



# Fostering creativity and innovation through leadership and affective commitment: The moderated mediation analysis

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## Abstract

Leadership and individual commitment are important for creativity and innovation. However, little work has been reported on how transformational leadership interact with affective commitment to influence these constructs. The purpose of this paper was to examine the moderating effect of affective commitment on transformational leadership, and how the joint effects of transformational leadership and affective commitment affect both creativity and innovation. The evaluation was based on the analysis of data from 263 randomly selected employees in public and private sector organisations. Hierarchical moderated mediation analyses and PROCESS macro were utilised. The results suggest that the effect of transformational leadership on creativity was moderated by affective commitment, and in turn creativity partially mediated the joint effects of transformational leadership and affective commitment on innovation. The study found the joint effects of transformational leadership and individual commitment as an important factor for creativity and innovation. This finding provides an understanding of the theoretical and practical importance of these concepts for future research with potential for applied transformational leadership theory in academia.

**Key words:** Affective commitment, creativity, innovation, transformational leadership

## Introduction

There has been a growing interest on how transformational leadership influences creativity and innovation (Mumford, Scott, Gaddis & Strange, 2002; Pieterse, van Knippenberg, Schippers & Stam, 2010). By transforming personal values and self-concepts of followers, and elevating them to higher aspirations, transformational leaders influence intrinsic motivation of followers (Gumusluoglu & Ilsev, 2009); thereby increasing their creativity and innovation (Amabile and Pillemer, 2012). Furthermore, through individualized consideration and intellectual stimulation, transformational leaders build self-efficacy and empowerment of followers, which in turn affect creativity (Gumusluoglu & Ilsev, 2009). Notwithstanding these compelling conceptual expectations, the effects of transformational leadership on creativity and innovation have been equivocal (Khaola & Coldwell, 2019a; 2019b; Mumford & Lucuanan, 2004). This paper suggests the need for models that incorporate mediating and moderating factors in the prediction of creativity and innovation.

Creativity and innovation are vital for competitive advantage of organisations and economies (Anderson, Potočnik & Zhou, 2014; Gumusluoglu & Ilsev, 2009). It has been argued that the foundation of innovation is ideas, and ideas are developed, supported and implemented by and through people (Janssen, 2000, Scott & Bruce, 1994).

Several studies have shed some light on how a variety of factors moderate or mediate the impact of transformational leadership on creativity and innovation (Khaola & Coldwell, 2019a, 2019b; Qu, Janssen & Shi, 2015). However, little work has been reported on how such leadership interacts with affective commitment to influence creativity (Avolio, Walumbwa & Weber, 2009).

Since innovation is the result of creative efforts, the current paper seeks to gain a deeper understanding on how affective commitment moderates the relationship between transformational leadership and creativity; and how creativity in turn influences innovation. Put differently, the paper focuses at elucidating



the mechanism through which transformational leadership influences innovation, and the boundary conditions under which the relationship could be enhanced (Zhang, Zheng & Darko, 2018).

This study seeks to make two contributions to literature. First, by examining the joint effects of leadership and affective commitment on creativity and innovation, the study presents a novel perspective on how these factors may influence employee creativity at work. Second, the examination of the joint effects of personal resources (affective commitment) and job resources (leadership) and how they can reinforce each other towards boosting creativity and innovation remain unexplored in the literature (George & Zhou, 2007).

The paper unfolds as follows. After this introduction, the second section focuses on literature review, and the third section outlines the research methodology. The fourth and fifth sections present the results and their discussion respectively, and the final section concludes the paper.

## **Literature review and hypotheses**

Creativity is the production of novel and useful ideas, and innovation is the implementation or commercialisation of those ideas (Anderson et al., 2014). Thus the foundation of organisational innovation is creativity (Anderson et al., 2014; Zhou & Hoever, 2014, Shalley, Zhou & Oldham, 2004); the process that often starts with people (Janssen, 2000). While creativity is necessary, it is not a sufficient condition for innovation to occur because ideas may not be implemented (e.g. if they are not considered useful, or there are no resources to implement them) (Gumuslouglu & Ilsev, 2009). Transformational leadership and affective commitment are considered important for both creativity and innovation (Anderson et al., 2014).

### *Transformational leadership and creativity*

Bass and Avolio (1995) submit that transformational leadership consists of four components: charismatic role modelling (the leader's ability to inspire respect, admiration, loyalty and collective sense of mission); individualised consideration (the leader's ability to consider and understand individual follower's needs and aspirations); inspirational motivation (the leader's ability to articulate a compelling vision for the future, and how to achieve it); and intellectual stimulation (the leader's ability to challenge and stimulate followers to think about old problems in new ways). Some features of transformational leaders tend to support rather than control employees' behaviour; and this engenders intrinsic motivation in employees (Shalley et al., 2004). According to both Cognitive Evaluation Theory and Componential Theory of creativity, intrinsic motivation is the key antecedent of creativity (Amabile & Pillemer, 2012; Anderson et al., 2014; Shalley et al., 2004). Furthermore, individualized consideration and intellectual stimulation demonstrated by transformational leaders tend to build self-efficacy and empowerment of followers, both of which affect creativity (Gumuslouglu & Ilsev, 2009).

In line with these theories, previous studies have found positive relationships between transformational leadership and creativity. For instance, in the early 2000's, Shin and Zhou (2003) reported positive relationships between transformational leadership and creativity. Gumuslouglu and Ilsev (2009) found that transformational leadership had significant effects on creativity at individual and organisational levels of analyses. Similar findings were reported by Gong, Huang and Farh (2009), and Qu et al. (2015). Much as prior findings have been equivocal (Mumford & Licuanan, 2004); it is theoretically plausible to examine the following hypothesis:

**Hypothesis 1:** *There is a positive relationship between transformational leadership and creativity.*

### *Transformational leadership and innovation*

As suggested above, transformational leadership is expected to influence creativity, and creativity should in turn be a proximal antecedent of innovation. There is however good reasons to expect that transformational leadership may explain some direct variance in innovation as well.



First, as posited by Khaola and Coldwell (2017), even though transformational leadership is expected to predict both creativity and innovation, the relationship may be subdued with regard to idea generation (creativity); and be more pronounced with regard to idea promotion and implementation (innovation); primarily because the former may require knowledge and skills; while the latter may rely more on personal influence and support. This view is supported by Mumford and Licuanan (2004) who earlier posited that the influence of transformational leadership on creative performance may well reflect the influence of such leadership on idea support (innovation).

Second, according to the Upper Echelons Theory, leaders have substantial influence of architecting the strategy that reflects their dispositions and personal biases (Hambrick, 2007); implying that supporting and implementing creative ideas (innovation) falls more within the sphere of managerial influence than generation of ideas which may also require employee ability. Third, as suggested by Behavioural Plasticity Theory (the extent to which behaviour is influenced by social experiences, Rank, Nelson, Allen & Xu, 2009:467) innovation may be directly influenced by leadership and other social situational variables because it (innovation) is regarded as a social process that relies, for its enactment and success, on the support of, and promotion by supervisors and other employees. Several studies have found significant relationships between leadership and innovation (Khaola & Coldwell, 2017; Rank et al., 2009). It is hence hypothesised as follows:

**Hypothesis 2:** *There is a positive relationship between transformational leadership and innovation.*

### ***Creativity and innovation***

It is a widely held view that creativity and innovation are related but distinct concepts (Anderson et al., 2014; Potočnik & Anderson, 2016; Zhou & Hoever, 2014). Notwithstanding this axiom, there is a tendency to combine the items measuring creativity (production of novel and useful ideas) and innovation (support and implementation of new ideas) into one common concept such as innovative work behaviour (e.g. Janssen, 2000; De Jong & Den Hartog, 2010). This approach may be problematic because creative ideas may not necessarily be implemented or converted into innovations (Liu, Gong, Zhou & Huang, 2017). This paper argues therefore that this measurement approach, while arguably parsimonious, may conceal important theoretical and practical implications in this area. For instance, it is known that creativity and innovation have different antecedents and outcomes, and hence different approaches may be required to advance these phenomena in organisations (Khaola & Coldwell, 2017). The concepts also differ in that, while creativity has been conceptualised as an intra-personal process, innovation has been conceptualised as an inter-personal process (Potočnik & Anderson, 2016; Rank et al., 2009). Furthermore, in terms of causal ordering, researchers mostly agree that creativity is the precursor of innovation (Potočnik & Anderson, 2016; Zhou & Hoever, 2014). Despite this acknowledgment, little research has surprisingly been conducted on the relationships between creativity and innovation (Liu et al., 2017). The relationship between these constructs is examined through the following hypothesis:

**Hypothesis 3:** *There is a positive relationship between creativity and innovation.*

### ***The joint effects of transformational leadership and affective commitment on creativity***

While an upsurge in the number of studies examining the relationship between transformational leadership and creativity has resulted in insightful conclusions, some prior studies have uncovered inconsistent results as well (Pieterse et al., 2010; Mumford & Lucuanan, 2004). This has led researchers to make calls for the examination of *when (or for whom)* transformational leadership may impact on creativity and innovation (Anderson et al., 2014; Hoever & Zhou, 2014; Mumford & Licuanan, 2004; Qu et al., 2015).

The present study posits that affective commitment moderates the positive relationships between transformational leadership and creativity.

According to Substitutes of Leadership Theory, certain factors can enhance, neutralise or substitute the effects of leadership (Avolio et al., 2009; Kerr & Jermier, 1978). When employees are affectively committed, they work hard to achieve organisational goals, with or without supervision. Thus substitutes of leadership such as affective commitment may interact with transformational leadership to further influence organisational outcomes such as creativity and innovation. Also, the Trait Activation Theory (Tett & Burnett, 2003) posits that employee attributes may translate into desired behaviours if they are situated in relevant contexts (Kim, Van Dyne, Kamdar & Johnson, 2013). Since leadership creates social contexts (Anderson et al., 2014; Shalley et al., 2004), it can be argued that attitudes of employees such as affective commitment may find expression in supportive contexts created by transformational leaders (Khaola & Coldwell, 2019b). Furthermore, since the Broaden-and-Build Theory of positive emotions holds that positive emotions such as affective commitment can broaden the thought-action repertoires of employees (Frederickson, 2001), affectively committed employees may engage in divergent thinking (creativity); especially when they are supported by their leaders (Shalley et al., 2004). Overall, the extant theories are generative of expected patterns of the current paper that transformational leadership may interact with affective commitment to influence creativity. In support of these theories, the study by Khaola and Coldwell (2019b) empirically found that affective commitment moderates the positive relationship between leadership and employee innovative work behaviours. It can further be hypothesised as follows:

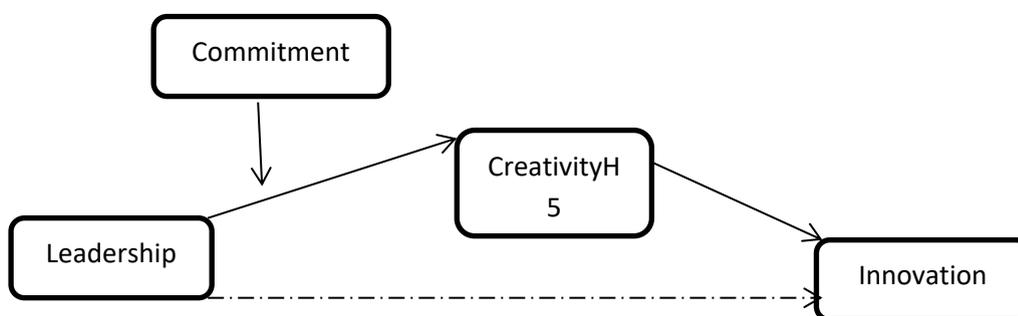
**Hypothesis 4:** *Affective commitment moderates the relationship between transformational leadership and creativity such that the relationship is stronger for more affectively committed employees; and weaker for less affectively committed employees.*

*The mediating role of creativity between the moderated effects of leadership by commitment, and innovation*

If transformational leadership and its moderated effects are hypothesised to directly influence creativity, and creativity in turn is hypothesised as the most proximal antecedent of innovation, it makes theoretical sense that creativity mediates the relationship between transformational leadership (and its moderated effects) and innovation. It is therefore plausible to examine the overall moderated mediation link as follows:

**Hypothesis 5:** *The moderated effects of transformational leadership by affective commitment on innovation are mediated by creativity.*

The conceptual model is shown in Figure 1.



**Figure 1:** The hypothesized model



## Research methodology

### *Sample and procedures*

The sample comprised three groups as follows: 1) 300 employees selected randomly from a population of 652 employees from the medium-sized public university in Lesotho; 2) all 37 participants enrolled in the Postgraduate Diploma in HRM; and 3) 122 employees selected from two state-owned enterprises and two private sector organisations located in Maseru, Lesotho. Self-administered questionnaires were delivered to employees, and were returned directly to the researcher. The response rates were 56%, 68%, and 57% respectively. Since the ANOVA test did not indicate significant differences between organisations, the three samples (total = 263) were analysed together. Of the respondent sample, 52.3% were males, and in terms of age group, most respondents (30.5%) were from 31– 40 age group. In terms of highest level of education attained, most participants (41.7%) had post-graduate degrees (honours, Masters and PhD). Non-academic staff accounted for 64.6%, and 53.7% of the sample did not have any supervisory responsibilities. The respondents had been in their current organisation for an average of 8.89 years ( $SD = 8.02$ ).

### *Measures*

*Transformational leadership:* The Multifactor Leadership Questionnaire (MLQ) was used to assess transformational leadership (Bass & Avolio, 1995). Eight items were used to assess this construct. Participants were asked to assess the extent to which the listed statements described the behaviour of their supervisors on a scale ranging from 0 (not at all) to 4 (frequently if not always). Sample items were 'my supervisor encourages me to look at problems from different angles', 'my supervisor helps me to develop my strengths', and 'my supervisor articulates a compelling vision for the future'.

The Cronbach's alpha (internal reliability of the scale) was 0.93. The confirmatory factor analysis (CFA) suggested that the first-order one-factor model of leadership demonstrated a good fit to data ( $X^2 (33) = 84.118$ ,  $p \leq 0.001$ , NFI = 0.95, TLI = 0.95, CFA = 0.97, RSMEA = 0.08).

*Affective commitment:* Five items drawn from the scale of Cook and Wall (1980) were used to measure this construct. On a scale ranging from 1 (strongly disagree) to 5 (strongly agree) the participants were asked to assess the extent to which they agreed with the listed statements. The sample item was: 'I am quite proud to be part of this organisation'. The Cronbach's alpha of the scale was 0.90.

The CFA suggested that the first-order one-factor model of affective commitment demonstrated a very good fit to data ( $X^2 (5) = 6.005$ ,  $p = 0.306$ , NFI = 0.99, TLI = 1.00, CFI = 1.00, RSMEA = 0.03).

*Creativity:* Three (3) items developed by Janssen (2000) were used to measure creativity. On the scale ranging from 0 (never) to 4 (always), participants were asked to rate how often they perform certain duties in their organisations. Sample items were: 'generating original solutions for problems', and 'creating new ideas for difficult issues'. After deleting the item: 'searching out new working methods, techniques or instruments', the Cronbach's alpha improved from 0.45 to 0.72.

*Innovation:* Six (6) items from the scale of Janssen (2000) were used to measure individual innovation at work. Participants were asked to rate how often they perform the list of duties in their organisations on the scale ranging from 0 (never) to 4 (always). Sample items were: 'acquiring approval for innovative ideas', and 'transforming innovative ideas into useful applications'. The Cronbach's alpha was 0.91.

The CFA showed that the first-order one-factor model of innovative work behaviour (creativity and innovation) demonstrated an acceptable fit to data ( $X^2 (27) = 91.626$ ,  $p \leq 0.001$ , NFI = 0.91, TLI = 0.92, CFI = 0.94, RSMEA = 0.104).



To assess construct validity and reliability average variance extracted (AVE) and composite reliability (CR) were computed. The results are shown in Table 1.

**Table 1:** Results of construct reliability and validity

Construct	1	2	3	4	AVE	CR
1. Transformational leadership	<b>0.809</b>				0.655	0.937
2. Commitment	0.490	<b>0.864</b>			0.747	0.936
3. Creativity	0.213	0.024	<b>0.781</b>		0.610	0.822
4. Innovation	0.275	0.176	0.628	<b>0.823</b>	0.678	0.927

AVE refers to the average amount of variation that a latent variable explains in the observed variable (Hair, Black, Babin & Anderson, 2010). To confirm convergent validity, the AVE of each variable should be greater than 0.50; and to confirm discriminant validity; the square-root of the AVE of each variable should be greater than correlations of that variable with other variables. As shown in Table 1, each variable had the AVE greater than 0.50, and the square-root of the AVE of each variable was greater than corresponding correlations with other variables. Thus the results of Table I provides evidence of convergent and discriminant validity of constructs. Furthermore, the Cronbach's alphas and composite reliability figures of all variables exceeded the Nunnally's threshold of 0.70; thus providing evidence of reliability of all constructs.

## Results

The correlation of independent variables with creativity and innovation are shown in Table 2.

**Table 2:** Correlations between independent variables and both creativity and innovation as dependent variables

Variable	Creativity	Innovation
Creativity	-	0.68**
Gender	0.14*	0.11
Age	-0.01	-0.02
Education	0.01	0.03
Management level	0.16**	0.24**
Commitment	0.03	0.18**
Transformational leadership	0.18**	0.25**

**Notes:** \* Significant at 0.05 (two-tailed); \*\*Significant at 0.01 (two-tailed)

As shown in Table 2, although transformational leadership was positively and significantly correlated with creativity and innovation, affective commitment was only significantly correlated with innovation, but not with creativity. Creativity and innovation were positively and very significantly correlated with each other.

In summary, correlations with independent variables were higher with innovation than with creativity.



To examine the direct, moderated and mediated effects, the combination of approaches recommended by Aiken and West (1991) and Baron and Kenny (1986) were used. In models 1 and 2 creativity was specified as a dependent variable, and in models 3 and 4 innovation was specified as the dependent variable. In model 1 demographic factors, transformational leadership and affective commitment were included as independent variables, and in model 2 the interaction of transformational leadership by affective commitment was added as an independent variable. Independent variables in model 2 were included again in models 3 and 4, and creativity was added as the independent variable in model 4. The relevant results are shown in Table 3 and explained below.

**Table 3:** Results of moderated mediation hierarchical analysis

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
	<b>Creativity</b>	<b>Creativity</b>	<b>Innovation</b>	<b>Innovation</b>
	( $\beta$ )	( $\beta$ )	( $\beta$ )	( $\beta$ )
Gender	0.13*	0.11	0.04	-0.03
Age	0.05	-0.06	-0.06	-0.03
Education	-0.01	0.01	0.03	0.03
Management level	0.14*	0.14*	0.20**	0.11*
Transformational leadership	0.26**	0.19**	0.32**	0.14*
Affective Commitment	-0.16*	-0.14	0.00	0.09
Transformational leadership X affective commitment		0.14*	0.19**	0.14*
Creativity				0.65**
$\Delta R^2$	0.09*	0.02*	0.17*	0.37**
$R^2$	0.09	0.11	0.17	0.54
<b>Notes:</b> * Significant at 0.05 (two-tailed); **Significant at 0.01 (two-tailed)				

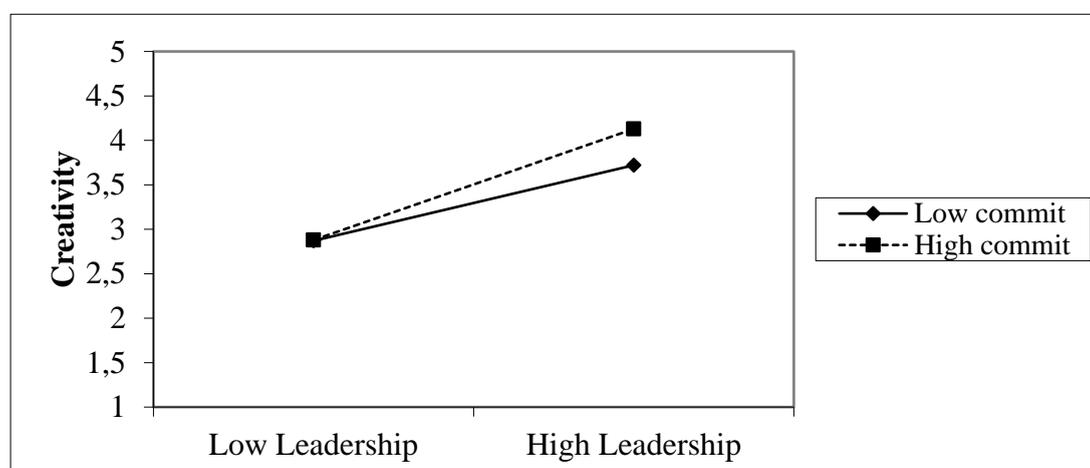
Hypotheses 1 and 2 predicted that transformational leadership would be positively related to creativity and innovation respectively. As shown in Table 3, transformational leadership was positively and significantly related to creativity ( $\beta = 0.26$ ,  $p \leq 0.01$ ) and innovation ( $\beta = 0.32$ ,  $p \leq 0.01$ ). These results suggest that employees who perceived high levels of transformational leadership reported high levels of creativity and innovation respectively, and vice versa. Even when creativity was included in the regression model to predict innovation (model 4), transformational leadership continued to have some significant, albeit reduced effects on innovation ( $\beta = 0.14$ ,  $p \leq 0.05$ ). Hypotheses 1 and 2 were hence fully supported.

Hypothesis 3 predicted that creativity would be positively related to innovation. As expected, Table 3 suggests that creativity was positively and significantly related to innovation ( $\beta = 0.65$ ,  $p \leq 0.01$ ). This implies that the higher the employee creativity, the higher the reported innovation, and vice versa.

Hypothesis 4 predicted that the relationship between transformational leadership and creativity would be moderated by affective commitment. In order to confirm that affective commitment moderates the relationship between transformational leadership and creativity, the interaction factor should not only be significant, but should also add a unique variance over other variables (Aiken & West, 1991). As shown in model 2, the effects of the interaction of transformational leadership by affective commitment on creativity was not only significant, but also produced additional unique variance over other variables ( $\beta = 0.14$ ,  $\Delta R^2 = 0.02$ ,  $p \leq 0.05$ ).

To illustrate these interaction patterns, the procedures suggested by Aiken and West (1991) were followed. Specifically simple slopes were produced for this purpose. The unstandardized regression coefficients and the constant from the final regression equation were used to plot the relationship between transformational leadership and creativity at high (one standard deviation above the mean) and low (one standard deviation below the mean) levels of affective commitment. The results are shown Figure 2.

**Figure 2. interaction patterns**



As shown in Figure 2, the impact of transformational leadership on creativity was high when affective commitment was high and relatively low when affective commitment was low. Hypothesis 3 was also supported.

Hypothesis 5 predicted that the moderated effects of transformational leadership by affective commitment on innovation would be significantly mediated by creativity. The moderated mediation is said to be confirmed when the indirect effects of transformational leadership on innovation through creativity differs in strength across low and high levels of affective commitment (Agarwal, 2017). In practice the following four conditions should be met: a) the independent variable (i.e. the interaction between transformational leadership and affective commitment) should be significantly related to the mediator (i.e. creativity); b) the independent variable should be significantly related to the dependent variable (i.e. innovation); c) the mediator should be significantly related to the dependent variable; and d) the effect of the independent variable on the dependent variable should be reduced when the mediator is included in the regression model, while that of the mediator should remain significant (Liu et al., 2017). Models 2, 3 and 4 in Table 3 satisfy conditions a), b), and c) respectively. Most importantly, when creativity (mediator) was included in the regression equation in model 4, the effect of the interaction of transformational leadership by affective commitment on innovation decreased from  $\beta = 0.19$ ,  $p \leq 0.01$  in model 3 to  $\beta = 0.14$ ,  $p \leq 0.05$  in model 4, while that of creativity remained significant ( $\beta = 0.65$ ,  $p \leq 0.01$ ). Thus all conditions for moderated mediation (conditional indirect effects) were met.

To further examine if the magnitude of the indirect effect of transformational leadership via creativity was different across low and high levels of affective commitment, Hayes's (2013) PROCESS macro for SPSS was used (Agarwal, 2017). The sample was bootstrapped 5000 times at 95% Bias Corrected Confidence Intervals (95% BC CI). Table 4 presents the estimates, standard errors, and confidence intervals for

conditional indirect effects of transformational leadership (independent variable) via creativity (mediator) on innovation (criterion) across low, middle and high levels of affective commitment (moderator).

**Table 4:** The results of moderated mediation analysis

<i>Moderator value</i>	<i>Conditional indirect effect</i>	<i>Standard error</i>	<i>Confidence interval (CI) at 95% confidence level</i>	
			<i>Lower</i>	<i>Upper</i>
2.25	0.02	0.05	-0.09	0.12
3.29	0.13	0.04	0.06	0.20
4.33	0.23	0.05	0.14	0.32

*Notes:* independent variable = transformational leadership; moderator = affective commitment; mediator = creativity; outcome variable = innovation

As shown in Table 4, the results suggest that the indirect effect of transformational leadership on innovation via creativity was stronger and significant at higher levels of affective commitment ( $\beta = 0.23$ ,  $CI = 0.14, 0.32$ ) but was relatively weak and insignificant at lower levels of affective commitment ( $\beta = 0.02$ ,  $CI = -0.09, 0.12$ ). Thus hypothesis 5 was also confirmed.

## Discussion

The approaches used by leaders to influence innovation have continued to attract the attention of researchers and policymakers (Khaola & Coldwell, 2019b). Many studies, suggest that the leadership–innovation link is more complicated than usually presented (Khaola & Coldwell, 2019b; Liu et al., 2017; Pieterse et al., 2010; Zhou & Hoever, 2014). The main purpose of the current study was to test the joint effects of leadership and affective commitment on employee creativity and innovation.

The effects of transformational leadership on creativity and innovation were in line with prior studies in this area (Gong et al., 2009; Rank et al., 2009; Shin & Zhou, 2003; Qu et al., 2015). Similarly, strong relations between creativity and innovation confirmed the conceptual similarities between the two constructs (Anderson et al., 2014; Liu et al., 2017).

Perhaps the most important contribution of the current study is on the results of the moderated mediation analysis. The results revealed that the effects of transformational leadership on creativity were significantly moderated by affective commitment, and in turn creativity significantly mediated these moderated effects on innovation. These results suggest that the effects of transformational leadership on creativity and innovation may not always be direct in nature, corroborating the views of Anderson et al. (2014) that the direct relationships between transformational leadership and creativity may be difficult to establish. In this regard, the fruitful line of research remains the one that goes beyond the determination of the actual impact transformational leadership has on creativity or innovation to the one which puts emphasis on when (and for whom) transformational leadership has such impact.

Interestingly, while affective commitment did not have significant effects on either creativity or innovation in this study, it (affective commitment) moderated the effects of transformational leadership on these criteria. Thus in line with the findings of George and Zhou (2007), the current findings imply that affective attitudes such as affective commitment may influence creativity if they are duly supported by appropriate behaviours such as transformational leadership behaviours.



When interpreting the results of this study, some limitations have to be considered. First, the study is cross-sectional in nature, and that makes it difficult to infer causality between variables. Although the hypotheses are grounded in sound theories, longitudinal and/or experimental studies are required to draw causal inferences. Second, since the data used in this study were collected from one source at one point in time, the problem of common method bias cannot be ruled out. Future studies could replicate the current one by collecting data from different sources. Third, the study included relatively educated respondents, and this may reduce its generalisability. Future studies could be based on other samples to test the hypotheses advanced in this study. More work is also needed to examine other social contexts that could be used to determine the actual impact of affective commitment on creativity and innovation in organisations. Similarly, future studies could examine employee attitudes and emotions that could enhance or neutralize the impact of transformational leadership on creativity and innovation.

## Recommendations

Despite some limitations, the findings of this study have implications for managerial practice. First, the study indicates that transformational leadership is important for creativity and innovation. Thus to increase creativity and innovations of individuals and organisations, managers need to acquire transformational leadership skills. There are two ways in which such leadership skills can be accumulated: through hiring people with such skills, or training them to acquire such skills. For instance, existing managers may be trained on how to a) consider the needs and aspirations of followers, b) challenge followers to think of old problems in new ways, c) articulate a compelling vision for the future, and d) inspire respect, admiration and collective sense of mission (Jung et al., 2003). Second, while affective commitment did not directly influence creativity or innovation, there is evidence that it moderated the effects of transformational leadership on both criteria. Thus while transformational leadership is apparently important for creativity and innovation, managers can benefit more if employees are affectively committed. In this regard, affectively committed individuals can be employed, or leaders can be trained on how to engender affective commitment among subordinates.

## Conclusions

There has been a growing interest on how transformational leadership influences creativity and innovation (Mumford et al., 2002). However, the mechanism through which transformational leadership impacts on these criteria is not clear (Anderson et al., 2014). The purpose of the study reported herein was to evaluate the joint effects of leadership and affective commitment on employee creativity and innovation. The findings suggest that the joint effects of leadership and affective commitment influenced employee innovation through creativity. Thus the study suggests the importance of the joint effects of transformational leadership and affective commitment on creativity and innovation.

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