI=.93, RMSEA=.08). Thus, as in study 1, these results

provide evidence that common-method bias is not a major concern.

Finally, we once again examined whether social desirability might have affected individual responses. Results from our CFA model, including the four core variables of interest and social desirability, demonstrated acceptable fit ($\chi^2/df=297.51/161$, TLI=.89, CFI=.91, RMSEA=.07). More important, when we constrained the factor correlations between social desirability and the remaining factors to zero, the $\chi^2/\Delta df$ (56.03/6) was statistically significant ($p<.05$), suggesting that the inclusion of pair-wise factor correlations with social desirability in the CFA model had improved model fit. These results again indicate that social desirability might play a role in observed relationships among the latent constructs. Thus, we controlled for its effect in subsequent regression analyses.

Results of Study 2

Table IV presents the means, standard deviations, and correlations from study 2. Regression results are presented in Table V. We

TABLE IV Means, Standard Deviations, and Correlations Among Variables in Study 2 (N=190)

Variable	1	2	3	4	5	6	7	8	9	10
1. Gender ^a	—									
2. Race ^b	-.05	—								
3. Organization tenure	-.02	-.03	—							
4. Job level ^c	-.26**	-.10	.38**	—						
5. Education level ^d	-.12	-.13	.17*	.29**	—					
6. Social desirability	.10	-.04	-.02	.04	.12	(.66)				
7. Locus of control	.02	.03	.04	.11	.04	.32**	(.72)			
8. Information sharing	-.11	.09	.02	.02	-.10	.05	.14	(.72)		
9. Job significance	.13	.07	.12	.22**	.04	.43**	.32**	.18*	(.88)	
10. Intentions to stay	.01	-.09	.14	.30**	-.10	.24**	.26**	.12	.35**	—
Mean	1.59	1.10	3.20	1.24	3.07	3.94	4.15	2.96	4.08	3.80
Standard deviation	0.48	0.50	5.07	0.51	1.10	0.60	0.46	0.72	0.68	1.21

Internal consistency estimates (coefficient alphas) are provided in parentheses.

^a1= male, 2= female.

^b1= white, 2= nonwhite.

^c1= employee, 2= manager, 3= senior manager.

^d1= some high school, 2= high school graduate, 3= some college, 4= associate's degree, 5= bachelor's degree, 6= postgraduate degree.

* $p<.01.05$

** $p<.01$

TABLE V Study 2 Regression Results for Hypotheses 1-3: Dependent Variable = Intentions to Stay

	Step 1	Step 2	Step 3
Control variables			
Gender ^a	-.02	-.02	-.01
Race ^b	-.11	-.11	-.11
Organization tenure	.05	.04	.03
Job level ^c	.26**	.25**	.26**
Education level ^d	-.21**	-.20**	-.20**
Social desirability	.06	.07	.07
<i>R</i> ²	.19**	.19**	.19**
Main effects			
Information sharing	.09†	.09†	.13*
Job significance	.23**	.24**	.24**
LOC	.15*	.14*	.16*
ΔR^2	.09**	.09**	.09**
Two-way interaction terms			
Information sharing \times Job significance		-.01	-.02
Information sharing LOC		.09	.09
Job significance LOC		.03	.03
ΔR^2		.01	.01
Three-way interaction term			
Information. sharing \times Job significance \times LOC			-.14*
ΔR^2			.02*
Total <i>R</i> ²	.28**	.29**	.31**
Adjusted <i>R</i> ²	.23**	.23**	.24**
<i>F</i> -value	6.55**	5.04**	4.98**

N=190. LOC = Locus of control. Regression coefficients represent standardized parameters (betas).

a1= male, 2= female.

b1= white, 2= nonwhite.

c1= employee, 2= manager, 3= senior manager.

d1= some high school, 2= high school graduate, 3= some college, 4= associate's degree, 5= bachelor's degree, 6= postgraduate degree.

† $p < .10$

* $p < .05$

** $p < .01$

found that both information sharing and job significance had positive effects on intentions to stay above and beyond the control variables. Thus, hypotheses 1 and 2 received support.

Hypotheses 3a and 3b were not supported. That is, the two-way interaction effects between information sharing and LOC and between job significance and LOC were not statistically significant. However, the three-way interaction effect among information sharing, job significance, and LOC was statistically significant. The explained variance for this three-way interaction was modest (2%). Figure 2 illustrates this three-way

interaction effect. As shown in the figure, the positive relationship between job significance and intentions to stay was strongest when both information sharing and LOC were high (internal), as expected. Thus, hypothesis 3c received support.

Finally, as in study 1, we reran our analyses without social desirability as a control variable. When we removed social desirability from the regression model, the pattern of significant results remained largely unchanged, but one change of relatively large magnitude was that from .16 to .20 for the main effect of LOC when we excluded social desirability.

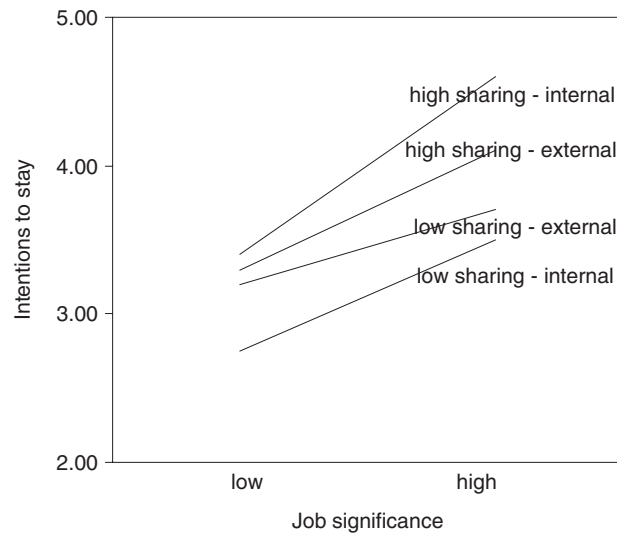


FIGURE 2. Three-Way Interaction Effect Among Information Sharing, Job Significance, and Locus of Control on Employees' Intentions to Stay (Study 2).

Note. To present the interaction effects more clearly, the y-axis starts with the value of 2 instead of 1 (the minimum point of the 5-point measurement scale). Sharing = Information sharing. Internal = Internal locus of control. External = External locus of control.

Discussion

This study contributes to turnover literature in several ways. First, while the predominant research focus over the past few decades has been on the effects of work environment on employee turnover decisions, relatively few studies have examined personality differences in turnover intentions as responses to work environment perceptions. Most research to date has assumed that all employees react favorably to organizational HR practices. Throughout this study, we emphasized that extra care should be taken to identify the features of the work environment that are useful for retaining employees. Furthermore, we suggested that the ability of HR policies and programs—specifically those designed to reinforce organizational membership and demonstrate organizational care and support—to effectively curb turnover is highly dependent on employees' LOC. Our findings demonstrate that the turnover literature may benefit most by adopting a person-situation interactionist perspective rather than a purely individual or situational view.

The second contribution of our study is the usefulness of Rousseau's framework as a theoretical foundation for turnover research. Very little empirical effort has been made to examine the two general mechanisms of enhancing employee loyalty highlighted by Rousseau (1998). Our results suggest some important antecedents of intentions to stay within the context of today's turbulent career climate (Arthur & Rousseau, 1996), revitalizing research in this area. Given the fact that employees today are more self-directed (King, 2004) and are likely to experience increasingly weaker forms of psychological attachment to their organizations (Mitchell et al., 2001; Rousseau, 2004), the organizational actions necessary to retain employees also may need to be modified and updated. Accordingly, our findings provide empirical evidence of important work environment features based on Rousseau's (1998) assertions that deserve further consideration in contemporary turnover theories.

Implications for Practice

Our findings also have practical implications for organizational turnover. Specifically, this

study shows managers that both work environment features and individual differences play an important role in retaining employees. Firms that are able to modify the work environment to enhance perceptions of organizational membership, add features that show care and support for their employees, and have employees with an internal LOC are more likely to succeed at increasing employees' loyalty. In addition, because external LOC appears to contribute to lower intentions to stay in general, managers may want to pay special attention to those specific employees. In particular, managers may be able to convince externals that indirect control at work is feasible. This, for example, could be achieved by cultivating interpersonal relationships (e.g., close mentorship, group cohesiveness), so that employees with an external LOC come to believe that their trusted colleagues can help them maintain control at work. These actions may spur externals to react more favorably to organizational efforts aimed at reinforcing membership or demonstrating care and support, thus increasing employee retention. Similar arguments were proposed by Cicirelli (1987), who found that patients who have a stronger belief in the influence of powerful others, such as health care staff, were more adept at adjusting to their patient role. The author suggests that this finding reflects the fact that patients tend to trust and cooperate with health care staff when they believe that the staff members will act in their best interest.

Given the pattern of results we found and the cumulative evidence that internals have higher job performance (Ng et al., 2006), it makes sense for organizations to select and hire employees based on their levels of LOC. Indeed, in a recent study of hiring practices and subsequent turnover, Barrick and Zimmerman (in press) found that unlike prehire attitudes, personality traits (e.g., conscientiousness and emotional stability) and life history experiences consistently predict voluntary turnover over time. Our findings provide some additional support for this dispositional approach to selection.

Also, for organizations that emphasize high-performance work systems, having

employees with strong control beliefs may be particularly important. High-performance work systems often emphasize increasing employees' power, information, reward, and knowledge (Vandenberg et al., 1999), and as we have illustrated, employees with internal control beliefs are likely to respond more favorably to HR practices that promote these four aspects. The challenge, however, is that people increasingly believe that their lives are controlled by outside forces (Twenge, Zhang, & Charles, 2004). Therefore, identifying candidates with strong control beliefs may not be easy. Organizations may need to seriously consider the balance of curbing high turnover rates, the cost of cultivating a workforce that has strong control beliefs, and retention strategy choices.

Implications for Future Research

This study also provides many avenues for future research. For instance, researchers should investigate the more finely grained elements of the four independent variables examined here and their relationships with employee LOC to better understand the retention process. In terms of information sharing, it is possible that some organization-related information is more relevant to increasing internals' intentions to stay, whereas other information may be more relevant for externals. Furthermore, information obtained from supervisors as opposed to other channels may have different effects on internals' versus externals' intentions to stay. With respect to the role of job significance, future research would benefit from considering job scope and complexity more broadly by including other evaluation sources of job characteristics beyond self-reports (Spector & Jex, 1991; Wong, Hui, & Law, 1998).

Similarly, more specific measures of opportunities for learning and availability of rewards for performance may have differential effects on intentions to stay. For

For organizations that emphasize high-performance work systems, having employees with strong control beliefs may be particularly important.

example, it may be that learning certain types of knowledge (e.g., hard versus soft skills) is more appealing to certain groups of workers (say, internals versus externals). Rewards also may take a variety of forms, such as pay raises, bonuses, promotions, and verbal praises from others, and each may have different effects on internals versus externals. Finally, other potentially relevant individual differences (e.g., personality, trait affect, intelligence) might exhibit moderating effects similar to LOC. Our primary point is that using more specific measures may help shed light on the psychological experiences of employees with internal versus external LOC and the thought processes governing intentions to stay.

Limitations of the Study

The interpretation of this study's findings has to take into account at least four limitations. First, employees' perceptions of the work environment characteristics and their intentions to stay were self-reported. Thus, there may be a problem of common-method bias. We performed numerous CFAs to assess this problem and found that common-method bias was not a serious threat to our findings, however. The second limitation of this study is the cross-sectional nature of the data. Therefore, causality cannot be inferred. We found some support for a complex interactive pattern of relationships, suggesting that our reasoning for treating those independent variables as

predictors of employees' intentions to stay has at least some theoretical merit. Third, Rousseau's (1998) theoretical work was originally framed from an organizational identification perspective rather than a turnover or retention perspective. Researchers have shown that organizational identification and intentions to stay are closely and positively related (Riketta, 2005), however. Finally, and related to the third limitation, we did not explicitly measure psychological attachment, even though we used this construct to conceptually explain how HR practices may increase employees' intentions to stay. Previous studies have shown that measures of psychological attachment and intentions to stay or leave are often highly correlated with one another (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002; Riketta, 2005).

Conclusion

The career landscape has been characterized by change and turbulence in recent years (Arthur & Rousseau, 1996), thereby influencing determinants of employees' attachment to organizations. This study illustrates that employees' reactions to HR retention practices may be highly dependent on their levels of LOC. Furthermore, LOC is likely to moderate multiple relationships at the same time. We hope that this study provides a springboard for future research examining the complex effects of both organizational and personality variables on individuals' job change decisions.

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