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Utilizing the Theory of Planned Behavior to Inform Change Management

An Investigation of Employee Intentions to Support Organizational Change

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Utilizing the theory of planned behavior (TPB) as a framework for understanding employee intentions to support organizational change, this study examined the extent to which attitude, subjective norm, and perceived behavioral control (PBC) and the interactive effect of group norm and ingroup identification predicted intentions to carry out change-supportive activities. It also was hypothesized that communication and participation would increase intentions, with these relationships mediated by the TPB variables. The sample was 149 employees undergoing the first phase of a building relocation. Attitude, subjective norm, and PBC each predicted intentions. A significant interaction emerged, with group norm predicting intentions only for employees who identified strongly with their reference group. Employees who perceived sufficient information about the relocation reported stronger intentions, an effect that was partially mediated via subjective norm and PBC. Similarly, participation predicted intentions via subjective norm. Implications for fostering employee readiness for change are discussed.

Keywords: *theory of planned behavior; organizational change; readiness for change; change management strategies; intentions*

Determining how to manage organizational change effectively features strongly on the strategic agenda of today's business leaders. In a Harvard Business School review, it was estimated that change implementation cost *Fortune* 100 companies an average of $1 billion between 1980 and 1995 (Jacobs, 1998). The prevalence and cost of organizational change means that the success of such initiatives is a predominant concern for organizations, and therefore, researchers have a growing responsibility to provide insights as to how managers and change agents can better manage change in their workplace. Organizational change management is concerned with facilitating the process of change through modification of strategies, structures, and processes, with many authors emphasizing that the support of employees is central to determining whether change initiatives will succeed or fail (see Cummings & Worley, 2005). In this regard, researchers have directed their attention to a variety of affective responses to change that represent how receptive employees are to a forthcoming change event in their organization, such as readiness for change (e.g., Armenakis, Harris, & Feild, 1999; Armenakis, Harris, & Mossholder, 1993; Holt, Armenakis, Harris, & Feild, 2007; Jones, Jimmieson, & Griffiths, 2005; Wanberg & Banas, 2000), openness and commitment to change (e.g., Chawla & Kelloway, 2004; Herscovitch & Meyer, 2002; Lines, 2004), and change-related cynicism and resistance (e.g., Bommer, Rich, & Rubin, 2005; Lines, 2004; Stanley, Meyer, & Topolnytsky, 2005).

Given that research of this nature acknowledges that affective responses to change typically precede the extent to which employees will adopt and engage in supportive behaviors throughout the implementation process (see Holt et al., 2007), the present study utilized the theory of planned behavior (TPB) as a theoretical framework for better understanding the antecedents of employees' intentions to behaviorally support an organizational change event. It is proposed that the TPB provides a useful approach for understanding the reactions of employees during times of organizational change. This model not only specifies the role of several social influence variables in predicting intentions to engage in specific behaviors but also can assist in understanding why common change management strategies (e.g., communication and participation strategies) lead to better change outcomes for employees. Thus, in the present study, the TPB was applied in an organizational change context and also extended by proposing that communication and participation strategies are likely to promote favorable intentions via each of the components of the

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TPB. In the next section, the TPB is described, followed by an overview of recent extensions to the model that is informed by the perspectives of social identity and self-categorization theories.

The Theory of Planned Behavior

Originally derived from the theory of reasoned action (Ajzen & Fishbein, 1980), the TPB is similar to other cognitive decision-making models in that its underlying premise states that individuals make decisions rationally and systematically through information available to them (Ajzen, 1991). While behavioral prediction is dependent upon a myriad of factors, the TPB argues that the most proximal determinant of behavior is intentions. In the TPB, intentions are defined as the indication of an individual's willingness to perform a given behavior, with meta-analytic studies suggesting intentions alone account for 22% of the variance in behavior on average (see Armitage & Conner, 2001). As shown in Figure 1, intentions in turn are proposed to be a function of three independent determinants. The first determinant of intentions is the person's attitude, conceptualized as the overall evaluation, either positive or negative, of performing the behavior of interest. The second determinant of intentions is subjective norm, which reflects perceived social pressure to perform or not perform the behavior. The third determinant of intentions is perceived behavioral control, which reflects the extent to which the behavior is perceived to be under volitional control. Perceived behavioral control has been argued to indirectly affect behavior via intentions and/or have a direct effect on behavior (Ajzen, 1991; Ajzen & Madden, 1986).

On the basis of this conceptualization of the decision-making process, individuals holding positive views toward a behavior, who think they have normative support from important persons in their lives to perform the behavior, and perceive that performing the behavior is under their personal control are more likely to have strong intentions to perform the behavior. The TPB has been used extensively in a broad range of research areas to successfully predict behavior (see Armitage & Conner, 2001). In organizational settings, the TPB has been used to understand technology adoption (e.g., Rei, Lang, & Welker, 2002), worker intent toward an employee involvement program (e.g., Dawkins & Frass, 2005), utilization of structured interview techniques in staff selection (e.g., van der Zee, Bakker, & Bakker, 2002), the prediction of managers' intentions to improve their own skills following provision of feedback (e.g., Maurer & Palmer, 1999), and the extent to which managers undertake benchmarking within their organization (e.g., Hill, Mann, & Wearing, 1996). However, the TPB is yet to be considered in an organizational change context. Such an application has parallels with recent theorizing in the organizational change literature. For instance, Piderit (2000) recommended that future research on reactions to organizational change would benefit from a distinction among cognitions, emotions, and behaviors. Chawla and Kelloway (2004) also highlighted that resistance to change has both attitudinal and behavioral components, whereby resistant attitudes—or the psychological rejection of a proposed change—precede unsupportive behaviors. More recently, Holt et al. (2007) suggested that readiness for change is an attitude
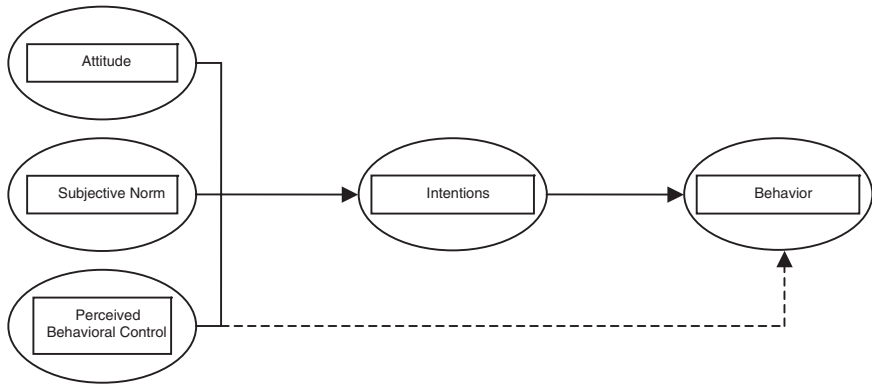
FIGURE 1:   The Theory of Planned Behavior
NOTE: Based on Ajzen (1991).

that acts as a precursor to intentions to support change. On this basis, it is argued that the TPB provides an organizing framework—one with predictive power—to explain how employees' beliefs about impending change are translated into behavioral responses.

In the present study, it is proposed that employee intentions to behaviorally support a specific change event can be predicted by the TPB. Thus, attitude, subjective norm, and perceived behavioral control should each predict the intentions of employees to support organizational change. First, the proposed attitude–intention link in a change context is consistent with the readiness for change literature. Indeed, several authors have argued that favorable and positive views about the need for organizational change—as well as the extent to which employees believe that such changes are likely to have benefits and positive implications for themselves and the wider organization (Armenakis et al., 1993; V. D. Miller, Johnson, & Grau, 1994)—lead to better change reactions. Second, the suggestion that subjective norm predicts intentions to support organizational change is based on the idea that social influence creates pressure among employees to act in change-supportive ways. It is often suggested that change agents should capitalize on the social networks that exist in organizations as a tool for creating power bases and alliances that inform and influence one another to create shared meaning during times of change (Greiner & Schein, 1988; see also Tenkasi & Chesmore, 2003). Third, the extent to which employees believe that various factors will either facilitate or impede their ability to act in change-supportive ways (i.e., perceived behavioral control) is consistent with studies that have shown that perceptions (or appraisals) of control are influential in helping employees to cope and adjust during times of organizational change (e.g., Terry & Jimmieson, 2003; see also Sutton & Kahn, 1986). Derived from the TPB, the following hypotheses were formulated:

Hypothesis 1a: Employees who hold a favorable attitude toward an organizational change event will report stronger intentions to engage in change-supportive behaviors.

Hypothesis 1b: Employee perceptions of normative support for an organizational change event (i.e., subjective norm) will be positively associated with their intentions to engage in change-supportive behaviors.

Hypothesis 1c: High levels of perceived behavioral control over change-related behaviors will be positively related to employees' intentions to engage in change-supportive behaviors.

Limitations of the TPB

Despite general support for the TPB, a limitation in the model has been identified due to weak support found for the role of subjective norm to predict intentions (Ajzen, 1991). Meta-analyses of TPB research revealed that average regression weights for attitude were consistently higher than for subjective norm in the prediction of intentions (e.g., Ajzen, 1991; Armitage & Conner, 2001). For instance, in a meta-analysis involving 185 studies, Armitage and Conner (2001) reported that the average contribution of attitude in predicting intentions was .49, whereas the average subjective norm–intention correlation was .34. On this basis, researchers have argued that the subjective norm–intention relationship is the weakest link of the TPB (e.g., Terry & Hogg, 1996). In response, Terry and colleagues contended that the lack of strong support for subjective norm in TPB studies may be attributable to the fact that the role of norms in this context has not been clearly theorized and that subjective norm is an inadequate construct to capture the impact of social influence on behavior (Terry & Hogg, 1996; Terry, Hogg, & White, 1999; White, Terry, & Hogg, 1994). As such, it has been asserted that consideration of the effects of group membership on behavior, as outlined by social identity and self-categorization theories, may provide a more comprehensive explanation of the role of social influence.

Social Identity Theory/Self-Categorization Theory Perspective

Social identity theory (Hogg & Abrams, 1988; Tajfel & Turner, 1979; Turner, 1982) is a general theory of group processes and intergroup relations that distinguishes group phenomena from interpersonal phenomena. According to social identity researchers (e.g., Abrams & Hogg, 1999), an important component of the self-concept is derived from memberships in social groups and categories. When individuals define and evaluate themselves in terms of a self-inclusive social category, two processes come into play: (a) categorization, which perceptually accentuates differences between the ingroup and outgroup and similarities among self and ingroup members on stereotypic dimensions, and (b) self-enhancement, which seeks to favor the ingroup over the outgroup on relevant dimensions. This theory has also been extended to focus more specifically on the role of the categorization process (i.e., self-categorization theory; see Turner, 1985; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987).

Researchers adopting a social identity theory/self-categorization theory approach in this context propose that acting in a way that is consistent with one's own attitudes is dependent on perceptions of support for such attitudes from the reference ingroup. When there is normative support from a relevant group for attitudes toward a particular

issue or behavior, it is likely that an individual would behave more in accordance with those attitudes than an individual without ingroup support (e.g., Terry & Hogg, 1996). Attitudes, behavioral intentions, and behaviors themselves become normative to the extent that they are context-specific defining features of membership in a psychologically salient self-inclusive social group. When social identity is salient, perceived group norms become the reference point for their beliefs as individuals seek to act in a manner congruent with their ingroup (Hogg & Abrams, 1988; Turner, 1999).

According to Terry and colleagues (e.g., Terry et al., 1999; Terry & Hogg, 1996), a social identity theory/self-categorization theory perspective on the role of social influence in the attitude–behavior relationship differs significantly from that outlined in the TPB model. Rather than collapsing across referents, with social pressure conceived as being additive across all referents and reference groups that participants define as important to them, as in the case of subjective norm, norms are conceived in a way so that they are intrinsically tied to contextually salient membership in a specific social group and affect behavior because the group is behaviorally relevant. Furthermore, the subjective norm construct in the TPB does not account for the strength of identification with significant others or groups, whereas a social identity theory/self-categorization theory perspective asserts that the stronger one's group identification, the stronger the influence of reference group norms on intentions (Terry & Hogg, 1996). Therefore, it is argued that the perception of the group norm for strong identifiers should predict intentions. Support has been found for this proposition in studies predicting, for example, intentions to regularly exercise (Terry & Hogg, 1996), eat healthy food (Astrom & Rise, 2001), and binge drink (Johnston & White, 2003). Thus, the perception that coworkers in one's immediate work environment are undertaking change-supportive behaviors should be integral in forming intentions to act for those who draw a strong sense of identity from their status as a worker within the unit. Adopting a social identity/self-categorization approach to the role of group norms within the TPB should strengthen the representation of social influences operating within this context. In light of research of this nature, it was proposed that:

> *Hypothesis 2:* The perceived norms of a behaviorally relevant reference group (i.e., group norm) will be positively related to employees' intentions to engage in change-supportive behaviors, but only for those who identify strongly with their reference group (i.e., ingroup identification).

The TPB in a Change Context

The present research examines the TPB in the context of a specific organizational change event, namely, a building relocation for a large local government organization (also referred to as the council). Relocation of an organizational enterprise is a significant occurrence that impacts on a range of organizational logistics, requiring strategies to manage uncertainty among employees (see Kleasen & Foster, 2002; Spreckelmeyer, 1995). Indeed, the occurrence of office and plant relocations has been investigated with respect to employees' reactions to such a change event. For example, Fox and Krausz (1987) found that perceived benefits of the relocation (arguably an important component of change readiness) predicted positive emotions

and less stress reactions for 155 Israeli employees whose organization had moved from one major city to another (see also Krausz, Bizman, & Fox, 2002). Other building relocation studies have examined the effectiveness of different change management strategies in predicting employee adjustment. K. I. Miller and Monge (1985) found that the provision of information reduced anxieties for 146 employees about to relocate to a new building that would have significant implications for methods of working. In a study of 171 employees whose work facilities were relocated, Daly and Geyer (1994) examined the role of justification and voice (forms of communication and participation, respectively) on turnover intentions. Although there were no main effects for participation on turnover intentions, communication was found to have an indirect negative effect on turnover intentions, mediated by procedural fairness and distributive fairness. Lawson and Angle (1998) found that fair processes (operationalized as the extent to which the company provided communication about the relocation) predicted organizational commitment. Similarly, Martin (1999) found that employees who felt that they had received sufficient information and had a say in the forthcoming move reported better postmove mental health, job-related contentment and enthusiasm, and intrinsic job satisfaction.

Thus, relocation is a critical and potentially stressful workplace event for which carefully designed change management strategies are needed. Although studies have shown that communication and participation strategies are important for enhancing a range of positive outcomes for employees during relocations (and many other types of organizational change), the mechanisms underlying these effects remain undefined. In the present study, it is proposed that the TPB can offer insights into the means through which communication and participation are related to an employee's readiness to perform change-supportive behaviors. In this respect, it is argued that effective communication strategies and involving employees in planning and decision-making processes will both have a positive main effect on employees' intentions to carry out activities that support the move to new premises. In addition, it is proposed that these main effects are mediated by attitude, subjective norm, and perceived behavioral control. The basis for this latter proposition is based on Ajzen's assertion that any influences on intentions from background variables external to the TPB will be mediated by attitude, subjective norm, and perceived behavioral control (Ajzen, 1991; Ajzen & Fishbein, 1980). In this way, the TPB permits an examination of why a specific background variable influences action by tracing its effects via the more proximal antecedents (i.e., attitude, subjective norm, and perceived behavioral control) of intentions.

Indeed, TPB interventions designed to change intentions and behaviors typically focus on attitude, subjective norm, and perceived behavioral control by targeting their respective underlying beliefs (see Ajzen, 2002a). The TPB suggests that some of the most powerful ways in which to promote new beliefs or alter existing beliefs is through persuasive communications, information provision, newsletters, face-to-face meetings and discussions, observational modeling, and so on—all of which are important change management activities advocated by process models of change (e.g., Galpin, 1996). By providing information and participative opportunities for employees to develop beliefs about change-supportive behaviors and their likely

consequences (attitude), the normative expectations of others in regards to supporting change (subjective norm), and the likely facilitators and barriers to performance (perceived behavioral control), change agents can help to foster readiness to support a change initiative. Thus, it is proposed that timely and accurate communication and involvement in decision-making processes are likely to foster positive attitudes about the change event, create stronger social pressure to act in supportive ways, and increase one's sense of personal control over the process, which in turn, and according to the TPB, will predict intentions. Thus, the following main and mediating relationships were proposed:

> *Hypothesis 3:* Employees who report receiving timely and accurate communication about the change process will report higher levels of intentions to engage in change-supportive behaviors (Hypothesis 3a), with this relationship expected to be mediated by attitude, subjective norm, and perceived behavioral control (Hypothesis 3b).
>
> *Hypothesis 4:* Employees who report receiving opportunities to participate in the change process will indicate higher levels of intentions to engage in change-supportive behaviors (Hypothesis 4a), with this relationship proposed to be mediated by attitude, subjective norm, and perceived behavioral control (Hypothesis 4b).

Summary and Working Hypotheses

In sum, the TPB offers a comprehensive yet comparatively parsimonious model from which to assess employee intentions to carry out behaviors that support change. A summary of the working hypotheses is depicted in Figure 2. First, it was hypothesized that attitude, subjective norm, and perceived behavioral control will be positively associated with intentions to engage in change-supportive behaviors for the relocation (Hypotheses 1a to 1c, respectively). Relating to the proposed amendments to the social influence component of the TPB from the perspective of social identity and self-categorization theories, it was hypothesized that the perceived norms of a behaviorally relevant reference group (i.e., group norm) will predict intentions to engage in change-supportive behaviors, but in line with previous findings (Terry & Hogg, 1996), only for those who identify strongly with their reference group (Hypothesis 2). Third, employee ratings of communication about the relocation are hypothesized to be positively related to intentions (Hypothesis 3a) and that this relationship will be mediated by attitude, subjective norm, and perceived behavioral control (Hypothesis 3b). Fourth, employee perceptions of participation in change-related decision making also are predicted to increase intentions (Hypothesis 4a), with this relationship expected to be mediated by the three TPB variables (Hypothesis 4b).

METHOD

Organizational Context

The organization. The change event under investigation was taking place in a local government body (i.e., council) in Australia. This organization is responsible for the city's transport and parking and provides a comprehensive range of residential (e.g., water and sewage), business (e.g., building and development), and community
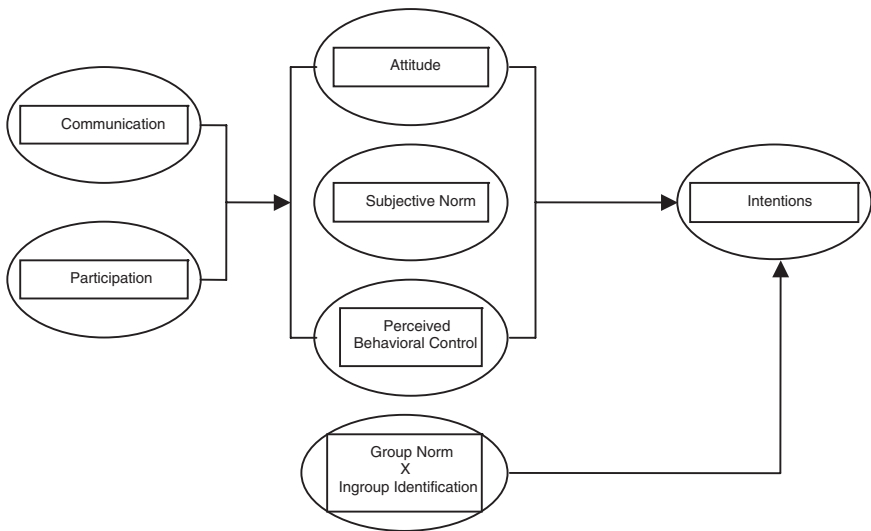
FIGURE 2:   Proposed Relationships Among the Focal Variables Tested in the Present Study

(e.g., recreational programs) services. It also operates numerous libraries, supports a number of educational facilities, and provides learning programs for different community groups. The council consists of the Office of the Lord Mayor, along with six divisions. Each division contains numerous branches in which multiple work units are located. The building relocation is a significant event for the organization, affecting approximately 2,000 of the total 7,000 staff accounted for within subsidiaries of the council.

The relocation. Construction of the proposed 40-story office tower (with the council occupying 60% of the space) was currently underway at the time of data collection, with all administration and customer service functions of the organization expected to be relocated and operational by late 2005. It is important to note that the distance between the old and new site did not pose a disruption to commuting arrangements. Thus, implications for home and family life were not of central concern for employees. The new site constituted a notable improvement in the quality of physical facilities, allowing the organization to meet future requirements in a cost-effective way by grouping service areas in the most appropriate manner. Although employees were likely to continue working in their current work units, new office layouts were expected to improve the effectiveness of workflow between organizational divisions and branches. Of particular significance, all employees across all hierarchical levels would be required to work in large and open spaces. Thus, the issues of privacy and implications for status were of some concern for employees, especially for managerial staff (see Elsbach, 2003).

The implementation process. The change management plan for relocation to the new building was sectioned into workplace design, readiness to move, moving in, and postoccupancy time periods, concluding by mid-2006. It is of interest to note that although employees had no control over the council's decision to relocate to a new building, they were being encouraged to take part, at their own discretion, in a range of activities surrounding the implementation process (e.g., attendance at workshops and forums) and being consulted about design issues related to the new office environment (e.g., choice over seating plans and color schemes for office equipment). At the time of survey administration, the organization was undergoing the workplace design phase of the overall implementation plan. During this initial 6-month period, employees were being encouraged to consider transition issues related to the new accommodation, such as evaluating work practices, identifying important relationships to promote better contact between key groups, evaluating storage and equipment needs, and becoming familiar with the goals of ecologically sustainable work practices.

Sampling Procedure and Characteristics

The Organizational Change Manager for the relocation project endorsed the study, providing the researchers with assistance in accessing employees. In this respect, the Organizational Change Manager requested 18 workplace representatives (referred to as "workplace warriors" in the organization) to recruit 10 participants from their respective divisions for participation in the study. Thus, a total of 180 questionnaires were distributed to employees. One of the main responsibilities of these workplace representatives (each of whom had volunteered for this role and had been operating in this capacity since the announcement of the relocation) was to participate in a formal two-way communication process in the organization whereby they took responsibility for voicing perspectives on behalf of their division at regular meetings as well as relaying information about various organizational activities from senior management to their colleagues throughout the division. All workplace representatives from all sections of the organization (which included the Office of the Lord Mayor plus the six divisions) participated in the data collection process. Employees were asked to return the questionnaire to a secure collection box in the office of the Organizational Change Manager.

In all, 151 questionnaires were returned, representing a response rate of 84%. Due to excessive missing data, the responses of 2 participants were excluded. A further 2 cases were deleted as they were revealed to be multivariate outliers. The sample of 147 consisted of a similar proportion of male (55%) and female (45%) respondents. The average age of employees was 40.32 years ($SD = 10.22$), ranging from 19 to 63 years. The majority of the sample was employed on a full-time basis (91%). Employees in the sample had an average tenure of 10.56 years ($SD = 8.80$) working for the council and an average tenure of 5.55 years ($SD = 4.31$) for the division in which they worked. Participants in the sample represented employees from the Office of the Lord Mayor and all six divisions of the council, although 43% of respondents were from the largest division.

Measures

Participants volunteered to complete a questionnaire assessing the standard TPB measures. Scale development conformed to guidelines for constructing a TPB questionnaire (see Ajzen, 2002b). For the measures of group norm and ingroup identification, pilot work was conducted to identify the behaviorally relevant reference group (see the following). Where applicable, reliability of the measures was assessed using Cronbach's (1951) alpha coefficient, and these are presented in Table 1.

Intentions to engage in change supportive behaviors. As part of the overall change management strategy, the Organizational Change Manager and the relocation project team identified specific activities that would be required of employees by the end of the initial 6-month phase of the relocation process. These behaviors included whether employees would (a) read notices about the relocation, (b) dedicate time to completing tasks relating to the relocation, and (c) archive or dispose of outdated files. These behaviors were considered key to achieving support for the current phase of the change initiative. A composite measure of intentions to engage in change-supportive behaviors was developed for use in the present study by asking employees to indicate the extent to which they intended to carry out each of these three behaviors during the next 6 months. Items were worded in accord with Ajzen's (2002b) recommendations to incorporate elements of target, action, context, and time. The response scale ranged from 1 (*extremely unlikely*) to 7 (*extremely likely*). It should be noted however that the scale had low reliability with a Cronbach's (1951) alpha coefficient of .60.

Attitude. A measure of attitude toward carrying out activities during the next 6 months that support the move to new premises was obtained using ratings on a semantic differential format (ranging from 1 to 7) across five items (i.e., beneficial/detrimental, negative/positive, useless/useful, constructive/destructive, and foolish/wise). It is important to note that each of these bipolar adjectives relate to the individual performing change-supportive behaviors. Two of the adjective pairs were reverse scored. The scale was reliable with a Cronbach's (1951) alpha coefficient of .84.

Subjective norm. The measure of subjective norm was assessed using two items (e.g., "Most people who are important to me at work think that I should carry out activities during the next 6 months that support the move to new premises"). Response options ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). The subjective norm scale had marginally acceptable reliability with a Cronbach's (1951) alpha coefficient of .69.

Perceived behavioral control. This construct was assessed across four items (e.g., "I have complete control over whether I carry out activities in the next 6 months that support the move to new premises"). The response scale ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). Two items were reverse scored. The internal consistency for the scale was low at .61.

TABLE 1
Descriptive Data (Means and Standard Deviations) and Intercorrelations Among the Variables

Variable	M	SD	Intraclass Correlation Coefficient	1	2	3	4	5	6	7	8	9	10
1. Gender	1.45	0.50											
2. Age	40.32	10.22		-.25**									
3. Attitude	5.30	1.23	.009	.11	.01	(.84)							
4. Subjective norm	5.29	1.23	.001	.12	.09	.42**	(.69)						
5. Perceived behavioral control	4.44	1.12	.008	.18*	.08	.19*	.23**	(.61)					
6. Group norm	4.85	1.60	.047	.15	.06	.14	.36**	.21*					
7. Ingroup identification	5.28	1.33	.016	.18*	-.03	.09	.19*	.19*	.03				
8. Communication	2.62	0.94	.020	.25**	.04	.11	.24**	.21*	.01	.27**	(.86)		
9. Participation	1.61	0.79	.027	.06	.09	.12	.23**	.13	.03	.16	.44**	(.91)	
10. Intentions	5.92	0.82	.012	.23**	.17*	.40**	.45**	.36**	.22*	.19*	.30**	.26**	(.60)

NOTE: Cronbach's (1951) alpha coefficients for the multiitem variables are in parentheses along the main diagonal.
*$p < .05$. **$p < .01$.

Group norm and ingroup identification. To identify the behaviorally relevant reference group for the group norm and ingroup identification items, participants of a pilot group rated the importance of four possible reference groups that reflected the hierarchical structure of the organization (i.e., employees from the division, employees from the branch, and employees in their specific work unit) in relation to carrying out the target behavior. This pilot group consisted of 10 female and 8 male staff members who held representative positions across the council (*M* for age was 44.54 years, *SD* = 11.26). Based on these responses and a follow-up group discussion with pilot group members, the reference group chosen as the behaviorally relevant reference group was employees in their branch. Thus, for the measure of group norm, participants rated their perceptions of how many of the employees in their branch they thought would carry out activities during the next 6 months supportive of the move to new premises, ranging from 1 (*all*) to 7 (*none*). This item was reverse scored. To assess the degree to which respondents identified with their behaviorally relevant reference group, they rated the item "How much do you identify with employees in your branch?" Response options ranged from 1 (*not very much*) to 7 (*very much*).

Communication. Perceptions of communication were measured with three items designed to assess the extent to which employees felt they had been provided with timely and accurate information about the relocation process (e.g., "How clearly have you been informed about the reasons underlying the relocation?"). Items were adapted from similar scales used in other research (Jimmieson, 2002). Response choices were 1 (*not at all*) to 5 (*a great deal*). The internal consistency for this scale was good with a Cronbach's (1951) alpha coefficient of .86.

Participation. Three items measuring the extent of employee participation in decision-making processes relating to the relocation were taken from Jimmieson (2002). An example item was "To what extent have you been able to voice your concerns about the relocation?" Responses to questions were recorded on a 5-point scale, ranging from 1 (*not at all*) to 5 (*a great deal*). The scale showed good reliability, with a Cronbach's (1951) alpha coefficient of .91.

Because levels of communication and participation have been considered together as facets of procedural fairness during times of organizational change (e.g., Caldwell, Herold, & Fedor, 2004), these six items were subjected to an exploratory factor analysis using principal axis factoring and an orthogonal (varimax) rotation ($n = 141$). The number of factors retained was determined by the number of eigenvalues greater than one. On this basis, two factors were extracted, which accounted for 74% of the variance. The items assessing participation loaded on the first factor (mean factor loading = .85), whereas the items measuring communication loaded on the second factor (mean factor loading = .80). None of the items had factor loadings of .40 or above across the two factors (Tabachnick & Fidell, 2001). In line with these results, the two scales were only moderately correlated with each other ($r = .44$, $p < .01$). Given that communication and participation were shown to be empirically distinct, they were considered separately in the analyses.

RESULTS

Preliminary Analyses

Means, standard deviations, and correlations among the variables are reported in Table 1. The extent of common method variance (CMV) was assessed using the marker variable method proposed by Lindell and Whitney (2001), which employs a theoretically unrelated construct to adjust the correlations among the principal constructs. Although there is some research evidence indicating that age is related to change readiness perceptions (see Caldwell et al., 2004), age was used as the marker variable in the present study because it was found to be unrelated to the independent variables and had the smallest significant correlation with the intentions variable (see Table 1). Lindell and Whitney stated that it is acceptable to choose the marker variable post hoc by identifying the variable with the smallest correlations with the substantive variables. Next, the smallest of the various correlations between the marker variable and the substantive variables was chosen to use as the estimate of CMV; in this case, the correlation between age and attitude ($r_s = .01$). CMV-adjusted correlations were then calculated for the 19 (out of 28) significant correlations using the formula for a partial correlation ($r_{Yi \times M}$) provided by Lindell and Whitney, followed by the use of $t_{\alpha/2.N-3} = (r_{Yi \times M})/[(1 - r_{Yi \times M}^2)/(N-3)]^{0.5}$ to establish significance. These results indicate that all of the original significant correlations remained significant even after controlling for CMV. Furthermore, given that the uncorrected correlations among the variables were low to moderate (uncorrected r ranged from .01 to .45), it was concluded that multicollinearity was not considered to be a threat to the stability of the analyses (Tabachnick & Fidell, 2001).

Female staff and older employees reported higher intentions to engage in activities during the next 6 months that were supportive of the move to new premises (see Table 1). There also were a number of significant correlations involving gender and the predictor variables. In this respect, female employees reported higher levels of perceived behavioral control and ingroup identification and also perceived that they had received more communication about the change process compared to male staff. However, it is important to note that statistical control of gender and age in the hierarchical multiple regression analyses predicting intentions did not alter any of the main, moderating, or mediating effects reported in the following sections. Moreover, there was no evidence that gender interacted with any of the focal variables in the prediction of intentions, and neither were there any significant Predictor × Age interactions detected. The hierarchical multiple regression analyses were therefore performed on the total sample.

As noted earlier, data were collected from the Office of the Lord Mayor and all six divisions throughout the organization. Due to individual responses being nested within these seven groupings, it was considered important to establish the extent to which the proportion of variance in each of the focal variables was due to differences between groups. This was examined by computing the intraclass correlation coefficient [ICC(1)]. This particular intraclass correlation coefficient represents the proportion of total variance that can be explained by group membership (Bryk & Raudenbush,

1992). From a one-way random effects ANOVA model, the ICC(1) was calculated with the Bartko (1976) formula (Bliese, 2000). Given that group sizes were disproportionate, k was calculated with the formula recommended by Bliese and Halverson (1998). The coefficients for each of the nine measured variables are presented in Table 1. Inspection of this table indicates very little group-level variability, with 0.00% to 4.07% of the variance in employees' responses a function of group membership, which correspondingly indicates considerable individual-level variability. Most group-level constructs have at least 10% group-level variability (see Caldwell et al., 2004, for a recent example in the area of organizational change). Moreover, an absolute value of at least .10 is generally required for justifying the aggregation of a variable to the group level (Bliese, 2000; James, 1982). Given that it can be concluded that the effect of the group is unlikely to influence the results, it was considered appropriate to examine the data at the individual level of analysis.

Analysis Testing the TPB in Predicting Intentions

A hierarchical multiple regression analysis was conducted to examine the extent to which the standard TPB predictor variables and the revised social influence components of group norm and ingroup identification predicted intentions to carry out specific activities related to the relocation (Hypotheses 1 and 2, respectively). To test whether ingroup identification would moderate the influence of group norm on intentions, a multiplicative two-way interaction term between the group norm and ingroup identification variables was computed. Following recommended procedures by Aiken and West (1991), centered variables (calculated as deviations from the mean) were used to reduce multicollinearity between the predictors and interaction term. For the analysis, the standard TPB predictors of attitude, subjective norm, and perceived behavioral control were entered at Step 1 and group norm and ingroup identification were entered at Step 2. Once the component main effects were statistically controlled (see Aiken & West, 1991), the interaction between group norm and ingroup identification was entered on the final step.

As shown in Table 2, entry of the standard TPB variables into Step 1 of the equation accounted for a significant amount of variance in intentions, $R^2 = .30$, $F(3, 139) = 19.98$, $p < .001$. As expected, entry of group norm and ingroup identification at Step 2 of the equation did not account for a significant increment of variance in intentions, R^2 change = .01, $F(2, 137) = 0.66$, ns. However, entry of the interaction term between these variables at Step 3 of the equation explained a significant increment of variance in intentions, R^2 change = .03, $F(1, 136) = 6.17$, $p < .01$.

Once all of the variables were entered in the equation, there was support for the hypothesized predictors of intentions. In relation to the standard TPB predictors, the results of the study revealed support for Hypotheses 1a to 1c. Employees who held positive attitudes toward performing behaviors that supported the relocation, $\beta = .23$, $p < .01$, who perceived pressure from others to complete the required activities, $\beta = .28$, $p < .001$, and who felt they were in control of performing such behaviors, $\beta = .18$, $p < .05$, were more likely to intend to carry out supportive activities related to the relocation.

Predictor	β	Intentions R^2	R^2 Change
Step 1		.30***	.30***
Attitude	.23**		
Subjective norm	.28***		
Perceived behavioral control	.18*		
Step 2		.31***	.01
Group norm (GN)	.04		
Ingroup identification (IG)	.08		
Step 3		.34***	.03**
GN × IG interaction	.18**		

*$p < .05$. **$p < .01$. ***$p < .001$.

In relation to the second step, as anticipated, there was no evidence to suggest that group norm and ingroup identification would emerge as significant predictors of intentions. However, in support of Hypothesis 2, there was evidence that group norms predicted intentions only for those who identified strongly with the reference group (after controlling for the effects of attitudes, subjective norm, and perceived behavioral control). Simple slope analysis (analogous to performing simple main effects in ANOVA designs; see Aiken & West, 1991) demonstrated that the relationship between group norm and intentions was significant for high identifiers, $β = .11$, $t(136) = 2.05$, $p < .05$, but not for low identifiers, $β = –.07$, $t(136) = –1.26$, *ns*. As shown in Figure 3, perceptions of group norm positively predict intentions only for those employees who identify strongly with their reference group.

**Analyses Testing the Role of
Communication and Participation on Intentions**

Hypothesis 3a states that employees who perceive that they have received sufficient information about the relocation would more strongly intend to carry out activities relating to the move and that this relationship would be mediated by attitude, subjective norm, and perceived behavioral control (Hypothesis 3b). Similarly, it was proposed that employees who perceived they have had some degree of participation in decision making relating to the relocation would more strongly intend to carry out activities that were supportive of the change event (Hypothesis 4a) and that this relationship would be mediated by the three TPB variables (Hypothesis 4b). Consistent with Baron and Kenny's (1986) recommendations for the testing of mediated models involving continuously measured variables, hierarchical multiple regression analysis was employed. Baron and Kenny discussed four tests that need to be followed when establishing a mediated relationship among a set of variables. These four tests were conducted for each of the three hypotheses and are discussed in the following.

To provide evidence of a mediating model, it is necessary to first establish that the predictor variable (i.e., communication) is significantly correlated with the outcome
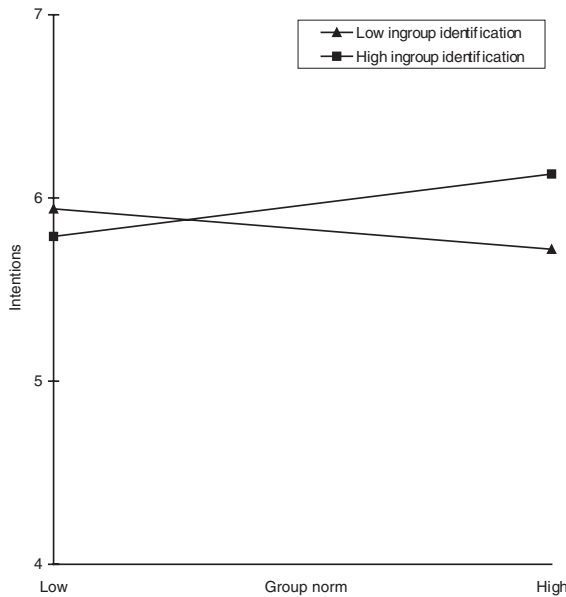
FIGURE 3: Two-Way Interaction of Group Norm and Ingroup Identification on Intentions

variable (i.e., intentions), thereby establishing if there is a relationship to be mediated. As displayed in Table 1, communication was significantly related to intentions, $r = .30$, $p < .001$, supporting Hypothesis 3a. Next, it needs to be established that the predictor variable is correlated with the mediator (i.e., attitude, subjective norm, and perceived behavioral control). This step requires that each mediating variable be treated as an outcome variable in separate analyses. Perceptions of communication about the change event exerted a positive main effect on subjective norm, $\beta = .24$, $p < .01$, and perceived behavioral control, $\beta = .21$, $p < .05$, but were not related to attitude, $\beta = .11$, *ns*.

The third test requires that the mediators are correlated with the outcome variable while controlling for the predictor variable at Step 1. After the effects of communication were partialed out, subjective norm, $\beta = .39$, $p < .001$, R^2 change = .15, $F(1, 143) = 27.33$, $p < .001$, and perceived behavioral control, $\beta = .30$, $p < .001$, R^2 change = .08, $F(1, 143) = 14.57$, $p < .001$, were predictive of intentions and accounted for a significant increment of variance in each model (each entered at Step 2 in separate analyses). Fourth, for full mediation to be present, it is necessary to demonstrate that the significant effect of communication is no longer significant when the effects of subjective norm and perceived behavioral control are statistically controlled on the subsequent step. If the strength of this relationship is reduced but remains statistically significant, then partial mediation is evident. The equation used for the third

test was used to establish this effect. Some support was demonstrated for Hypothesis 3b. In this respect, the positive main effect of communication on intentions reduced in significance once subjective norm was entered into the equation (β reduced from .30, $p < .001$ to $\beta = .20$, $p < .01$). The Sobel (1982) test showed that the decrease in the effect of communication on intentions was reliable, $z = 2.57$, $p < .01$. When perceived behavioral control was in the equation, the observed positive relationship between communication and intentions also was weaker (β reduced from .30, $p < .001$ to $\beta = .24$, $p < .01$; Sobel test: $z = 2.16$, $p < .05$). In both instances, this pattern of results provides evidence for a partial mediation effect.

Establishing the basis of a mediating model, participation was significantly correlated to intentions, $r = .26$, $p < .01$, supporting Hypothesis 4a (see Table 1). The predictor variables were then correlated with the mediators (i.e., attitude, subjective norm, and perceived behavioral control) in separate analyses. Employee ratings of participation in decision making exerted a positive main effect on subjective norm, $\beta = .23$, $p < .01$, but was unrelated to attitude, $\beta = .12$, *ns*, and perceived behavioral control, $\beta = .13$, *ns*. The third test requires that the mediators are correlated with the outcome variable while controlling for the predictor variable at Step 1. After the effects of participation were controlled for, subjective norm (entered at Step 2) was predictive of intention, $\beta = .41$, $p < .001$, and accounted for a significant increment of variance in the model, R^2 change $= .16$, $F(1, 143) = 28.60$, $p < .001$. The positive main effect of participation on intentions was reduced once subjective norm was entered into the equation (β reduced from .26, $p < .01$ to $\beta = .17$, $p < .05$; Sobel test: $z = 2.48$, $p < .01$). Therefore, some support for Hypothesis 4b was demonstrated whereby one out of the three TPB variables acted as a partial mediator of the positive main effect of participation on intentions.

DISCUSSION

Results of the present study demonstrated general support for the hypotheses, confirming the proposition that the revised TPB has utility to explain the main, mediating, and moderating effects underlying the intentions of employees to engage in activities that support a change initiative. Employees' self-ratings of attitude, subjective norm, and perceived behavioral control were predictive of their reported intentions to carry out activities during the next 6 months that support the move to new premises (Hypotheses 1a to 1c). Support also was provided for the reconceptualization of social influence from the perspectives of social identity and self-categorization theories. In this respect, perceptions of group norm predicted intentions only for those employees who reported that they identified strongly with their reference group (Hypothesis 2). Furthermore, employees who felt that they had received communication and participation opportunities indicated higher intentions to engage in change-supportive behaviors (Hypotheses 3a and 4a), with the proposal that such a relationship would be mediated by the TPB variables receiving partial support (Hypotheses 3b and 4b). Each of these findings and their implications are discussed next.

Role of TPB Variables on Intentions

As conceptualized by Ajzen (1991), employee perceptions of attitude, subjective norm, and perceived behavioral control were predictors of their self-ratings of intentions to engage in change-supportive behaviors, accounting for 30% of the variance. Thus, employees with a favorable attitude toward performing the behavior, who perceived pressure from important referents, and who felt that they had control over performing the behavior were more likely to intend to engage in change-supportive behaviors. These findings provide useful information for strategies designed to encourage change-supportive behaviors within an organizational context. The results of the present study indicate that targeting employees' personal attitudes, their perceptions of pressure from others to perform the behaviors, and elements of personal control may be useful strategies to encourage the uptake of change-supportive behaviors.

These findings concur with the theoretical underpinnings of the TPB. This support is consistent with previous research examining the utility of the model (see Armitage & Conner, 2001) and in particular, the prediction of behaviors within an organizational context (e.g., Dawkins & Frass, 2005; Hill et al., 1996; Maurer & Palmer, 1999; Rei et al., 2002; van der Zee et al., 2002). It should be noted that in this study, the percentage of variance accounted for in intentions to engage in change-supportive behaviors was somewhat lower than in other tests of the TPB in organizational contexts. This result may be due to the fact that the relocation process was in its very early stages, potentially affecting the stability of employees' intentions. Interestingly, although numerous studies have highlighted the failure of subjective norm to effectively predict intentions (see Armitage & Conner, 2001), in the present study, subjective norm emerged as the strongest predictor of intentions to engage in change-supportive behaviors. It is likely that in behavioral contexts where there are dependent relationships, such as for employees where there is potential for reward (e.g., pay or promotion) and punishment (e.g., censure, demotion, or job loss) based on job performance, perceived pressure from a range of important others is a strong and independent predictor of intentions to engage in certain behaviors at work.

Results of the present study also corroborated the argument for examination of social influence in the TPB from a social identity/self-categorization theory perspective. A significant interaction between group norm and ingroup identification emerged such that employees who indicated that they identified strongly with their branch were more likely to have stronger intentions to carry out the change-supportive activities if they perceived that a favorable group norm existed (i.e., whereby employees perceived that their fellow branch employees were engaging in the desired behaviors). This finding reflects the robustness of the Group Norm × Ingroup Identification interaction to influence intentions, as shown in previous TPB studies (e.g., Johnston & White, 2003; Terry & Hogg, 1996). It also provides support for the general approach to understanding social influence processes within work environments from the perspectives of social identity and self-categorization theories, a trend that is emerging in the organizational psychology literature (e.g., Ashforth & Mael, 1989; Haslam, Powell, & Turner, 2000; Hogg & Terry, 2000; Turner & Haslam, 2001). An interesting direction for future postrelocation research would be to examine the

extent to which the move to a new building with open-plan architecture alters how much employees identify with others in their branch. Indeed, the extent to which identities at work are shaped by the physical work environment has received research attention (e.g., Elsbach, 2003). The new open-plan environment may pose a threat to social distinctiveness by removing visually salient physical group boundaries. This highlights the importance of recognizing new and relevant identities as they shift throughout the course of organizational change.

Overall, in light of these findings, change management interventions designed to both foster favorable group norms and strengthen ingroup identification (i.e., feelings of belongingness with respect to a behaviorally relevant reference group) are likely to assist in developing stronger intentions to support a specific change event. When activities reinforce and induce commitment to a behaviorally relevant reference group, then it is likely that performance of desired behaviors will become normative in the social work environment and be maintained over time. The presence of a supportive behaviorally relevant group norm and a strong positive group identity also may prevent positive attitudes and behaviors from eroding across time due to group membership providing a continual reference for appropriate conduct in the work environment. Thus, the use of group- or team-based interventions during times of organizational change may be integral to maximizing long-term change implementation success. Of course, groups must be functioning effectively if they are to have a positive influence in the change implementation process (Dunphy, 1981, 1996). When group norms and ingroup identification are not supportive of the change environment, it may be better for strategies to focus on changing the more personal factors underlying behavioral decision making, such as perceptions of personal control over different aspects of the change process.

Role of Communication and Participation on Intentions

The present study demonstrated that employees who felt that they had received information about the relocation and had been involved in decisions related to the relocation process reported higher intentions to engage in supportive behaviors. These findings are consistent with other research that has demonstrated that change management strategies such as these are predictive of positive responses among employees undergoing office or plant relocation (Daly & Geyer, 1994; K. I. Miller & Monge, 1985; Lawson & Angle, 1998; Martin, 1999). The finding that subjective norm partially mediated the effects of both communication and participation on intentions illustrates that the TPB has utility to account for the relationship between these variables. In this respect, ensuring that employees are informed and consulted helps to create social pressure among employees to act in supportive ways of impending change. Communication also positively predicted perceived behavioral control, which in turn predicted intentions. This latter finding is consistent with other theorists who have noted that accurate and timely information about a significant workplace event contributes to a sense of predictability, thereby enhancing personal control beliefs and engendering a sense of self-efficacy among employees (e.g., Bell & Staw, 1989). Thus, the TPB can also assist in understanding why common change

management strategies (i.e., communication and participation strategies) may lead to positive employee reactions to organizational change.

Methodological Limitations

Several methodological limitations of the present study should be considered when interpreting these results. In particular, reliance on self-report measures from a single source at a single point in time is problematic because significant relationships may reflect the confounding influence of CMV, thereby resulting in spuriously high relationships. However, multicollinearity was not considered to be of central concern in this study given that all significant correlations remained significant even after controlling for CMV. Nevertheless, it is important that future research seeks to establish temporal relationships between the TPB variables given that employees' view of the change event may alter over the course of the implementation process (see Piderit, 2000). Behaviors carried out in relation to the relocation during the specified time period also were not measured. Indeed, it is important to note that the findings presented in this study do not ensure that change management strategies will lead to actual behaviors that support change. Thus, future studies should overcome this design shortcoming to demonstrate the full capacity of the TPB to predict both intentions and subsequent behaviors of employees in relation to a change event. Objective assessments of behaviors required of employees during the process of organizational change (e.g., via supervisor ratings) also might be collected to improve the methodological strength of research of this nature. It is important to note however that assessment of employees' intentions to engage in the relocation activities serves as a reliable indicator of what employees will actually do during subsequent implementation of the change, as the robustness of the intention–behavior relationship has been demonstrated in an array of studies assessing the utility of the TPB (see Armitage & Conner, 2001).

It should be noted that some scales (i.e., subjective norm, perceived behavioral control, and intentions) did not display optimal levels of reliability, which places limits on subsequent conclusions. In regards to the validity of the scales, it is important to note that the TPB approach requires the researcher to develop measures relevant to the context, following guidelines provided by Ajzen (2002b) for constructing a TPB questionnaire. For the standard TPB variables and the measure of intentions, items were worded in accord with Ajzen's recommendations to incorporate elements of target, action, context, and time. Thus, the items developed for use in these scales were in line with the definitional core of these constructs. Another methodological limitation was the use of single items to assess group norm and ingroup identification. As highlighted by Gosling, Rentfrow, and Swann (2003), single-item scales are usually inferior—in terms of reliability and validity—to multi-item scales, but the advantages include reduced item redundancy, the potential for less CMV, and better participant reactions (related to less fatigue and boredom). Furthermore, several researchers contend that a single content-valid item that fully represents the construct can be just as psychometrically sound as a summation score obtained from multiple items (see Burisch, 1997; Gardner, Cummings, Dunham, & Pierce, 1998).

In this respect, Gosling et al. noted that omnibus measures have been used successfully to assess a wide variety of complex personality constructs, and Wanous, Reichers, and Hudy (1997) found evidence for the utility of a single-item measure of job satisfaction, leading them to conclude that the use of single-item measures should not be considered a fatal flaw. More recently, Shamir and Kark (2004) demonstrated evidence of convergent validity between a single-item graphic scale for organizational identification and two multiple-item versions of this measure.

However, it is acknowledged that future research examining the role of social influence in the context of organizational change should employ a measure of ingroup identification that recognizes its multidimensional nature. Based on the theorizing of Deaux (1996), Cameron (2004) recently proposed that social identification is represented by several components, including (a) cognitive centrality or prominence of a given group membership, (b) ingroup affect or the emotional evaluation of that group membership, and (c) ingroup ties reflecting similarity and bonds with group members. Recent confirmatory factor analytic work has supported this three-factor model of social identification (Obst & White, 2005). In the organizational context, van Dick, Wagner, Stellmacher, and Christ (2004) also demonstrated that cognitive, affective, evaluative, and behavioral aspects of identification can be distinguished from one another and are associated with different workplace outcomes. The extent to which the relationship between group norms and intentions to support organizational change initiatives varies as a function of these different components of identification is an area for further consideration.

Lastly, in regards to the use of a convenience sample, the change management team had a preference for utilizing their designated workplace representatives (18 in total) for questionnaire distribution. Although this was a good strategy for promoting the relocation project and ensuring a good response rate (84%), it limited our ability to adhere to the principles of probability sampling. As noted previously, the workplace representatives responsible for recruiting participants were from all divisions across the organization and attempts were made to ensure that they were committed to the proper recruitment of participants. Nonetheless, there was not an equal chance of participants being randomly recruited from the population, and selection of respondents could not have been strictly independent. Thus, the results of this study may not be representative of the organization as a whole, limiting generalizability of the findings. However, it is important to note that the overall sample contained respondents from each division of the council and an equal proportion of males and females of diverse ages and years of employment. Another issue that limits the generalizability of these findings is the nature of the change event investigated in this study. A building relocation, although disruptive, is often viewed by employees as a change for the better, particularly if the distance between the old and new site does not pose a threat to job security or existing commuting arrangements, as was the case for this organization. Although employees were concerned about many of the logistical issues, the opportunity to work in a new and modern work environment that adhered to the values of ecological sustainability was perceived to be a positive feature of the relocation. Thus, the extent to which these findings extend to other more anxiety-provoking change events—such as those requiring more substantial restructuring (e.g., mergers, acquisitions, and downsizing)—is an important avenue for future research.

CONCLUSION

Overall, the present study provides a unique contribution to our understanding organizational change processes by adopting a theoretical approach that has predictive power, thereby validating the important role of intentions in managing organizational change projects. The inclusion of group norm and ingroup identification contributed to the power of the model to explain intentions, suggesting that interventions designed to foster favorable group norms and strengthen social identity may be key to maximizing change receptiveness. The TPB also contributed to our understanding of the relationship between two specific change management strategies (communication and participation) and intentions to behaviorally support change. From an applied point of view, the TPB is a useful framework for preimplementation assessments of readiness for change as it can provide organizations with an early indication of employee beliefs and determinants of their intentions prior to the change event. Indeed, one of the major advantages of the TPB approach, inherent in its belief basis, is its ability to identify the underlying beliefs that distinguish between intenders and nonintenders for the specific behavior under investigation (see Fishbein & Stasson, 1990). The identification of beliefs that underlie attitude, subjective norm, and perceived behavioral control may help change managers to develop a greater understanding of the psychological factors that distinguish between those employees who support the change and those who do not. Such assessments should help change agents to make targeted choices about strategies and tactics that are needed to help foster employee enthusiasm for change. The TPB also might be used as a process model of change management by progressively measuring intentions (and its determinants) across successive stages of a change program. For these reasons, it is recommended that the utility of the TPB be examined in future research as a basis for understanding employee responses to change.

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