Transformational Leadership and Group Affective Well-Being and Job Satisfaction: A Group-Level Test of Two Potential Moderators

by

Patrick Bruning

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Abstract

This study examines the relationship between supervisors' transformational leadership behaviors and their work groups' subsequent affective well-being and job satisfaction under specific moderating conditions (collective efficacy and perceptions of meaningful work). Longitudinal data from 42 work groups in a Canadian government organization was used to test the proposed relationships. Work groups' collective efficacy has a significant moderating effect on the relationship between transformational leadership and positive group affective well-being. Specifically, groups with lower levels of collective efficacy exhibit a stronger relationship between transformational leadership behaviours and both affective well-being and job satisfaction.

Keywords: Group affective well-being, collective efficacy, group job satisfaction, meaningful work, transformational leadership

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The relationship between leadership and a work group's subjective outcomes has been demonstrated by numerous empirical studies that have shown the impact of high-quality supervisory behaviors, such as transformational leadership (Bass, 1985), have on employee outcomes such as higher job satisfaction (e.g., Jung & Avolio, 2000; Bono & Judge, 2003), lower burnout (e.g., Gill, Flaschner, & Shachar, 2006), lower intentions to withdraw (e.g., Walumbwa, Wang, Lawler, & Shi, 2004), higher satisfaction with supervisor (e.g. Bono & Judge, 2003), higher organizational commitment (e.g. Bono & Judge, 2003), and even fewer minor psychiatric disorders among subordinates (e.g., Arnold, Turner, Barling, Kelloway, & McKee 2007). Considerably less research has explored the conditions under which these effects occur. As working relationships between supervisors and their subordinates occur under many different contextual conditions, it is necessary to understand the contingent effects of leadership on important outcomes. In the current study, I use a sample of work groups to explore the relationship between transformational leadership and group-level subjective outcomes (i.e. affective well-being and job satisfaction), and test two salient group conditions proposed to moderate this relationship. Work groups are defined here as two or more individuals that share a common relationship within an organization (Langton, Robbins, & Judge, 2009), formally organized to work under a given supervisor.

Transformational Leadership, Groups' Affective Well-Being and Job Satisfaction

First described by Burns (1978), and subsequently imported into the organizational literature by Bass (1985), transformational leadership has been a topic of academic study for over thirty years (Bono & Judge, 2004). According to Bass (1985, 1998; Bass & Avolio, 1994), four key characteristics of transformational leadership (i.e., idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration) differentiate transformational leaders from other leaders, and are the behaviors by which leaders exert influence on employees. More specifically, Bass (1998) argues that "those under stress and seeking relief from it (stress) readily respond zealously to leaders who strengthen their faith in that relief," and that "[by] calling for a transcendental goal or innovative mission to relieve the stress, charismatic leaders induce renewal and mobilize collective effort to face the stress or crisis" (p. 32).

Transformational leadership is part of the model of the 'full range of leadership'[1] (Bass & Avolio, 1995; Avolio 1999), and is viewed as an active form of leadership in comparison to other forms in this range including transactional (i.e., contingent reward, and management-by-exception leadership) and laissez-faire (i.e., 'do nothing') leadership styles. Transformational leadership is composed of four key components: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Idealized influence refers to the behaviors enacted by transformational leaders that establish them as role models within their group. Transformational leaders' inspirational motivation encompasses the behaviors that infuse meaning, challenge, and optimism into followers' relationships with their work. With intellectual stimulation, followers are encouraged to increase their creative range and innovation. Finally, with individualized consideration, transformational leaders attend to the specific needs for

achievement and growth of their individual followers. Empirical research has demonstrated that transformational leadership behaviors exhibited by managers, supervisors, and other leaders can improve components of their employees' and work groups' subjective well-being.

Affective well-being and job satisfaction

In describing research on job satisfaction, Weiss (2002) states that, "current definitions of job satisfaction, along with the research guided by these definitions, have obscured the differences among three related but distinct constructs: evaluations of jobs, beliefs about jobs, and affective experiences on jobs" (p. 173). With this in mind, I have divided the conceptualization of work groups' subjective experiences into three distinct constructs. I will consider both the attitudinal and evaluative components as comprising job satisfaction, and the affective experiences on the job will be assessed as affective well-being (positive and negative valences). Following the suggestions made by Weiss (2002), job satisfaction will be defined as the evaluations and related attitudes groups have made and formed with regard to their contentment, acceptance, and gratitude of their job.

To assess the affective component of groups' work experience, I investigate affective well-being, an aspect of subjective well-being (Harter, Schmidt, and Keyes, 2003). Subjective well-being is a broad construct, encompassing numerous factors (e.g., enthusiasm, and contentment) that may emerge in an individual or even a group as a result of peoples' participation in the world of work. According to Keyes, Shomotkin, and Ryff (2002), there are multiple types of subjective well-being, including affective indicators of happiness and cognitive assessments of more general (life) and domain-specific (job) satisfaction. Diener, Suh, Lucas, and Smith (1999) distinguish multiple dimensions of

subjective well-being, including pleasant affect and unpleasant affect. In the current study, I will follow the suggestions of Deiner et al. (1999) by treating affective well-being as two distinct constructs. While affective experiences at work, evaluation of jobs, and attitudes about jobs are related, they are proposed to be conceptually distinct (Weiss, 2002). Thus, in the current study, they will be observed separately, as correlated indicators of groups' subjective work experiences. The relationship between transformational leadership (Bass, 1985) and multiple indicators of work groups' subjective work experience (affective and evaluative/attitudinal) will be assessed both as a direct relationship, and as an interaction with conditions hypothesized to be salient to the relationship.

The Current Study

The present study will focus on work groups' (collective) affective well-being and job satisfaction as outcomes of their supervisors' use of a transformational leadership style. Klein and Kozlowski (2000) propose three different types of group-level constructs. Specifically, they state that group-level constructs can be conceptualized as global group properties, shared group properties, and configural group properties. Global group properties are those that are attributed to the group as a collective and are not extensions of the characteristics of the individual members. Shared group properties are based on the attitudes, perceptions, values, experiences, cognitions, or behaviours collectively held by group members. Configural group properties are those that emerge from the attitudes, perceptions, values, experiences, cognitions, or behaviours held by individual group members, yet capture an array, pattern or variability of the individual members' characteristics.

According to these definitions, the concept of transformational leadership can be conceptualized as a global group property. The group-level constructs of affective well-being and job satisfaction are conceptualized as configural group properties, as they are individual responses proposed to be patterned according to group supervisors' leadership style. That is, to the extent that a group's experience of its leader's behavior is both shared and salient, it should elicit outcomes that are to some extent both shared and salient. Multiple studies examining the outcome of supervisors' leadership styles have observed group-level outcomes such as personality (Hofmann & Jones, 2005), organizational citizenship behaviour (Boerner, Eisenbeiss, & Griesser, 2007), and collective efficacy (Chen & Bliese, 2002). While none of these studies investigated group-level affective well-being or job satisfaction, their rationale for the group-level measurement of these constructs would provide justification for doing so. Hofmann and Jones (2005) state that, "as individuals in a collective work together, they begin to develop shared expectations and norms that, in turn lead to the emergence of observable behavioural regularities" (p. 510).

Latane's (1981) social impact theory argues that individuals' changes in their psychological states, emotions, cognitions and beliefs result from the actions of other individuals (whether these actions are real, implied, or imagined). The theory would propose that as a result of social forces that are salient (captured in his theory as an aspect of *strength*), immediate, and numerous will exert greater impact on the focal individual. In the current study, the theory would propose that the emotions, cognitions, and beliefs associated with affective well-being and job satisfaction will be collectively impacted by all involved actors associated with that group. When combined, these actors will act as

social forces that are strong, immediate, and numerous impacting other group members. I argue that group members working together share experiences of group leadership, and will permeate throughout the group as affective (positive and negative) contagion, subsequently leading to a shared group reaction (i.e., affective well-being). Evaluations and attitudes (job satisfaction) are proposed to be shared across a given group in a similar manner.

In his initial conceptualization of transformational leadership, Burns (1978) states that, "whatever the separate interests persons might hold, they are presently or potentially united in the pursuit of 'higher' goals, the realization of which is tested by the achievement of significant change that represents the collective or pooled interests of leaders and followers" (pp. 425 – 426). Thus to the degree that the leaders and followers have a collective "pooled" interest in their affective well-being and job satisfaction, transformational leaders will unite their followers to collectively achieve these desired ends. In a similar vein, Bass (1998) states that transformational leaders are able to decrease the chronic stress of their groups of followers by, "transform(ing) personal concerns into efforts to achieve group goals." Additionally, transformational leaders decrease stress in groups through the creation of a positive, optimistic, and co-operative group climate. This climate is created through the inspirational motivation they provide to the group members. The direct link between transformational leadership and employee well-being has been demonstrated in multiple studies (e.g. Arnold, et al. 2007; Gilbreath & Benson, 2004; Nielsen, Randall, Yarker, & Brenner, 2008). Similarly, transformational leadership has been found to affect job satisfaction (Jung & Avolio, 2000; Bono & Judge, 2003). Consistent with these previous findings, I hypothesize that work groups'

supervisors' use of a transformational leadership style will positively affect the groups' affective well-being and job satisfaction.

Hypothesis 1: Supervisors' use of a transformational leadership style will be related to the higher positive affective well-being (H1a), lower negative affective well-being (H1b), and higher job satisfaction (H1c) of their work groups.

Moderators of the Relationship between Transformational Leadership and both Affective Well-Being and Job Satisfaction

I propose a model (see Figure 1) with two conditions proposed to moderate the relationship between transformational leadership and employees' subjective work experience (affective well-being and job satisfaction). The conditions selected for testing are proposed to interact with key aspects of Bass's (1985, 1998) transformational leadership theory. Each proposed condition serves as an indication of a different aspect of the work groups' context. First, work groups' perceptions of performing meaningful work captures their collective perceptions of the intrinsically motivating outcomes of their work (Hackman & Oldham, 1976). Second, work groups' collective efficacy characterizes a shared opinion that groups hold of their work-related abilities (Riggs, Warka, Babasa, Betancourt, & Hooker, 1994). Together, these constructs reflect the two critical aspects of the employment context by addressing experiences that work groups have both within their collective and with their work.

Meaningful work. In their job characteristics model, Hackman and Oldham (1976) state that individuals experience their work as being meaningful when they perceive it as "valuable and worthwhile" (p. 256). Thus for the purposes of the current study,

perceptions of meaningful work describes groups' collective evaluations that their work is both valuable and worthwhile. Meaningful work has been associated with reduced levels of work related stress (Knoop, 1994). With a sample of employees working within a long term care facility, Arnold et al. (2007) found that employees working for transformational leaders reported that their work was more meaningful, and demonstrated higher levels of positive affective well-being than those who did not work for transformational leaders. In another study, they found that meaningful work mediated the relationship between transformational leadership and positive affective well-being. Since Keyes et al. (2002) demonstrate that positive and negative affective well-being load onto the same higher order factor (subjective well-being), I propose that in addition to increasing positive affective well-being, transformational leadership will also decrease negative affective well-being.

Though Arnold et al.'s (2007) study observed employees' perceptions of performing meaningful work as mediating the relationship between transformational leadership and employees' affective well-being, it is plausible that it can serve as a moderator in situations where there is a previously established group climate that both instils the meaning into and removes the meaning from the groups' work. I argue that within an organizational context, there are numerous forces that impact the meaning that groups' work holds. Hackman and Oldham's (1976) job characteristics model proposes that aspects such as skill variety, task identity, and task significance will impact the experienced meaningfulness of the work. Each of these predictors can plausibly emerge from many sources other than group's immediate supervisor. Hackman and Oldham (1976) also propose that the experienced meaningfulness of the work will subsequently

positively impact satisfaction with the work. Some examples of these sources of meaningfulness of the work other than the supervisor are: the upper echelons of the organization, the work itself (Hackman & Oldham, 1976), the perspectives of the public relating to the work, and the perspectives of the individual group members shared through group interactions (Salancik & Pfeffer, 1978). In a group situation with multiple inputs (e.g. skill variety, sources of task identity, and sources of task significance), I argue that these external sources of influence act in concert to create a climate of performing meaningful work, or a lack thereof. I propose that group climates of performing meaningful work will interact with their leaders' transformational leadership styles to affect both groups' affective well-being and job satisfaction. When both transformational leadership and groups' perceptions of performing meaningful work are high, they will combine to additively impact both groups' affective well-being and their job satisfaction.

These proposed effects would be expected to aggregate to the group level, as the perception of performing meaningful work is expected to develop across the group as a result of members' shared interactions with the various sources of meaning previously described (e.g. the upper echelons of the organization, the work, the perceptions of the public, and other group members). The group-level perception of performing meaningful work is conceptualized as a shared group property (Klein and Kozlowski, 2000). The meaning each individual derives from the work results from a common source (the internal and external contacts with the work group, and the work itself). According to Klein and Kozlowski (2000), shared group properties emerge from stimuli held in common across the group. This pattern is influenced by members' experience with both internal and external stimuli as a member of the group. For example, members of a work group might

work similar jobs which have similar job characteristics (e.g. skill variety or task significance: Hackman and Oldham, 1976), similarly, through the process of social information processing (Salancik and Pfeffer, 1978) groups would develop collectively held attitudes and perceptions. Thus, I hypothesize that groups' perceptions of meaningful work will moderate the relationship between transformational leadership and the work groups' affective well-being and job satisfaction.

> *Hypothesis 2: Work groups' perceptions of performing meaningful work will moderate the relationship between supervisors' degree of transformational leadership and the positive affective well-being (H2a), negative affective well-being (H2b), and job satisfaction (H2c) of their work groups. That is stronger perceptions of performing meaningful work will supplement the relationship between transformational leadership and both work groups' positive affective well-being (H2a), and job satisfaction (H2c). In addition, stronger perceptions of performing meaningful work will have a buffering effect on the relationship between transformational leadership and negative affective well-being (H2b).*

Collective efficacy. I propose that work groups' collective efficacy will moderate the relationships between transformational leadership and both group affective well-being and job satisfaction. Riggs, Warka, Babasa, Betancourt, and Hooker (1994) describe collective efficacy as an individually-referenced group-level construct, and state that it refers to "individuals' assessments of their group's collective ability to perform job-related behaviours and the perceived level of contingency between group performance and

subsequent outcomes perceived, and outcomes experienced by the group" (p. 794). The current paper will conceptualize collective efficacy as a shared property (Klein and Kozlowski, 2000), as perceptions and cognitions commonly held by work group members.

From an individual level of analysis, self-efficacy has been shown to have a positive impact on individual outcomes in multiple studies (e.g., Siu, Lu, &, Spector, 2007; Jex, Bliese, Buzzell, & Primeau, 2001; Luszczynska, Scholz, & Schwarzer, 2005; and Walumbwa, Orwa, Wang, & Lawler, 2005). For example, Siu et al. (2007) found that generalized self-efficacy was positively related to psychological well-being. I argue that similar effects would occur at the group-level and be applicable to groups' affective well-being. Additionally, Walumbwa et al. (2005) demonstrate that groups' collective efficacy has a direct effect on groups' job satisfaction. Similarly, when these authors observed at the 90% level of significance ($p<.10$), they found that the interaction of transformational leadership and collective efficacy was related to higher job satisfaction. I expect a similar interaction to occur in the present study relating to job satisfaction. In an attempt to extend the findings of Walumbwa et al. (2005), I propose that groups' collective efficacy will interact with the groups' supervisors' transformational leadership styles to affect the groups' affective well-being. A group with high collective efficacy could respond more positively to the transformational leader's inspirational motivation, intellectual stimulation, and idealized influence. Groups with high collective efficacy are proposed to draw on their confidence and past success, embrace their leaders' transformational qualities (motivation, stimulation, and charisma), and respond in a positive manner. As both transformational leadership and collective efficacy have been demonstrated to positively impact employees' well-being and job satisfaction, the current study will expect them to

interact to impact work groups' subjective outcomes. Thus, I hypothesize that collective efficacy will moderate the relationship between transformational leadership and groups' subjective outcomes.

> *Hypothesis 3: Work groups' collective efficacy will moderate the relationship between supervisors' degree of transformational leadership and the positive affective well-being (H3a), negative affective well-being (H3b), and job satisfaction (H3c) of their work groups, whereby higher levels of collective efficacy will supplement the relationship between transformational leadership and both work groups' positive affective well-being (H3a), and job satisfaction (H3c). Higher levels of collective efficacy will have a buffering effect on the relationship between transformational leadership and negative affective well-being (H3b).*

Method

Sample and Design

The current field study was conducted at a large branch of a Canadian federal agency. Participants were selected based on their group leaders' involvement in a leadership development program. Some group leaders were directly involved in the leadership program, some leaders had volunteered to participate and were on a waiting list to be involved in the program, and some were randomly selected from the remaining work groups within the organization and had no involvement with the leadership development program. Participants in this study were employees reporting to the supervisor, and performed office work. All participants worked on site at the location and reported

directly to their group supervisor. The sample included 175 employees working in 42 groups. Employees were ensured that their identities would remain confidential, and that the appropriate ethical guidelines imposed by the University of Manitoba's Joint Faculty Research Ethics Board would be strictly followed.

Data was collected at two time periods via online surveys. The first collection period occurred between November 2008 and January 2009. The second collection period occurred in June 2009. All participants completed the first survey prior to the commencement of the leadership development program. The online questionnaire completed by participants contained all focal scales (see Measures below). All items are presented in Appendix 1. The questionnaires were disseminated on the agency's intranet and employees were only able to respond to the questionnaires on their desktop computers (at their work stations) and were permitted to do so on paid time.

Measures

Transformational leadership. In measuring groups' perceptions of their supervisor's transformational leadership style, this study used a measure based on a scale created by Carless, Wearing, and Mann (2000). Due to time constraints of the study participants, the original scale was reduced from the original seven items to four to reflect items that tap idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Item selection was based on the expert opinion of a researcher in the field. Participants were asked, "*Thinking of the past few weeks, how often has each of the following situations occurred?*", and responded to each item using a 5-point Likert-type scale, with bases of *Never* at the low end, and *All of the Time*, at the high end. The measure demonstrated a high reliability at time 1 ($\alpha = .90$).

Meaningful work. Group's perceptions of performing meaningful work was measured using 3 items taken form a scale developed by Ashmos and Duchon (2000) to measure workplace spirituality. Participants were asked, "Thinking of the past few weeks, how much of the time have members of your team felt each of the following?" They responded to each item using a 5-point Likert-type scale, with bases of *Never* at the low end, and *All of the Time*, at the high end. The measure demonstrated a high reliability at time 1 ($\alpha = .89$).

Collective efficacy. Groups' collective-efficacy was measured using a measure based on a scale created by Riggs et al. (1994) to measure collective efficacy beliefs. The original scale was reduced from seven items to six. One item was removed from the original scale at the request of the sponsoring organization, because it asked if group members should be fired. For the collective efficacy beliefs scale, group members were asked, "Think about the team in which you work. When responding to the following items, answer in reference to this group's work-related ability." Group members responded to each item using a 7-point Likert-type scale, with bases of *Strongly Disagree* at the low end, and *Strongly Agree*, at the high end. The measure demonstrated a high reliability at time 1 ($\alpha = .83$).

Job satisfaction. Groups' job satisfaction was captured using a measure based on a scale created by Cammann, Fichman, Jenkins, and Klesh (1983). All participants were given three items that were measured using a 7-point Likert-type scale, with bases of *Strongly Disagree* at the low end, and *Strongly Agree*, at the high end. The measure demonstrated a high reliability at both time 1 ($\alpha = .80$) and time 2 ($\alpha = .93$).

Affective well-being. Groups' affective well-being was captured using a measure based on a measure of job related well-being (Warr, 1990; Mullarkey, Wall, Warr, Clegg, & Stride, 1999). This scale was reduced from twelve items to six to accommodate the time constraints of the study participants. Scale reduction for well-being was based on the applicability of items. The measure captures the separate yet related constructs of positive and negative affective well-being. For all measures, participants were asked, "Thinking of your job, how much of the time does your job make you feel each of the following?" They responded to each item using a 5-point Likert-type scale, with bases of *Never* at the low end, and *All of the Time,* at the high end. The positive affective well-being scale demonstrated acceptable reliability at both time 1 ($\alpha = .85$) and time 2 ($\alpha = .88$). The negative affective well-being scale also demonstrated acceptable reliability at both time 1 ($\alpha = .75$) and time 2 ($\alpha = .86$).

Individual responses for the transformational leadership scale were aggregated to the group-level using an additive composition model (Chan, 1998). In an additive model the aggregation is based on a salient functional relationship. This type of composition model is appropriate for observing transformational leadership in the current study, as the members of the observed groups are grouped together into salient functional groups (groups formally designated by the organization). Furthermore, it is these groups that determine the supervisor (the focus of the transformational leadership measure) under which the individuals work. All items are group referenced, and as such directly measure the group-level construct. In this type of composition model, the higher-level construct is created by summing or averaging the lower level units (Chan, 1998).

For the remaining constructs (i.e., meaningful work, collective efficacy, affective well-being, and job satisfaction), individual responses will be aggregated to the group-level using a referent-shift consensus model (Chan, 1998). This type of composition model involves the researcher taking a conceptual definition and an operationalization of a construct at a lower level (individual level), and changing the referent of the measures to reflect a higher-level construct (group level). The researcher must statistically justify aggregation by demonstrating the within-group agreement for the aggregated scores (Chan, 1998).

Results

All analyses were conducted using SPSS version 16. To test the appropriateness of aggregating the focal constructs to the group level, I followed the advice of multiple researchers (Klein & Kozlowski, 2000; LeBreton & Senter, 2008) and tested for within group agreement using the estimate $r_{wg(j)}$ (James, Demaree, & Wolf, 1984) for all scale measures. According to Klein and Kozlowski (2000), $r_{wg(J)}$ is used to determine the within unit (group) agreement of a given measure. All measures aside from job satisfaction had values above .71, which shows strong to very strong agreement (LeBreton & Senter, 2008). The measures for job satisfaction (time 1 - .39, and time 2 - .69) indicate that there was weak agreement at time 1, and moderate agreement at time 2. Thus, as the time one measure was captured as a control variable, and the time 2 measure was the dependent variable of interest in the analyses, I will accept these results as justification for aggregation to the group-level. Chen and Bliese (2002) argue that when a construct is theoretically defined as a group-level construct strong interrater agreement ($r_{wg(j)}$) can be used to justify aggregating the construct to the group-level.

To test the construct validity of the measures, I used a principal components analysis with a varimax rotation, observed at the individual level of measurement. Two separate principal component analyses were conducted. One analysis was conducted for the predictor variables (transformational leadership), the two proposed moderating variables (meaningful work and collective efficacy), and the three composite control variables measured at time one (positive affective well-being, negative affective well-being at Time 1, and job satisfaction). Another analysis was conducted for the criterion variables at Time 2 (positive affective well-being, negative affective well-being, and job satisfaction). Separate principal component analyses were conducted for the Time 1 variables (independent, moderating and control variables), and the Time 2 dependent variables because individual responses were not able to be tracked across time points.

The first principal component analyses demonstrated that all constructs demonstrated adequate construct validity, and all factors aside from affective well-being and job satisfaction loaded exclusively onto their theoretically-appropriate factors. Results of the first principal component analysis are presented in Table 1. The second principal component analyses demonstrated that positive affective well-being and job satisfaction loaded onto the same factor, with negative affective well-being loading onto a second factor. This analysis was conducted using the arbitrary criteria (minimum eigenvalue = 1) for factor definition. Observing the scree plot, however, there is evidence that this criteria confused the actual factor structure, as there was evidence of a third factor (eigenvalue = .97, explaining 10.78% of the variance). Forcing the structure into three separate factors, all items loaded onto their proposed factors. The structure of the three factors confirm the findings of Diener et al. (1999) who distinguished three separate dimensions of employees'

positive and negative affective well-being. Similarly, these results are consistent with the suggestions made by Weiss (2002). Results of the second factor analyses (using forced three factors) are presented in Table 2.

Descriptive statistics and intercorrelations appear in Table 3. Tests of moderating effects were conducted using hierarchical linear regression. In total, six regression equations were calculated, two for each proposed moderating condition on each criteria variable (i.e., positive affective well-being, negative affective well-being, and job satisfaction). The control variables (i.e., group size, involvement in the coaching intervention and time 1 of the focal criterion measure) were included in the first step of each regression equation. In the second step, the direct effects of both the independent variable (transformational leadership) and the moderating conditions under investigation were tested along with an interaction term. The interaction term was derived by computing the product of the centered scores of transformational leadership and the moderating condition under investigation (Aiken & West, 1991). Due to the relatively small sample size of the aggregated cases (n=42), a .1 level of significance was used as a criterion for support. The decision to use a 90% level of significance (using a two tailed test of significance) was made with the intent of balancing type I and type II error (Cole, Bruch, & Shamir, 2009). Previous studies on employees' affective and attitudinal outcomes (e.g. satisfaction and positive emotional climate) have indicated relationships with a .1 level of significance in their tables (Campion & McClelland, 1991; Campion, Medsker, & Higgs, 1993; Cole et al., 2009). Following the advice of previous researchers (Cole et al., 2009), *p* values falling between .05 and .1 will be termed "marginally significant" (p. 1713).

All results of regression analyses are presented in Table 4. The results demonstrate that there is no significant direct relationship between transformational leadership and positive affective well-being (B = .16, R^2 = .20, p = .414), negative affective well-being (B = .04, R^2 = .14, p = .827), and job satisfaction (B = .04, R^2 = .44, p = .785). Hypothesis 1a, 1b, and 1c are therefore not supported.

Groups' perceptions of performing meaningful work significantly moderated the relationship between transformational leadership and both groups' positive affective well-being (B = -.31, R^2 = .37, p = .064), and groups' job satisfaction (B = -.30, R^2 = .54, p = .046). However, the sign of the relationship indicates that transformational leadership has a negative relationship with groups' affective well being under conditions of high levels of perceptions of meaningful work. While there was a significant interaction between transformational leadership and conditions of group perceptions of meaningful work, as hypothesized, the direction of the relationship is in the opposite direction than was proposed in hypotheses 2a and 2c. Hypotheses 2a and 2c are partially supported. Plots of the interactions are presented in Figures 2 and 3. There was not a significant interaction between groups' perceptions of performing meaningful work and transformational leadership on groups' negative affective well-being (B = -.23, R^2 = .18, p = .255). Hypothesis 2b is therefore not supported.

Groups' collective efficacy demonstrates a significant moderating effect on the relationship between transformational leadership and both positive affective well-being (B = -.40, R^2 = .34, p = .024), and job satisfaction (B = -.26, R^2 = .50, p = .086). However, the sign of the relationship indicates that transformational leadership has a negative relationship with groups' positive affective well being under conditions of high collective

efficacy, yet there is a positive relationship under conditions of low collective efficacy. Similarly, collective efficacy moderated the relationship between transformational leadership and job satisfaction in a manner that suggests that while it has a positive effect under both conditions, this effect is much stronger under conditions of low levels of collective efficacy. While there was a significant interaction between transformational leadership and conditions of collective efficacy, as hypothesized, the sign of the interaction is different from that proposed in hypotheses 3a and 3c. Thus, hypotheses 3a and 3c are only partially supported. Plots of the interactions are presented in Figures 4 and 5. There was not a significant moderating effect of groups' collective efficacy on the relationship between transformational leadership and negative affective well-being (B = -.25, R^2 = .21, p = .204). Hypothesis 3c lacks support.

To further test the directional simple effects of the significant interactions, I conducted a test of the simple effects (Aiken and West, 1991). In performing these analyses, I transformed the (already centered) moderator variables, so that the mean was plus/ and minus one standard deviation from zero, creating hi- and low- levels of each condition. Using these transformed variables, I created new interaction terms by multiplying them with the centered transformational leadership measure. I then entered the new variables into the regression equations. The results demonstrate that under high-levels of collective efficacy transformational leadership has a positive impact on groups positive affective well-being (B = .41, R^2 = .34, p = .081). None of the other simple effects demonstrated significant relationships.

Discussion

The study investigated the contextual conditions under which the relationship between transformational leadership and work groups' affective well-being and job satisfaction. While there was not a significant main effect of transformational leadership on affective well-being, groups' perceptions collective efficacy had a significant moderating effects on the relationship between transformational leadership and groups' positive affective well-being. Interestingly, the current results suggest that transformational leadership has its greatest impact on groups under conditions of low levels of collective efficacy. This would suggest that it has a compensatory effect on groups' positive affective well-being, when the groups have low levels of collective efficacy. Thus, transformational leadership might have its greatest effects on groups' positive affect when they lack a strong sense of collective efficacy.

Conversely, there were multiple significant interactions, which did not demonstrate significant simple effects. While no definitive suggestions can be made based on these findings, it does raise some interesting questions that could help clarify our understanding of the contextual conditions under which transformational leadership is most and least effective. Also, given the nature of the conditional effects that transformational leadership has on both positive affective well-being and job satisfaction, it is possible that the dis-ordinal (cross over) interactions observed explain the counter-intuitive findings that transformational leadership has no direct relationship with groups' outcomes. The occurrence of this type of interaction is at the very least interesting, as it could have strong implications for the applicability of transformational leadership under certain conditions, and could suggest boundary conditions to the empirically supported relationship between transformational leadership and both well-being and job satisfaction. Specifically, that

transformational leadership could have a negative affective impact on groups who both see themselves as highly capable, and perceive their work to be highly meaningful. The impact of these interactions should be investigated in future research.

An important theoretical implication of these results is that transformational leadership might have a differential impact on different types of work groups. This would be interesting to test in a future study that would test multiple leadership styles and their impact on groups' affective well-being and job satisfaction under conditions of differing levels of collective efficacy and perceptions of meaningful work. It is possible that certain types of leadership are more effective under certain conditions.

While the current study is constrained by the size of the sample (n=42) it would be interesting to determine whether multiple group context conditions impact groups' affective well-being. If this is the case, it would provide evidence that transformational leadership compensates for groups' detrimental working conditions.

Future research could also elaborate on the current study by observing the full concept of subjective well-being. Additionally, studies could test the relationships that different types of leadership from the full range of leadership model (e.g. transactional and passive forms of leadership: Avolio, 1999) have with employee well-being. Finally, future studies could observe the group-level relationships, individual-level relationships, and multilevel relationships between transformational leadership and employees' affective well-being and systematically determine the impact that level of analysis has on the relationship between transformational leadership and well-being.

Study Limitations

The current study relies upon single source measures for all constructs and self-report measures for all constructs aside from the leader's use of a transformational leadership style. The model should be tested in future studies, using multi-source feedback.

Due to restrictions imposed by the host organization, demographic characteristics were not captured. Future studies should examine the effects of demographic characteristics as control variables in analyses of both moderator and main effects. The consideration of individual- and group-level differences would be interesting when testing a multi-level model that includes both individual- and group-level measures. The addition of demographic information and measures of individuals' characteristics would allow a better understanding of how a leader's transformational leadership style interfaces with individuals possessing certain characteristics. More specifically, these analyses could provide insight into the role that individual differences play in the relationship between transformational leadership and its outcomes. For example, if the study (at the individual-level of analysis), were to include a measure of the big five personality traits (Gosling, Rentfrow, & Swann, 2003), one could control for personality and test whether an individuals' collective efficacy and perceptions of performing meaningful work moderates the relationship between their leaders' transformational leadership behaviours and the individuals' outcomes. It is possible that specific personality types would be associated with the counterintuitive findings that have emerged at the group-level.

Finally, most groups were selected for the study based on group leaders volunteering to participate in a leadership development program. There could be differences in the leaders' behaviours and group climates for leaders who volunteered, and

those who did not volunteer. Thus in future studies, the researcher should aim to randomly select and the participant groups. While this issue was partially addressed through the inclusion of an additional randomly selected sub-sample of group leaders, this sub-sample only consisted of eight group leaders and their respective work groups. Future replications of the study should aim to collect data from a completely random sample.

More precise attention to the conditions under which a transformational leadership style positively affects the positive affective well-being and job satisfaction of organizational work groups would allow organizations to account for these conditions in their approach to group working conditions. Specifically, organizations could provide transformational leadership training to the supervisors whose groups are working under the sub-optimal condition of having low levels of collective efficacy. The current results would indicate that in these situations implementing a transformational leadership style would improve groups' affective outcomes associated with their jobs. Thus, organizations could implement transformational leadership training to the leaders of groups working under sub-optimal conditions, and potentially circumvent the negative effects these conditions have on groups' outcomes.

Additionally, organizations can have a better understanding of the collective impact these constructs have on the affective well-being and job satisfaction of their groups through demonstrating the compensatory effects that transformational leadership has on group-level affective well-being and job satisfaction under sub-optimal conditions. This increased understanding of the collective impact could increase the likelihood of organizations, whose groups have low-levels of collective efficacy, adopting development programs aimed at developing transformational leaders and thus improve the outcomes of

their work groups. The benefits of continued organizational development targeting these objectives would be beneficial to both employees and organizations. Harter, Schmidt, and Keyes (2002) discuss the long-term organizational benefits of high-levels of employee well-being, and state that through the improvement of employee well-being organizations can better accomplish their own goals while accomplishing those of their employees.

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Footnote

[1] In this study, I focus solely on transformational leadership. However, in addition to transformational leadership, Bass's (1985, 1998) model of the full range of leadership (Bass, 1998; and Avolio, 1999) includes three forms of transactional leadership (positive contingent reward leadership, active management-by-exception leadership, and passive management-by-exception leadership), and laissez-faire leadership. Positive contingent reward occurs when a leader assigns, or gets agreement on followers' goals and objectives, and subsequently rewards them for reaching these goals and objectives. In an active management-by-exception leadership style a leader actively monitors followers' deviations from pre-set goals, objectives, and standards and when necessary the leader subsequently takes corrective action. Conversely, a passive management-by-exception leadership style, describes when a leader does not actively monitor followers' behaviours, and merely waits for deviations from pre-set goals, objectives, and standards to occur. Upon the occurrence of deviation, the leader then takes corrective action. Finally, a laissez-faire leadership style is embodied by a leader who does not make necessary decisions; delays action; and ignores the responsibilities of leadership. According to Bass (1998), this type of leadership is both the most inactive and most ineffective form of leadership.

Table 1 Caption

Principal Component Analyses for the time one variables (transformational leadership, collective efficacy, meaningful work, positive affective well-being, job satisfaction and negative affective well-being)

TABLE 1

Factor Analysis for Moderating Variables

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Transformational Leadership 1	.844					
Transformational Leadership 2	.789					
Transformational Leadership 3	.806					
Transformational Leadership 4	.774					
Collective Efficacy 1		.773				
Collective Efficacy 2		.611				
Collective Efficacy 3		.800				
Collective Efficacy 4		.819				
Meaningful Work 1			.846			
Meaningful Work 2			.861			
Meaningful Work 3			.804			
Positive Affective Well-Being 1				.796		
Positive Affective Well-Being 2				.839		
Positive Affective Well-Being 3				.761		
Job Satisfaction 1					.757	
Job Satisfaction 2					.785	
Job Satisfaction 3					.815	
Negative Affective Well-Being 1						.783
Negative Affective Well-Being 2						.792
Negative Affective Well-Being 3						.832

Table 2 Caption

Principal Component Analyses for the time two variables (time two positive affective well-being, time two negative affective well-being, and time two job satisfaction)

TABLE 2

Factor Analysis for Dependent Variables

Item	Factor 1	Factor 2	Factor 3
Positive Affective Well-Being 1	.837		
Positive Affective Well-Being 2	.879		
Positive Affective Well-Being 3	.848		
Negative Affective Well-Being 1		.863	
Negative Affective Well-Being 2		.874	
Negative Affective Well-Being 3		.826	
Job Satisfaction 1			.814
Job Satisfaction 1			.849
Job Satisfaction 1			.825

Table 3 Caption

Descriptive Statistics and Correlations

TABLE 3

Descriptive Statistics and Correlations[a]

	Variable	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11
1.	Coaching Intervention Involvement	1.53	.51											
2.	Team size	4.17	1.82	.04										
3.	Job satisfaction Time 1	15.54	2.05	-.15	.08	(.80)								
4.	Positive affective well-being Time 1	8.98	1.23	.08	.04	.27	(.76)							
5.	Negative affective well-being Time 1	11.46	1.12	-.02	.02	.20	.03	(.79)						
6.	Transformational leadership	14.98	2.02	-.08	-.11	.43**	.55**	.14	(.90)					
7.	Meaningful work	11.89	1.24	-.11	-.22	.24	.26	.10	.31*	(.89)				
8.	Collective efficacy	22.21	2.26	-.14	.02	.46**	.25	.11	.38*	.48**	(.83)			
9.	Job satisfaction Time 2	15.56	2.65	-.28	.04	.63**	.15	.15	.30	.45**	.41*	(.93)		
10.	Positive affective well-being Time 2	8.78	1.47	-.19	-.07	.553**	.36*	.15	.33	.50**	.26	.70**	(.83)	
11.	Negative affective well-being Time 2	10.96	1.47	-.13	-.14	.37*	-.08	.31	.115	.09	.21	.58**	.40*	(.90)

[a] $n = 42$.

* $p < .05$

** $p < .01$

2-Tailed Tests

Values in brackets "()" indicate scale reliabilities

Table 4 Caption

Results of Regression Analyses of Transformational Leadership, Meaningful Work, and Collective Efficacy on Group Affective Well-Being.

TABLE 3

Results of Regression Analyses of Transformational Leadership, Meaningful Work, and Collective Efficacy on Group Positive Affective Well-Being, Negative Affective Well-Being, and Job Satisfaction

	Group Positive Affective Well-Being Time 2		Group Negative Affective Well- Being Time 2		Group Job Satisfaction Time 2	
Predictors	***B***	***t***	***B***	***t***	***B***	***t***
Step 1						
Team Size	.-.08	-.50	-.18	-1.08	.021	.155
Positive Affective Well-Being Time 1	.37	2.26				
Negative Affective Well-Being Time 1			.33	1.95		
Job Satisfaction Time 1					.60	4.39***
Coaching Intervention Group	-.20	-1.21	-.11	-.63	-.20	-1.45
R^2	.18		.14		.43***	
Step 2 - Transformational Leadership						
Transformational Leadership	.16	.83	.04	.22	.04	.28
R^2	.20		.14		.44***	
Step 2 - Meaningful Work						
Meaningful Work	.29	1.42	-.04	-.21	.14	.905
Transformational Leadership	.06	.32	-.02	-.07	-.05	-.331
Meaningful Work * Transformational Leadership	-.31	-1.93*	-.23	-1.16	-.30	-2.085**
R^2	.37**		.18		.54***	

Step 2 - Collective Efficacy						
Collective Efficacy	-.05	-.25	.09	.44	-.02	-.11
Transformational Leadership	.11	.56	-.05	-.28	.03	.17
Collective Efficacy * Transformational Leadership	-.40	-2.39**	-.25	-1.30	-.26	-1.78*
R^2	.34 *		.21		.50***	

* p < .1
** p < .05
*** p < .01
Two-Tailed tests

Figure 1 Caption

Hypothesized Model

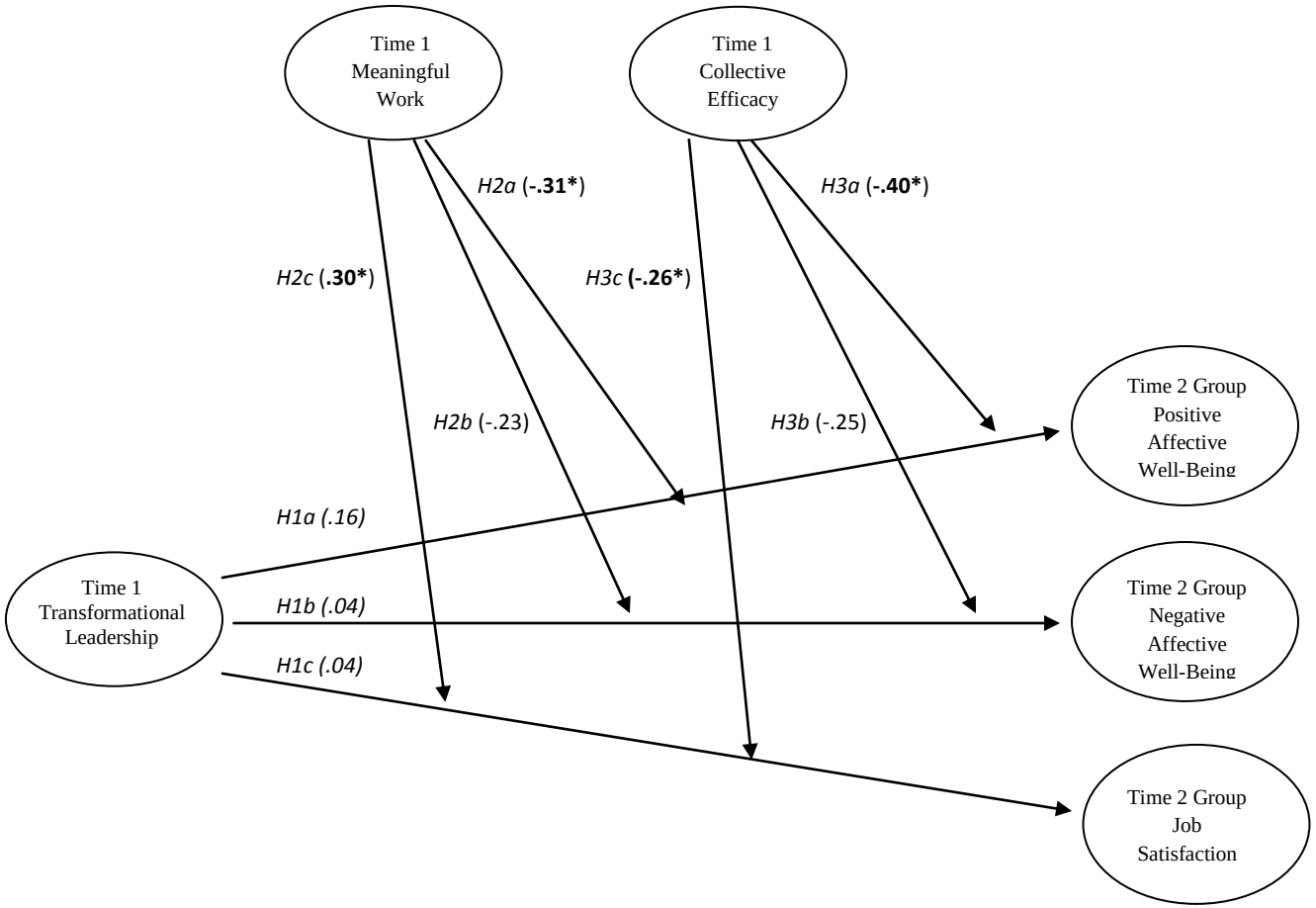
Time 1
Meaningful
Work
Time 1
Collective
Efficacy
H2a (-.31*)
H3a (-.40*)
H2c (.30*)
H3c (-.26*)
H2b (-.23)
H3b (-.25)
Time 2 Group
Positive
Affective
Well-Being
H1a (.16)
Time 1
Transformational
Leadership
H1b (.04)
Time 2 Group
Negative
Affective
Well-Being
H1c (.04)
Time 2 Group
Job
Satisfaction

Figure 2 Caption

Interaction Plot of the impact the interaction between transformational leadership and meaningful work and its effects on groups' positive affective well-being.

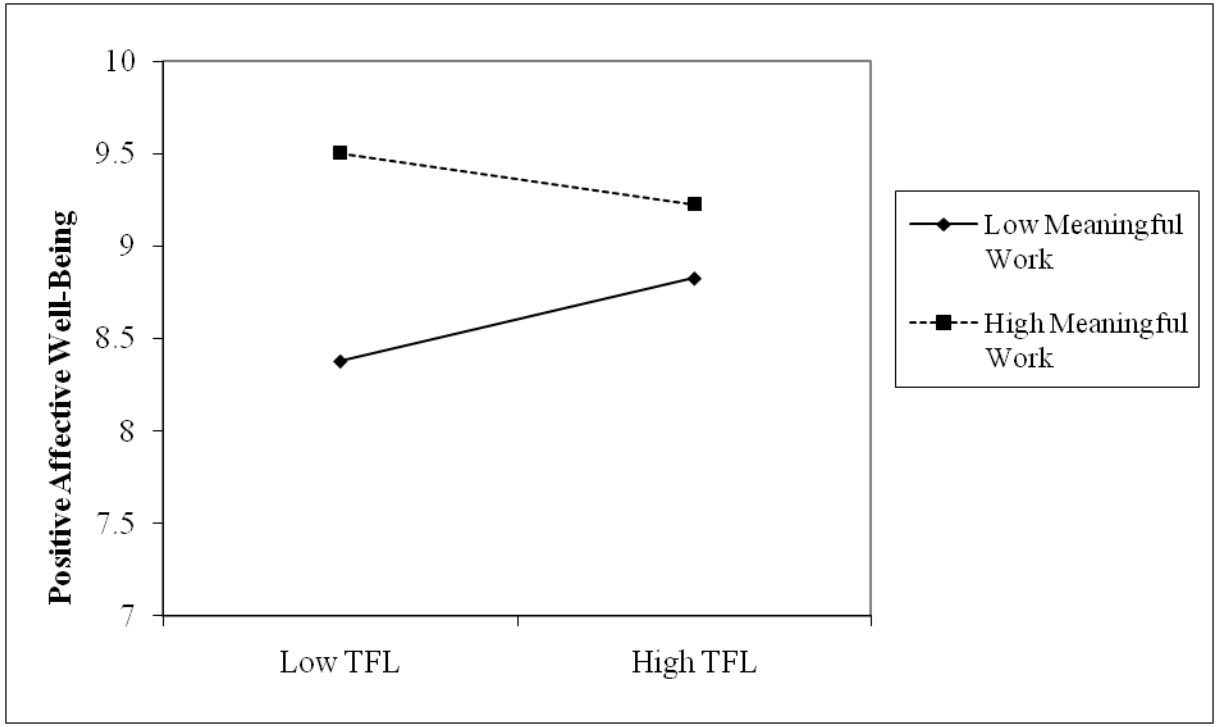
10
9.5
9
8.5
8
7.5
7
Positive Affective Well-Being
Low TFL
High TFL
Low Meaningful Work
High Meaningful Work

Figure 3 Caption

Interaction Plot of the impact the interaction between transformational leadership and meaningful work and its effects on groups' job satisfaction.

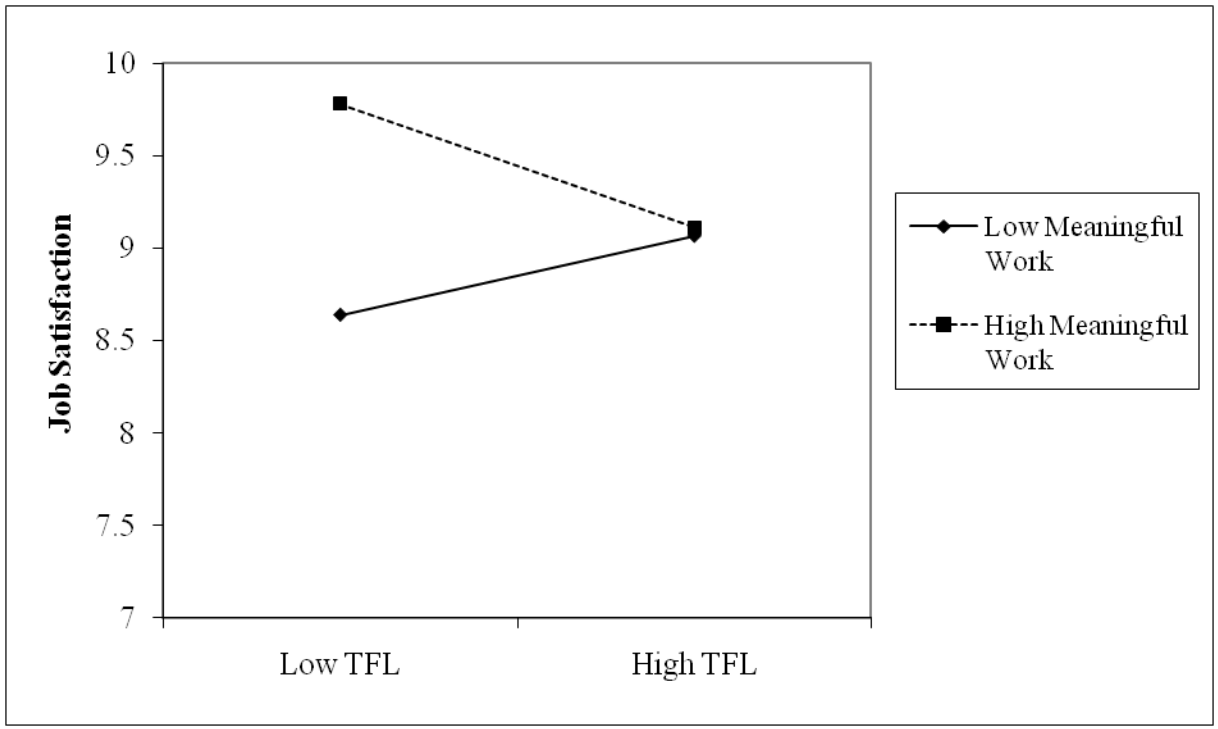
10
9.5
9
8.5
8
7.5
7
Job Satisfaction
Low TFL
High TFL
Low Meaningful Work
High Meaningful Work

Figure 4 Caption

Interaction Plot of the impact the interaction between transformational leadership and collective efficacy and its effects on groups' positive affective well-being.

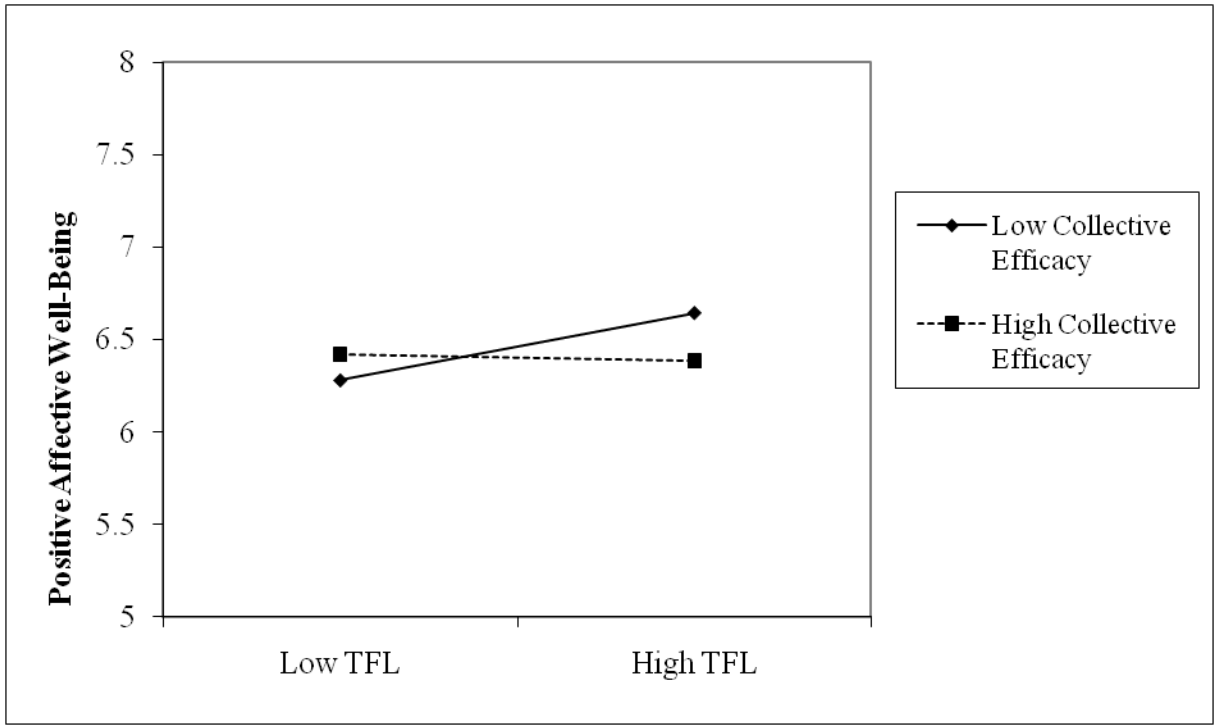
8
7.5
7
6.5
6
5.5
5
Positive Affective Well-Being
Low TFL
High TFL
Low Collective Efficacy
High Collective Efficacy

Figure 5 Caption

Interaction Plot of the impact the interaction between transformational leadership and collective efficacy and its effects on groups' job satisfaction.

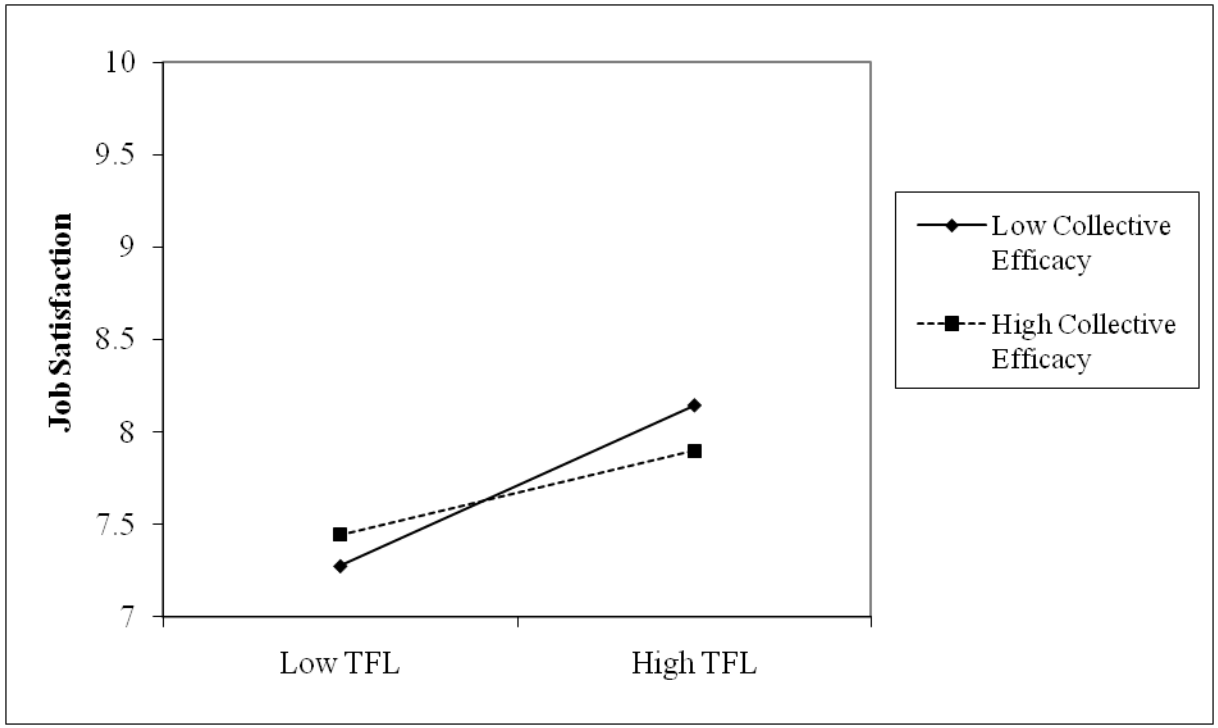
10
9.5
9
8.5
8
7.5
7
Job Satisfaction
Low TFL
High TFL
Low Collective Efficacy
High Collective Efficacy

Figure 6 Caption

Questionnaire Items.

Appendix 1

Questionnaire Items

Measure	Item
Transformational Leadership	
	Our team's supervisor treats staff as individuals, supports and encourages their development
	Our team's supervisor gives encouragement and recognition to staff
	Our team's supervisor encourages thinking about problems in new ways and questions assumptions
	Our team's supervisor is clear about his or her values and practices what he or she preaches
Collective Efficacy	
	The team I work with has above average ability
	The team is poor compared to other teams doing similar work
	This team is not able to perform as well as it should
	The members of this team have excellent job skills
	This team is not very effective
	Some members in this team cannot do their jobs well
Meaningful Work	
	The work our team does is meaningful
	The work our team does is worthwhile
	The work our team does is important

Job Satisfaction	
	All in all, members of our team are satisfied with our jobs
	In general, members of our team don't like our jobs
	In general, members of our team like working here
Positive Affective Well-Being	
	Motivated
	Enthusiastic
	Optimistic
Negative Affective Well-Being	
	Anxious
	Worried
	Tense