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Dynamic Motivation to Lead: Construct Validity of Motivation to Lead

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Abstract

Although motivation to lead (MTL) was characterized as stable, recent research suggested otherwise. This study explored the malleability of MTL and its predictors. Individuals with high affective-identity MTL are motivated to lead because they enjoy leading. Individuals with high social normative MTL are motivated by an obligation to lead. Individuals with high noncalculative MTL are drawn to leadership because they avoid weighing the costs and benefits of leading. Applicants to a California college were sent a questionnaire on MTL and leadership self-efficacy (LSE) (Time 1 assessment, *N* = 2704). Four years later (Time 2), participants who responded at Time 1 were sent a survey on motivation to lead, leadership self-efficacy, college leadership experience, and leader identity (LID) (*N* = 96). Results showed that participants' affective-identity and noncalculative MTL have decreased over time. Leadership self-efficacy at Time 2 and leader identity at Time 2 were related to the changes in all 3 categories of MTL. Only specific college leadership experiences related to changes in affective-identity MTL. Lastly, leader identity at Time 2 mediated the relationship between affective-identity MTL at Time 1 and Time 2. Most high school students applied to college aspiring to be leaders, but only students who cultivate their leader identity should continue to be motivated to lead. Implications are discussed in the context of the construct validity of MTL, specifically for student leadership development in higher education.

Keywords: Motivation to Lead, Leadership Self-Efficacy, Leader Identity, Educational Leadership, Higher Education

Dynamic Motivation to Lead: Construct Validity of Motivation to Lead

Leadership is a complex phenomenon that is adaptable throughout various situations (Evans, 1970; House, 1971; House & Mitchell, 1974), groups of followers (Dansereau, Graen, & Haga, 1975; Hersey & Blanchard, 1969), and individual development (DeRue, Nahrgang, Hollenbeck, & Workman, 2012; Welch, Grossaint, Reid, & Walker, 2014). One important characteristic for leaders has been motivation (Chan & Drasgow, 2001). Motivation is the drive or determination an individual must have to achieve a goal. Chan and Drasgow (2001) developed a construct called motivation to lead (MTL), which describes an individual's motivation to become and succeed as a leader. Since its inception, past studies have categorized MTL as a stable characteristic (Chan & Drasgow, 2001; Reichard et al., 2011; Rosch, Collier, & Thompson, 2015; Van Iddekinge, Ferris, & Heffner, 2009). However, recent studies have shown that specific types of MTL are malleable over time (Bergner, Kanape, & Rybnicek, 2018; Waldman, Galvin & Walumbwa, 2013; Yeager & Callahan, 2016). Thus, the present study seeks to answer the questions: is motivation to lead malleable? And what are the predictors and outcomes of MTL's potential malleability?

Why is MTL's malleability an important topic for research? Leadership qualities are essential in today's society, from leading an organization to developing student leadership in higher education. However, many leaders have developed their skills and qualities over time. The best leaders take time to learn from each challenge to become better leaders in the future. However, this developmental process can be arduous, as leaders may find it difficult to face their shortcomings and improve upon their

weaknesses (Day & Sin, 2011; Miscenko, Guenter & Day, 2017). Only individuals who are motivated to lead successfully would situate themselves in roles where they can improve their leadership skills. Without motivation, people would not take on leadership challenges, which would result in organizations without proper management or educational institutions with a lack of student involvement. This study looked at whether the motivation to become a leader can be developed. If motivation to lead can change, then organizational leaders and higher education administrators can learn to motivate employees and students to seek out opportunities to develop their leadership skills.

Motivation and its Development

Motivation has been studied, defined, and applied differently in all areas of psychology (Murayama, 2018). The present study used the industrial-organizational definition of motivation because motivation to lead belongs in industrial-organizational psychology.

Even within industrial-organizational psychology, researchers applied different definitions of motivation. Some have said that motivation is a force that stimulates ongoing actions towards a specific goal (Bartol & Martin, 1998; Steers & Porter, 1991). Others believed that motivation is a force that stimulates voluntary actions, allowing individuals to make their own choices toward achieving their goals (Kreitner & Kinicki, 2004). All these definitions describe motivation as stimulating, channeling, and sustaining a specific behavior over a long period of time (Steers et al., 2004).

Motivation and Leadership. Most studies connected motivation to leadership by assessing with how leaders motivate their employees. Sekhar, Patwardhan, and Singh (2013) described many ways that an organization's leaders can motivate their employees, including designing monetary incentive systems (Beretti, Figuières & Grolleau, 2013; Park, 2010), developing training programs (Baldwin, Magjuka & Loher, 1991), providing promotional opportunities (García et al., 2012; Koch & Nafziger, 2012), and recognizing their employees' good work (Satyawadi & Ghosh, 2012). However, no applications revealed how employees were motivated to take on leadership roles themselves. There was limited research on what makes someone willing to lead until Chan and Drasgow (2001) proposed their Motivation to Lead Theory (Amit, Lisak, Popper & Gal, 2007).

Motivation to Lead

MTL was defined as a stable characteristic reflecting an individual's drive to become and succeed as a leader (Chan & Drasgow, 2001). There are three types of motivations that explain an individual's drive to lead.

Affective-Identity Motivation to Lead. Affective-identity MTL states that individuals are driven to become leaders because they enjoyed leading. This motivation is intrinsic. Intrinsic motivation is derived from enjoying the job (Amabile, Hill, Hennessey & Tighe, 1994). Affective-identity MTL is an intrinsic motivation because enjoyment comes from within and does not depend on context or environment.

Affective-identity MTL had roots in McClelland (1961, 1975)'s Motivation Theory, specifically, the need for achievement. Individuals who are high in need for achievement

enjoy the challenge of a task. Affective-identity MTL is similar to the need for achievement when applied to leadership. Individuals with high affective-identity MTL enjoy the challenge of leading.

Social-Normative Motivation to Lead. Social normative MTL is motivation derived from a sense of obligation or duty. Social normative MTL is an extrinsic motivator. Extrinsic motivation is driven by a force that is outside of the work itself, including pay or positive recognition (Amabile et al., 1994). Social normative MTL exemplifies extrinsic motivation because obligation or duty may vary depending on the situation or the leader's followers.

Social normative MTL had roots in the need for affiliation in McClelland (1961, 1975)'s Motivation Theory. Need for affiliation described people as wanting to be liked by others. These people enjoy collaborating with others and seek close relationships on the job. The need for affiliation relates to social normative MTL because they both involve others' influence. For some, social normative MTL has come from an obligation to avoid ruining relationships or to make people think highly of them.

Noncalculative Motivation to Lead. Noncalculative MTL describes an individual's motivation for leading as the ability to avoid weighing the costs and benefits of leading.

Noncalculative MTL stemmed from cognitive theories of motivation. Cognitive theories assume that people are rational and assess their personal costs and benefits before behaving. According to cognitive theories, peoples' goals are to maximize their benefits and minimize their costs. A cognitive theory called Equity Theory closely relates to noncalculative MTL. Equity Theory, spearheaded by Adams (1963, 1966), proposed

that employees wanted to be treated fairly. As such, workers would compare their inputs (e.g., education, energy, knowledge, and skills) and outcomes (e.g., pay, recognition, and interesting tasks) to their coworkers' inputs and outputs to determine if they were treated fairly. If they were not treated fairly, they adjusted accordingly.

Equity Theory related inversely to noncalculative MTL because Chan and Drasgow (2001) suggested that people who do not engage in cost-benefit analyses were more likely to lead. If people weighed the costs of leading, such as time, responsibilities, or reputation, to the benefits, such as awards or special privileges, then the costs would exceed the benefits. Costs are especially high when leaders do not receive appreciation for their leadership (Wilson, 2001). Thus, individuals who do not weigh the costs and benefits of leading are more likely to lead.

Present Study: Malleability of Motivation to Lead

Early motivation theorists have identified motivation as a trait (Amabile, 1993). However, recent studies looked at motivation as a state that can change over time due to acquired life experience, times of sustained action (such as learning a language), or changes in social contexts (Dörnyei & Ushioda, 2014). Others assumed that motivation was a process that can change over time (Hardcastle et al., 2015; Turner & Patrick, 2008; Wigfield, Gladstone & Turci, 2016). Additionally, organizational leaders employed several mechanisms to increase their employees' motivation (Sekhar et al., 2013).

Although MTL has been defined as a stable characteristic (Chan & Drasgow, 2001), previous research has shown that some aspects of MTL may be malleable. For instance, Bergner et al. (2018) showed that affective-identity MTL was developed as

individuals grew an interest in and succeeded in leadership roles. It would make sense that affective-identity MTL would change over time because individuals would not know if they enjoy leading when they are born. Individuals would learn whether or not they enjoy leading after being a leader. For this study, we assumed that affective-identity MTL should increase throughout a students' college career as they develop themselves as student leaders.

H1: Affective-identity motivation to lead increases over time

Social normative MTL has also been shown to change. For example, social normative MTL increased in a leadership course that focused on each students' obligation to lead (Waldman et al., 2013). Social normative MTL may be malleable over time if an individual's sense of leadership obligation changed. For this study, we assumed that social normative MTL should increase throughout a students' college career as they feel more obligated to lead.

H2: Social normative motivation to lead increases over time

There has been a lack of literature on noncalculative MTL's malleability. In Chan & Drasgow (2001)'s model, the level of noncalculative MTL was only predicted by the stable characteristics of personality traits and cultural values. Thus, in this model, noncalculative MTL should not change over time.

H3: Noncalculative motivation to lead does not change over time

According to Chan and Drasgow (2001), affective-identity MTL and social normative MTL were predicted by two malleable constructs: leadership self-efficacy and past leadership experience.

Leadership Self-Efficacy. As developed in social-cognitive theory, self-efficacy was defined as the belief in one's abilities, skills, and knowledge to take agency in a certain aspect of their life (Bandura, 1994). Self-efficacy was applied to leadership in a construct called leadership self-efficacy (LSE), which Hannah, Avolio, Luthans, and Harms (2008) defined as the belief in one's abilities, skills, and knowledge to succeed as a leader. Chan and Drasgow (2001) found that LSE predicted both affective-identity MTL and social normative MTL, but not noncalculative MTL. In addition, previous studies showed that LSE is malleable (Gist, & Mitchell, 1992) in several contexts, including structured leadership development programs for college students (Pyle, 2014), training counseling for students' group LSE (Midgett, Hausheer, & Doumas, 2016), mentoring (Chopin, Danish, Seers, & Hook, 2012), and transformational leadership development in adults (Fitzgerald & Schutte, 2010). This predictor supports the hypotheses that affective-identity MTL and social normative MTL are malleable.

In terms of direction, LSE would have a direct relationship with affective-identity MTL and social normative MTL, as shown by previous research (Chan & Drasgow, 2001; Cho, Harrist, Steele, & Murn, 2015; Joo, Yu, & Atwater, 2018). For affective-identity

MTL, if an individual believed that they were a great leader, they should be more motivated to take leadership roles and grow to enjoy it. For social normative MTL, individuals are more likely to give in to external pressures to assume leadership positions because they feel confident in their leadership abilities. In conclusion, both affective-identity MTL and social normative MTL should positively correlate to LSE.

H4: Changes in affective-identity motivation to lead are correlated to leadership self-efficacy such that affective-identity motivation to lead increases the most for individuals with high leadership self-efficacy

H5: Changes in social normative motivation to lead are correlated to leadership self-efficacy such that social normative motivation to lead increases the most for individuals with high leadership self-efficacy

Past Leadership Experience. Chan and Drasgow (2001) noted that past leadership experience predicted affective-identity MTL and social normative MTL, but not noncalculative MTL. As an individual gained leadership experience, they could have grown to enjoy leadership or reinforced their sense of duty to leadership. As individuals gain leadership experiences, affective-identity MTL and social normative MTL should increase.

H6: Changes in affective-identity motivation to lead are correlated with past leadership experience such that affective-identity motivation to lead increases the most for individuals with more past leadership experience

H7: Changes in social normative motivation to lead are correlated with past leadership experience such that social normative motivation to lead increases the most for individuals with more past leadership experience

Leader Identity. Many definitions of identity have been developed (Miscenko & Day, 2016). For the present study, identity was associated with a specific role (Stryker & Burke, 2000). Thus, leader identity (LID) was defined as the belief that one would call themselves a leader based on their leadership role(s). Miscenko et al. (2017) showed that LID was malleable over time. Komives, Owen, Longerbeam, Mainella, and Osteen (2005) addressed the malleability of LID in higher education by formulating the Leadership Identity Development Model, which explained that on the path to leadership identity development, students must expand their motivations and develop LSE to self-identify as leaders. Priest and Middleton (2016) noted that the relationship between LID and MTL is reciprocal: as an individual developed a leader identity, they were more motivated to be a leader and inspired themselves to pursue leadership roles, which reinforced their LID. For the purposes of this study, I hypothesized that affective-identity MTL at Time 2 would predict individuals' LID at Time 2. Furthermore, more recent affective-identity MTL should predict an individual's level of LID over and above an individual's affective-identity MTL in the past, especially if affective-identity MTL

changes between the two time points. Affective-identity MTL from earlier in life should predict LID later in life. The cyclical relationship between MTL and LID could lead to infer that affective-identity MTL can predict individuals' future LID.

H8: affective-identity motivation to lead at Time 2 predicts leader identity at Time 2 over and above affective-identity motivation to lead at Time 1

Malleable Motivation to Lead Model

The models in Figures 1, 2, and 3 depict how each constructs' relationships were hypothesized between two time points, Time 1 and Time 2. All three categories of MTL at the first time point should predict MTL at the second time point. Past leadership experience and LSE should explain some, but not all, of the relationship between MTL at Time 1 and Time 2. If individuals grew their confidence and experiences in leadership, they were more likely to reinforce and increase their motivation to become a leader. Thus, all solid lines in Figures 1, 2, and 3 should be significantly positive, and all dashed lines should not be significant.

Method

Participants

Participants were recruited upon submission of their application to a southern California college at Time 1. Most participants at Time 1 were 4th year high school students. Out of 6,412 invited participants, 2,704 completed the surveys at Time 1 for a response rate of 42%. The gender breakdown was 58.9% female, 40.9% male, and 0.2%

did not identify as either male or female. Demographics revealed that 54.3% of participants identified as White, 42.0% of participants identified as Asian, 12.0% of participants identified as Hispanic or Latino, 5.5% of participants identified as Black or African American, and 2.9% of participants identified as other. Some participants identified as more than one ethnicity.

For Time 2, all participants who completed the study at Time 1 were invited to participate in the Time 2 survey using the email they provided at Time 1. Participants who chose to attend this southern California college were sent the Time 2 survey via their school email, as participants may no longer use their previous email address. At Time 2, 146 participants completed the survey, resulting in a 5.4% retention rate. A total of 50 participants were dropped because they either did not entirely complete the Time 2 survey or did not participate in the Time 1 survey. The final number of participants was $N = 96$, consisting of participants who filled out both Time 1 and Time 2 surveys completely, which is above the necessary power of 70 participants.

The final sample of students consisted of 60.4% females and 39.6% males. The racial background shows that 55.3% identified as White, 39.6% identified as Asian, 13.7% of participants identified as Hispanic or Latino, and 5.2% identifying as other races. In the final sample, only 11.5% of participants attended the southern California college that they applied to at Time 1.

Design

The present study tested a predictor model over two time periods, Time 1 and Time 2. Time 1 was collected in January 2015, when participants were applying to

colleges. They were administered several surveys to measure various leadership competencies. Time 2 was collected 4 years later in January 2019, when participants were expected to complete their 4th year of college or university.

The predictor variables measured at Time 1 were motivation to lead at leadership self-efficacy. Predictor variables collected at Time 2 included leadership self-efficacy and college leadership experience. MTL at Time 2 was the outcome of all Time 1 variables and all Time 2 predictor variables. Additionally, affective-identity MTL at Time 2 was a predictor for leader identity at Time 2.

Procedure

Data were obtained from an ongoing leadership assessment at this California college. At Time 1, participants were sent a battery of leadership scales via email. Each scale was presented on Qualtrics in the following order: demographic information, Leadership Self-Efficacy Scale (Murphy, 1992), and Motivation to Lead Scale (Chan & Drasgow, 2001). Other collected measures included the Leadership Resume, Developmental Self-Efficacy, Goal Orientation Scale, Leadership Knowledge Test, Social Skills Inventory, and Multidimensional Cultural Intelligence Scale, which were not analyzed. Items within each scale were randomized. Upon completion of the survey, each student's email was coded into a participant ID number for reference during Time 2.

At Time 2, participants filled out the following scales in order: Leadership Self-Efficacy Scale (Murphy, 1992), Motivation to Lead Scale (Chan & Drasgow, 2001), Leadership Resume, and Leader Self-Identity Scale (Hiller, 2005). Additional surveys at

Time 2 included Social Skills Inventory, Developmental Self-Efficacy, Sense of Belonging, Goal Orientation Scale, Leadership Information, Leadership Knowledge Test, Leadership Development Activities, Implicit Leadership Theories, Leader Self-Awareness, Civic Engagement, Satisfaction with Life Scale, Grit, Basic Empathy Scale, and Social Desirability Scale - 17, which were not analyzed. Items within each scale were randomized. Upon completion, the datasets were merged based on the participants' email and ID number.

Measures. At Time 1, participants answered questions on their leadership self-efficacy and motivation to lead.

Leadership Self-Efficacy. LSE describes how a leader's belief in their abilities to lead affects their leadership performance (Murphy, 1992). Murphy (1992) developed an 8-item scale to measure LSE. This survey had undergone several reliability tests with results ranging from .75 to .86. An example item was, "I am confident of my ability to influence a work group that I lead." The full scale is available in Appendix A. Responses ranged from 1 *(Disagree Strongly)* to 5 *(Agree Strongly)*. A scale score was calculated by averaging the responses to each item.

Motivation to Lead. Motivation to Lead Scale was created by Chan and Drasgow (2001). The three components of MTL were measured on a 27-item Likert scale, nine items per component. Cronbach's alphas from the original study ranged from .65 to .91 for all three components. An example item for affective-identity MTL was, "Most of the time, I prefer being a leader rather than a follower when working in a group." An example item for social normative MTL was, "I agree to lead whenever I am asked or

nominated by the other members." An example item for noncalculative MTL was, "I would agree to lead others even if there are no special rewards or benefits with that role." Eleven items were reverse coded. The full scale is in Appendix B. Responses were measured on a scale of 1 *(Disagree Strongly)* to 5 *(Agree Strongly)*. Composite scores were calculated for each of the three components by averaging each of the 9 items within each component after reverse coding.

At Time 2, participants answered questions on their leadership self-efficacy, motivation to lead, college leadership experiences, and leader identity.

Leadership Self-Efficacy. This scale was the same Leadership Self-Efficacy Scale used at Time 1, which is provided in Appendix A.

Motivation to Lead. This scale was the same Motivation to Lead Scale used at Time 1, which is provided in Appendix B.

Leadership Resume. The Leadership Resume measured the participants' engagement with leadership activities both outside of and within their workplaces, which was modified to be applicable for college students. This scale measured college leadership experiences. This scale had two sections, the first being the most relevant. The first section contained 20 items where participants indicated the number of leadership positions they held within a certain setting throughout their college years (e.g., "Church/Religious Service: Leader"). This section was scored based on the sum of leadership positions held. The second part had five items that asked participants how many hours they spent on specified activities. A sample item from the second part was, "Please indicate how many hours (on average) per week you participated in the

following activities: High School Activities?" I did not analyze this section because there was not a way to determine whether the number of hours per activity was spent being a leader versus other roles (e.g., volunteer, founder, or member). The full scale is available In Appendix C.

Leader Self-Identity. The Leader Self-Identity Scale is a 4-item scale developed by Hiller (2005) that assessed to what degree the participant labeled themselves as a leader, which measured leader identity. Day & Sin (2011) showed that this scale is reliable with Cronbach's alphas ranging from .80 - .86. An example item was, "I am a leader." Responses were collected on a Likert scale ranging from 1 *(Not At All Descriptive)* to 5 *(Extremely Descriptive)*. The scale score was calculated by averaging the responses of each item. The full scale is in Appendix D.

Results

Primary Analyses

First, scale scores for leadership self-efficacy, motivation to lead, leader identity, and leadership experiences were created for both time points. For leadership experiences, many of the participants' responses demonstrated missing data, either meaning that participants did not reach that section of the survey or they had no leadership experiences. Additionally, there was one outlier that responded with 23 total leadership positions, which was more than two standard deviations away from the mean, thus it was removed, resulting in an $n = 51$ for this measure. A reliability test was conducted for each scale. Descriptive statistics and Cronbach's alphas for these variables can be found in Table 1. Next, the differences in MTL between Time 1 and

Time 2 were calculated to create three new variables for affective-identity MTL differences, social normative MTL differences, and noncalculative MTL differences, for each participant. The difference variables' descriptive statistics can also be found in Table 1.

Correlations. Six correlations were calculated to determine the relationship between the change in MTL over time and two predictor variables from Time 2: leader self-efficacy and college leadership experiences. Changes in MTL were calculated by creating a new variable with the differences between MTL at Time 1 and MTL at Time 2. Results showed that LSE at Time 2 was positively correlated with affective-identity MTL differences, $r = .50$, $p < .001$, social normative MTL differences, $r = .49$, $p < .001$, and noncalculative MTL differences, $r = .37$, $p < .001$. Individuals with higher levels of leadership self-efficacy experienced the largest increases in MTL. Figures 4, 5, and 6 display these correlations.

These correlations' results were confirmed with regressions. First, the regression of affective-identity MTL at Time 1 and Time 2 predicting LSE at Time 2 was tested. Affective-identity MTL at Time 1 served as a control for affective identity MTL at Time 2. Results indicated that the two predictors explained 40.3% of the variance ($R^2 = .40$, $F(2, 93) = 31.39$, $p < .001$). Results were significant for affective-identity MTL at Time 2 ($\beta = .57$, $p < .001$) and not for affective identity MTL at Time 1 ($\beta = -.07$, $p = .45$). Next, the regression of social normative MTL at Time 1 and Time 2 predicting LSE at Time 2 was tested, where social normative MTL at Time 1 controlling for social normative MTL at Time 2. Results indicated the two predictors explained 33.4% of the variance ($R^2 = .33$,

F(2, 93) = 23.36, *p* < .001). There were significant results for social normative MTL at Time 2 (β = .83, *p* < .001) and not for social normative MTL at Time 1 (β = -.23, *p* = .07). Lastly, the regression of noncalculative MTL at Time 1 and Time 2 predicting LSE at Time 2 was tested, where noncalculative MTL at Time 1 was a control variable. Results indicated that the two predictors explained 21.4% of the variance (R^2 = .21, *F*(2, 93) = 12.68, *p* < .001). Results were significant for noncalculative MTL at Time 2 (β = .45, *p* < .001) and not for noncalculative MTL at Time 1 (β = -.07, *p* = .50). These regressions confirm the results of the previous correlation analyses.

Next, there was no significance for correlations between leadership experiences at Time 2 and affective-identity MTL differences, *r* = .16, *p* = .25, social normative MTL differences, *r* = .07, *p* = .63, and noncalculative MTL differences, *r* = .11, *p* = .42, showing that the number of college leadership experiences was not related to changes in any type of MTL. These results were confirmed with regressions. Firstly, the regression of affective-identity MTL at Time 1 (β = -.03, *p* = .98) and Time 2 (β = .93, *p* = .17) showed no significance in predicting leadership experiences. Secondly, the regression of social normative MTL at Time 1 (β = .43, *p* = .70) and Time 2 (β = 1.22, *p* = .27) also showed no significance in predicting leadership experiences. Lastly, the regression of noncalculative MTL at Time 1 (β = -1.43, *p* = .17) and Time 2 (β = .17, *p* = .82) showed no significance in predicting leadership experiences.

Additional correlations were conducted to test the assumptions necessary to compute the structural equation model for the MTL malleability model depicted in Figures 1, 2, and 3. Tables 2, 3, and 4 include correlation coefficients for each MTL

category and leadership self-efficacy, leader identity, and college leadership experiences. According to these correlations, a structural equation model would be inappropriate to compute because several correlations were not significant, such as social normative MTL at Time 1 and social normative MTL at Time 2, $r = .13$, $p = .20$, noncalculative MTL at Time 1 and noncalculative MTL at Time 2, $r = .15$, $p = .15$, and affective-identity MTL at Time 1 and LSE at Time 2, $r = .10$, $p = .47$.

Secondary Exploratory Analyses

The following analyses were completed post hoc to propose an exploratory model that best fit the data.

Paired-samples *t*-test. First, a paired-samples *t*-test was conducted to test if there was a difference in each MTL component between Time 1 and Time 2. Results showed that the trend of all three types of MTL decreased over time. Affective-identity MTL decreased the most demonstrating that affective-identity MTL at Time 1 ($M = 3.78$, $SD = .61$) was significantly higher than affective-identity MTL at Time 2 ($M = 3.47$, $SD = .77$), $t(95) = -3.41$, $p < .001$. The second most significant difference was between noncalculative MTL at Time 1 ($M = 3.95$, $SD = .59$) and noncalculative MTL at Time 2 ($M = 3.78$, $SD = .70$), $t(95) = -2.00$, $p = .05$. Social normative MTL decreased nonsignificantly such that social normative MTL at Time 1 ($M = 3.70$, $SD = .45$) was not significantly higher than social normative MTL at Time 2 ($M = 3.60$, $SD = .47$), $t(95) = -1.64$, $p = .10$. Overall, between the fourth year of high school and fourth year of college, MTL generally decreased. These findings are displayed in Table 5.

Correlations. Next, the correlation between each MTL difference and leader identity at Time 2 was conducted, testing whether the level of leader identity could be related to how MTL changes over time. Results showed that LID at Time 2 was positively correlated to affective-identity MTL differences, $r = .55$, $p < .001$, social normative MTL differences, $r = .49$, $p < .001$, and noncalculative MTL differences, $r = .23$, $p = .03$. Individuals with higher LID at the end of college have the greatest increase in MTL. These significant correlations are graphed in Figures 7, 8, and 9.

These results were confirmed using regression analyses. First, the regression of affective-identity MTL at Time 1 and Time 2 predicting LID at Time 2 was tested with affective-identity MTL at Time 1 as a control. Results indicated the two predictors explained 68.3% of the variance ($R^2 = .68$, $F(2, 93) = 100.155$, $p < .001$). It was found that affective-identity at Time 2 significantly predicted LID at Time 2 ($\beta = 1.06$, $p < .001$) while affective-identity MTL at Time 1 ($\beta = .12$, $p = .23$) was not significant. Second, the regression of social normative MTL at Time 1 and Time 2 predicting LID at Time 2 was tested with social normative MTL at Time 1 as a control. Results indicated the two predictors explained 25.6% of the variance ($R^2 = .26$, $F(2, 93) = 16.00$, $p < .001$). It was found that social normative MTL at Time 2 ($\beta = 1.10$, $p < .001$) was a significant predictor while social normative MTL at Time 1 ($\beta = -.09$, $p = .65$) was not significant. The last regression was for noncalculative MTL at Time 1 and Time 2 predicting LID at Time 2, with noncalculative MTL at Time 1 as a control. Results indicated the two predictors explained 7.3% of the variance ($R^2 = .07$, $F(2, 93) = 3.65$, $p = .03$). It was found that

noncalculative MTL at Time 2 (β = .395, $p < .001$) was a significant predictor while noncalculative MTL at Time 1 (β = -.09, $p = .59$) was not significant.

Next, correlations were calculated between each MTL difference and the seven subcategories of leadership experiences separately, which are presented in Table 6. The only significant correlation was affective-identity MTL differences and on-campus clubs and organizations leadership experiences. Individuals who were in more leadership positions within on-campus clubs and organizations had more positive changes in their affective-identity MTL over their college years. This significant correlation is graphed in Figure 10. All other correlations were not significant. These results were confirmed with regressions. The only significant regression was in affective-identity MTL at Time 1 and Time 2 predicting leadership positions for on-campus clubs and organizations with affective-identity MTL at Time 1 as a control variable. Results indicated the two predictors explained 12.3% of the variance ($R^2 = .12$, $F(2, 93) = 3.43$, $p = .04$). Affective-identity MTL at Time 2 (β = .42, $p = .02$) was a significant predictor of on-campus clubs and organizations leadership experience while affective-identity MTL at Time 1 (β = -.42, $p = .12$) was not significant. Other regressions testing for MTL's relationship to each subsection of leadership experiences were not significant. Tables 7, 8, and 9 includes these results.

Structural Equation Model. Next, two models were tested using path analysis with observed variables. The maximum likelihood method was used to estimate parameters. All analyses were performed on the correlation matrix. Model 1 was a simple mediation effect where LID at Time 2 mediated the relationship between

affective-identity MTL at Time 1 and affective-identity MTL at Time 2. Model 2 built on Model 1 by adding LSE at Time 1 and LSE at Time 2 as predictors of affective-identity MTL at Time 1 and affective-identity MTL at Time 2 respectively. Model 1 can be found in Figure 11 and Model 2 can be found in Figure 12. Figures 11 and 12 show the structural equation model outputs for each model, including path coefficients. Table 9 presents goodness-of-fit indices obtained from the path analysis for both models. Table 9 shows that out of the two models, Model 1 displayed an acceptable fit to the data because it displayed a model chi-square statistic that was nonsignificant, $\chi^2(2, N = 96) = .04$, $p = .89$. Model 2 was rejected as a good fit because it had a significant chi-squared statistic, $\chi^2(2, N = 96) = 52.03$, $p < .001$. It has been recommended that a model be viewed as displaying an acceptable fit if the SRMR is less than or equal to .08, the RMSEA is less than or equal to .06, and the CFI and TLI are greater than or equal to .95 (e.g., Hu & Bentler, 1999; Mueller & Hancock, 2008). Again, Table 10 shows that only Model 1 satisfied these criteria, suggesting that LID at Time 2 fully mediated the relationship between affective-identity MTL at Time 1 and affective-identity MTL at Time 2 without LSE. However, the indices could be problematic, as they are too close to perfect. Thus additional statistics were necessary to further investigate the mediation effect.

Mediation Analysis. Three linear regressions tested the full mediation effect of leader identity at Time 2 between affective-identity MTL Time 1 and affective-identity MTL at Time 2 (Baron & Kenny, 1986; Judd & Kenny, 1981; James & Brett, 1984). First, the regression of whether affective-identity MTL at Time 1 predicted affective-identity

MTL at Time 2 was tested. The results of the regression indicated the predictor explained 4.5% of the variance (R^2 = .05, F(1, 94) = 4.39, p = .04). It was found that affective-identity MTL at Time 1 significantly predicted affective-identity MTL at Time 2 (β = .26, p = .04). Next, the regression of affective-identity MTL at Time 1 predicting LID at Time 2 was tested. Results showed that the predictor explained 5.9% of the variance (R^2 = .06, F(1, 94) = 5.93, p = .02). It was found that affective-identity MTL at Time 1 significantly predicted LID Time 2 (β = .40, p = .02). Lastly, the regression of affective-identity MTL at Time 1 and LID at Time 2 predicting affective-identity MTL at Time 2 was tested. The results of the regression indicated that the predictors explained 67.8% of the variance (R^2 = .68, F(2, 93) = 97.9, p < .001). It was found that while LID at Time 2 significantly predicted affective-identity MTL at Time 2 (β = .62, p < .001), affective-identity MTL at Time 1 no longer significantly predicted affective-identity MTL at Time 2 (β = .01, p = .85), suggesting that LID at Time 2 fully mediated affective-identity MTL at Time 1 and affective-identity MTL at Time 2.

Discussion

This study looked at whether motivation to lead changes over four years of college and motivation to lead's changes' predictors. The results showed that both affective-identity MTL and noncalculative MTL significantly decreased over time, while social normative MTL did not. Thus, this study supported the hypothesis that affective-identity MTL changes over time. However, social normative MTL's stability and noncalculative MTL's malleability was surprising because it did not support the hypotheses. For social normative MTL, the trend of the data seemed to follow the other

two MTL categories. However, the reliability test for both social normative MTL at Time 1 and Time 2 were subpar, which may contribute to the nonsignificance of social normative MTL's change. The change in noncalculative MTL was surprising because previous literature did not supported it. It could be possible that college taught its students to be more analytically-minded, thus students would be more likely to weigh the costs and benefits of their leadership opportunities. Additionally, as college students were presented with more opportunities for leadership, their time could have been strained, resulting in them weighing the costs and benefits more closely over their four college years.

Additionally, the decrease in MTL explained that high school MTL was significantly higher than college MTL. It could be the case that most high school students applying to colleges were motivated to become leaders because they were active in their high school either for their own fulfillment or to look good for college admission officers. However, when they arrived at college, they no longer felt motivated to lead because they compared themselves to other students or realized other passions outside of leadership.

Next, all subcategories of MTL were correlated with leadership self-efficacy such that higher levels of LSE were correlated with larger increases in MTL. Participants who believed in their leadership abilities and skills showed the greatest increase in all MTL categories, which was consistent with past research by Chan and Drasgow (2001) with the exception of noncalculative MTL. This finding aligns with the hypotheses, with the included significance for noncalculative MTL. Students with a high belief in their

leadership abilities could have learned to avoid weighing the cost and benefits of leading throughout their college experience, thus increasing noncalculative MTL.

The only significant relationship with past leadership experience was found between affective-identity MTL and on-campus clubs and organizations leadership experiences such that students who had greater numbers of on-campus clubs and organizations leadership positions had the greatest increases in affective-identity MTL over their college years. It could be the case that students volunteered to be involved in clubs and organizations, as there was usually no compensation for their work in on-campus clubs and organizations. Thus, the students that got involved in on-campus clubs and organizations enjoyed leading those communities, indicating affective-identity MTL. As a result, students who had more leadership roles in clubs and organizations on-campus were more likely to increase their affective-identity MTL over time.

The predicted models displayed in Figures 1, 2, and 3 could not be tested because several necessary correlations were not significant. This analysis was surprising because there was no significant relationship between social normative MTL and noncalculative MTL over the two time points, even though each was measured on the same scale. Over their four years of college, the samples' MTL changed enough for it to no longer be related to their high school MTL.

Leader identity was analyzed in post hoc analyses. Firstly, individuals who had high levels of LID increased their MTL the most. For participants who identified themselves as leaders showed the greatest increase in their motivation to become

leaders for all types of motivation. So, people who call themselves leaders are more driven to lead.

The last finding was LID's mediation effect between affective-identity MTL at Time 1 and Time 2. Seniors in high school want to become leaders when they go to college. However, only students who embrace their LID continue to be motivated to lead through their enjoyment of leading throughout college.

Overall, the results from the present study indicate that motivation to lead is indeed malleable to a certain extent. This finding puts into question MTL's construct validity, as it has been regarded as a stable characteristic (Chan & Drasgow, 2001; Reichard et al., 2011; Rosch et al., 2015; Van Iddekinge et al., 2009). Additional research should be done to further understand MTL's malleability. This study presented a look into potential factors that contribute to MTL's malleability, especially leader identity's mediation effect.

Implications were most apparent for higher education administrators seeing that most students' motivation to become leaders drop over their four years of college. This finding is important because if students are not motivated to become leaders, they do not take on leadership roles and limit their opportunities to develop their leadership skills. Today, many firms and organizations hire for leadership skills in potential entry-level hires. For higher education institutions who seek to develop their students' leadership skills, administrators should learn how to foster their students' motivation to lead. To have the greatest development in motivation to lead, higher education administrators should focus on the relationship between affective-identity motivation to

lead and leader identity. If higher education administrators can foster their students' leader identity, their students should keep being intrinsically motivated to lead.

Limitations

This study has a few limitations. The first was the small sample size as a result of attrition. Although the first round of data collection received a large number of participants, many participants did not fill out the second survey. Although it is difficult to retain participants for studies that occur over multiple time points, the retention rate in this study seemed particularly low, which could result in potential problems with sufficient power or a selection bias.

Additionally, social normative MTL's Cronbach's alphas at both Time 1 and Time 2 were poor, revealing potential unreliability with the social normative MTL scale. This could have resulted in social normative MTL's nonsignificant change over time compared to affective-identity MTL and noncalculative MTL.

Another limitation was how leadership experiences were measured. More than half the participants for the Leadership Resume survey recorded missing data. Some individuals may have skipped the question. Some participants may not have any leadership experiences, yet did not record a zero for number of leadership positions. Missing data could have been recorded because of how the question was presented on Qualtrics. However, when all the missing data were converted to zero, the data were skewed, as over half the participants would have a minimum of zero leadership positions. As a result, we had only 51 useable observations for leadership experiences, none of which were zero leadership positions. Additionally, the scale for leadership

experiences was flawed. Instead of a Likert scale, leadership experiences were calculated as a sum of all college leadership positions, making it statistically difficult to compare leadership experience to motivation to lead, leadership self-efficacy, and leader identity.

Next, this study included only two time points, thus did not have a true longitudinal design. The results could only reveal linear changes in MTL. The changes in MTL could be more complex than just positive, negative, or null. Although the ongoing leadership assessment collected data at different time points, there were not enough participants who completed measures at more than two time points to have sufficient power.

The last limitation was methodological. The first survey was sent out to applicants just after they applied to college, but before they heard their admissions decision. As a result, participants may have wanted to appear like good leaders to be admitted into their top schools, regardless of actual leadership potential. Thus, the first survey's scores may have been inflated. Future studies should be aware of this caveat.

Future Directions

This study only generalized to college students. Future research could test this model in other settings, such as high potential leaders in corporate settings or high school students in leadership development programs. These populations may reveal different ways that MTL could develop based on varying time horizons, job responsibilities, and stages in adolescent or adult development.

Another population to test could be individuals attending colleges outside of the United States. Different populations could reveal a difference in their motivation to lead due to varying attitudes or cultural norms surrounding leadership in higher education.

The current study also does not incorporate a true longitudinal design, as it included only two time points. Expanding to three time points may reveal nonlinear changes in MTL. Possible third time points include two years after graduation or sometime in between senior year of high school and senior year of college.

This study also focused on only three mediators. Other mediators could have been tested. For example, if students broaden their leadership knowledge throughout college, they could recognize some of their characteristics as leadership qualities that they did not realize before college. Another example could be developmental self-efficacy. Students may be more motivated to take on leadership roles if they believe in their ability to develop their skills, particularly leadership skills. Goal orientation also could have been a mediator, such that students with a learning goal orientation would experience different changes in their motivation than students with a performance goal orientation.

Lastly, this study utilized only quantitative data. Along with quantitative data, qualitative data could have provided a deeper analysis into why the observed changes in MTL existed. Selecting a handful of participants randomly from the sample to conduct an interview could have also shown more directions for mediators and moderators to test in future research.

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Table 1

Descriptive Statistics and Reliability Analyses for Measured Variables

Measure	Minimum	Maximum	Mean	Standard Deviation	Cronbach's Alpha
LSE T1	2.50	5.00	3.93	0.49	0.82
LSE T2	1.25	5.00	3.72	0.67	0.90
AI-MTL T1	1.89	5.00	3.78	0.61	0.85
AI-MTL T2	1.33	5.00	3.47	0.77	0.91
SN-MTL T1	2.50	4.78	3.70	0.45	0.65
SN-MTL T2	2.33	4.78	3.60	0.47	0.68
NC-MTL T1	2.33	5.00	3.95	0.59	0.83
NC-MTL T2	1.56	5.00	3.78	0.70	0.84
LID T2	1.00	5.00	3.09	1.01	0.90
Leadership Experiences T2[a]	2	12	6.92	3.12	-
AI-MTL Diff	-2.89	1.78	-0.31	0.88	-
SN-MTL Diff	-2.00	1.67	-0.10	0.61	-
NC-MTL Diff	-2.89	1.50	-0.17	0.84	-

Note. LSE T1 = leadership self-efficacy at Time 1, LSE T2 = leadership self-efficacy at Time 2, AI-MTL T1 = affective-identity motivation to lead at Time 1, AI-MTL T2 = affective-identity motivation to lead at Time 2, SN-MTL T1 = social normative motivation to lead at Time 1, SN-MTL T2 = social normative motivation to lead at Time 2, NC-MTL T1 = noncalculative motivation to lead at Time 1, NC-MTL T2 = noncalculative motivation to lead at Time 2, LID T2 = leader identity at Time 2, AI-MTL = affective-identity motivation to lead, SN-MTL = social normative motivation to lead, NC-MTL = noncalculative motivation to lead.

[a] $n = 51$.

Table 2

Correlations for Affective-Identity Motivation to Lead and Measured Mediators

Measure	1	2	3	4	5	6
AI-MTL T1	-					
AI-MTL T2	0.21*	-				
LSE T1	0.51**	0.10	-			
LSE T2	0.08	0.63**	0.09	-		
LID T2	0.24*	0.82**	0.13	0.64**	-	
Leadership Experiences T2	0.06	0.20	0.04	0.12	0.21	-

Note. AI-MTL T1 = affective-identity motivation to lead at Time 1, AI-MTL T2 = affective-identity motivation to lead at Time 2, LSE T1 = leadership self-efficacy at Time 1, LSE T2 = leadership self-efficacy at Time 2, LID T2 = leader identity at Time 2, ** $p < .01$, * $p < .05$.

Table 3

Correlations for Social Normative Motivation to Lead and Measured Mediators

Measure	1	2	3	4	5	6
SN-MTL T1	-					
SN-MTL T2	0.13	-				
LSE T1	0.33**	0.32**	-			
LSE T2	-0.08	0.56**	0.09	-		
LID T2	0.03	0.50**	0.13	0.64**	-	
Leadership Experiences T2	0.07	0.16	0.04	0.12	0.21	-

Note. SN-MTL T1 = social normative motivation to lead at Time 1, SN-MTL T2 = social normative motivation to lead at Time 2, LSE T1 = leadership self-efficacy at Time 1, LSE T2 = leadership self-efficacy at Time 2, LID T2 = leader identity at Time 2, ** $p < .01$.

Table 4

Correlations for Noncalculative Motivation to Lead and Measured Mediators

Measure	1	2	3	4	5	6
NC-MTL T1	-					
NC-MTL T2	0.15	-				
LSE T1	0.35**	0.00	-			
LSE T2	0.01	0.46**	0.09	-		
LID T2	-0.01	0.26**	0.13	0.64**	-	
Leadership Experiences T2	-0.19	-0.01	0.04	0.12	0.21	-

Note. NC-MTL T1 = noncalculative motivation to lead at Time 1, NC-MTL T2 = noncalculative motivation to lead at Time 2, LSE T1 = leadership self-efficacy at Time 1, LSE T2 = leadership self-efficacy at Time 2, LID T2 = leader identity at Time 2, ** $p < .01$.

Table 5

Contrast of Time 1 With Time 2 For Each Component of Motivation to Lead

	Time 1		Time 2				95% CI	
Variable	*M*	*SD*	*M*	*SD*	*t*(95)	*p*	*LL*	*UL*
AI-MTL	3.78	.61	3.47	.77	-3.41	.00	.13	.48
SN-MTL	3.70	.45	3.60	.47	-1.64	.10	-.02	.22
NC-MTL	3.95	.59	3.78	.70	-2.00	.05	.00	.34

Note. AI-MTL = affective-identity motivation to lead, SN-MTL = social normative motivation to lead, NC-MTL = noncalculative motivation to lead, CI = confidence interval, LL = lower limit, UL = upper limit.

Table 6

Correlations for Motivation to Lead Differences and Leadership Experiences Subcategories

Leadership Experience Subcategories	Affective-Identity MTL Differences	Noncalculative MTL Differences	Social Normative MTL Differences
Church/Religious Service	-.02	-0.00	-0.14
Community Service	-.09	.11	-.16
Employment	.06	.11	.05
Internship	.07	-.15	.03
Sports Team	.00	-.01	-.16
Club/Organization (On-campus)	.33*	-.28	-.01
Club/Organization (On-campus)	-.13	.01	-.15

Note. MTL = motivation to lead, * $p < .05$.

Table 7

Regressions of Affective-Identity Motivation to Lead Predicting Each Subcategory of Leadership Experiences

	Subcategory of Leadership Experience						
Predictors	Church/ Religious Service	Community Service	Employment	Internship	Sports Team	Club/Org (On-Campus)	Club/Org (Off-Campus)
AI-MTL T1	.10	.20	-.04	-.05	.12	-.42	.07
AI-MTL T2	.11	.13	.17	.09	.11	.42*	-.10
R^2	.03	.04	.01	.01	.03	.12	.03
F-test	.76	.90	.31	.29	.80	3.43	.64

Note. AI-MTL T1 = affective-identity motivation to lead at Time 1, AI-MTL T2 = affective-identity motivation to lead at Time 2, * $p < .05$.

Table 8

Regressions of Social Normative Motivation to Lead Predicting Each Subcategory of Leadership Experiences

	Subcategory of Leadership Experience						
Predictors	Church/ Religious Service	Community Service	Employment	Internship	Sports Team	Club/Org (On-Campus)	Club/Org (Off-Campus)
SN-MTL T1	.06	.09	-.11	-.03	.24	.15	.03
SN-MTL T2	.18	.33	.32	.16	.18	.31	-.26
R^2	.02	.03	.02	.01	.05	.03	.06
F-test	.46	.83	.46	.33	1.23	.72	1.56

Note. SN-MTL T1 = social normative motivation to lead at Time 1, SN-MTL T2 = social normative motivation to lead at Time 2.

Table 9

Regressions of Noncalculative Motivation to Lead Predicting Each Subcategory of Leadership Experiences

	Subcategory of Leadership Experience						
Predictors	Church/ Religious Service	Community Service	Employment	Internship	Sports Team	Club/Org (On-Campus)	Club/Org (Off-Campus)
NC-MTL T1	-.35	-.53*	-.48	-.19	-.29	.67*	-.27*
NC-MTL T2	.08	.25	.20	-.16	.02	-.08	-.14
R^2	.06	.10	.05	.06	.04	.11	.15
F-test	1.68	2.65	1.24	1.67	1.14	3.13	4.19*

Note. NC-MTL T1 = noncalculative motivation to lead at Time 1, NC-MTL T2 = noncalculative motivation to lead at Time 2, * $p < .05$.

Table 10

Structural Equation Model Indices for Model 1 and Model 2

	Model χ^2							
Model	χ^2	*df*	*p*	χ^2/df	SRMR	RMSEA	CFI	TLI
Model 1	0.036	2	0.849	0.18	0.004	0.000	1.000	1.026
Model 2	52.031	4	0.000	13.00	0.206	0.313	0.755	0.560

Note. N = 96, SRMR = standardized root-mean square residual; RMSEA = root-mean-square error of approximation, CFI = comparative fit index, TLI = tucker-lewis index. Model 1 is the simple mediation model in Figure 11. Model 2 is the complex model displayed in Figure 12.

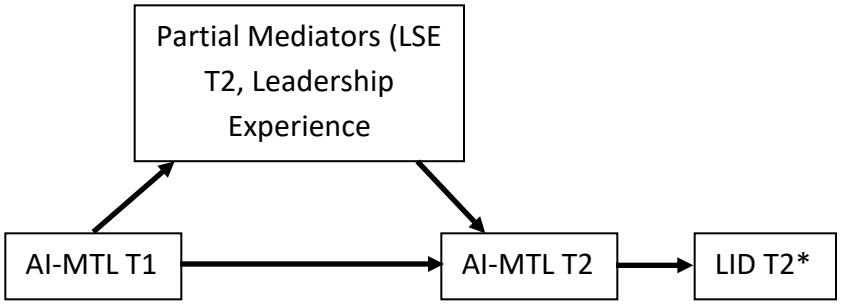

Figure 1. Hypothesized significant pathways. Solid lines are predicted to be significant. AI-MTL T1 = affective-identity motivation to lead at Time 1. AI-MTL T2 = affective-identity motivation to lead at Time 2. LSE T2 = leadership self-efficacy at Time 2. LID T2 = leader identity at Time 2. * Effect controls for affective-identity motivation to lead at Time 1.

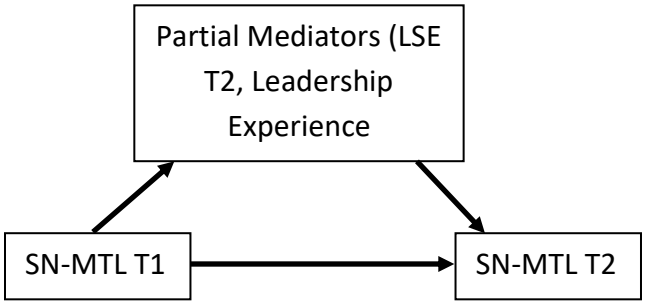

Figure 2. Hypothesized significant pathways. Solid lines are predicted to be significant. SN-MTL T1 = social normative motivation to lead at Time 1. LSE T2 = leadership self-efficacy at Time 2. SN-MTL T2 = social normative motivation to lead at Time 2.

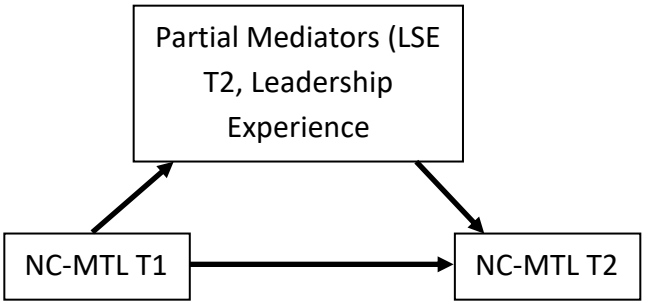

Figure 3. Hypothesized significant pathways. Solid lines are predicted to be significant. Dashed lines are predicted to be nonsignificant. NC-MTL T1 = noncalculative motivation to lead at Time 1. LSE T2 = leadership self-efficacy at Time 2. NC-MTL T2 = noncalculative motivation to lead at Time 2.

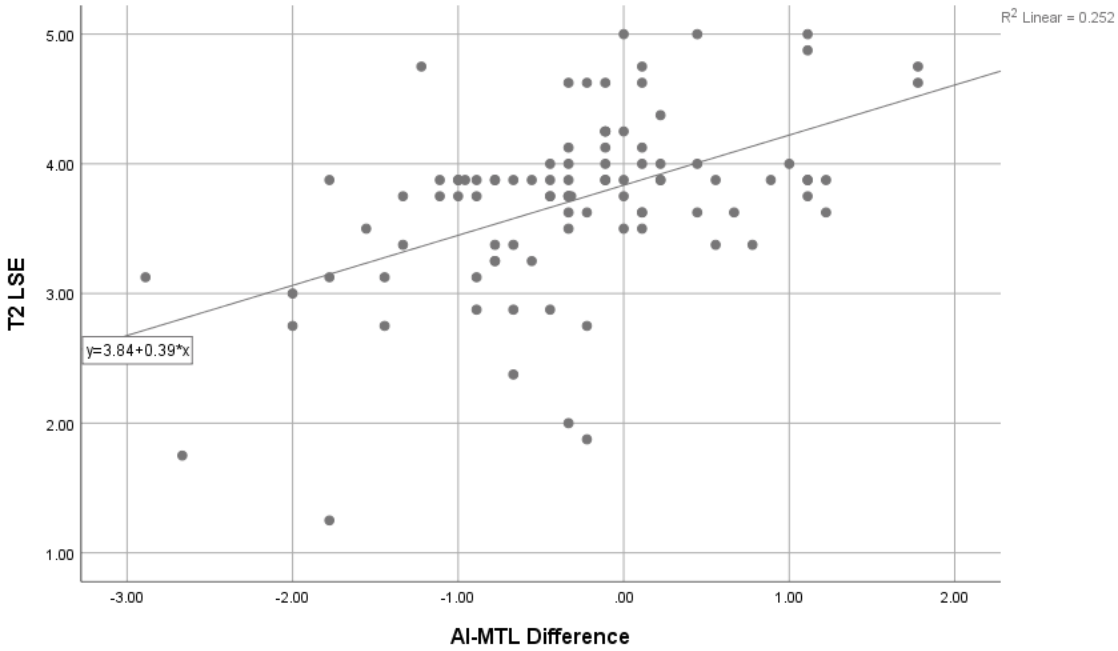

Figure 4. Correlation between leadership self-efficacy at Time 2 and affective-identity motivation to lead differences. T2 LSE = leadership self-efficacy at Time 2. AI-MTL = affective-identity motivation to lead.

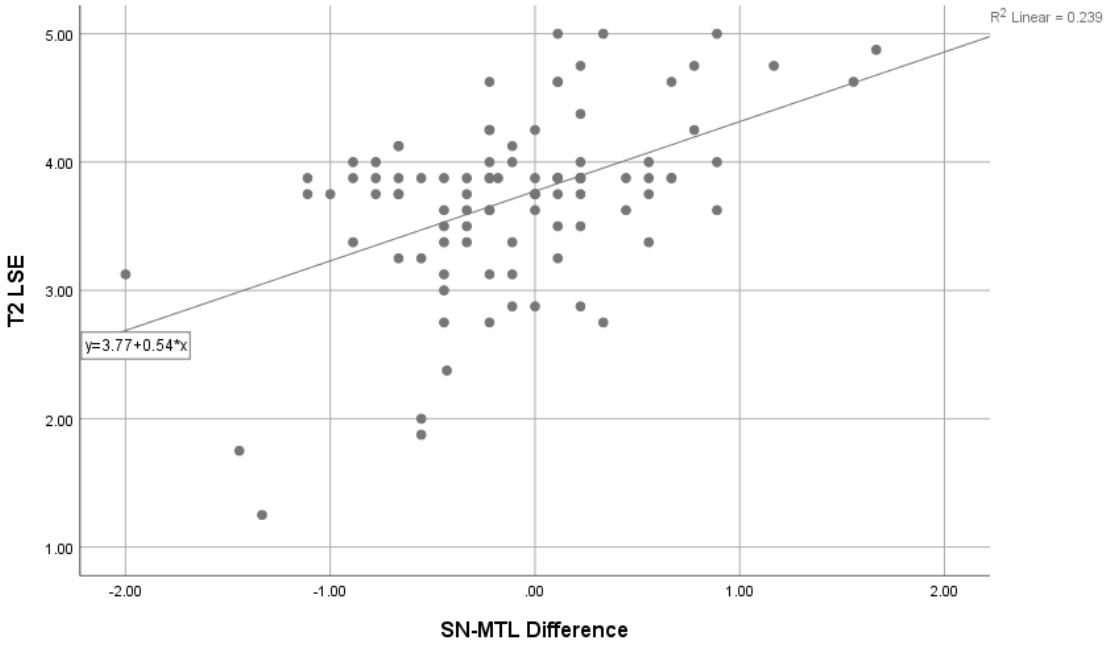

Figure 5. Correlation between leadership self-efficacy at Time 2 and social normative motivation to lead differences. T2 LSE = leadership self-efficacy at Time 2. SN-MTL = social normative motivation to lead.

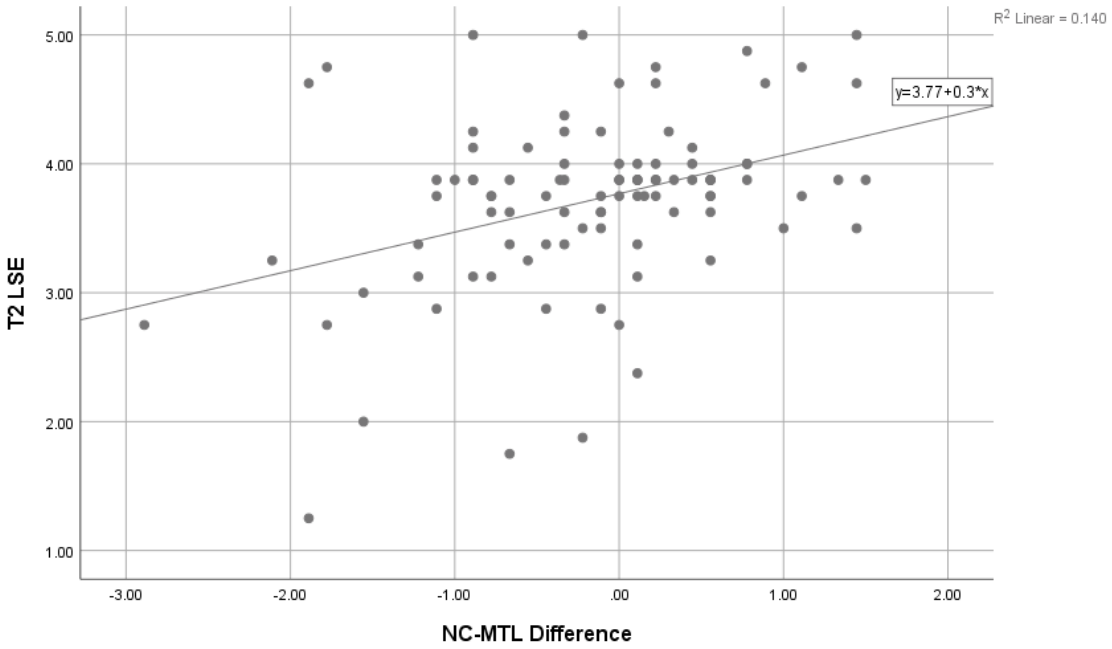

Figure 6. Correlation between leadership self-efficacy at Time 2 and noncalculative motivation to lead differences. T2 LSE = leadership self-efficacy at Time 2. NC-MTL = noncalculative motivation to lead.

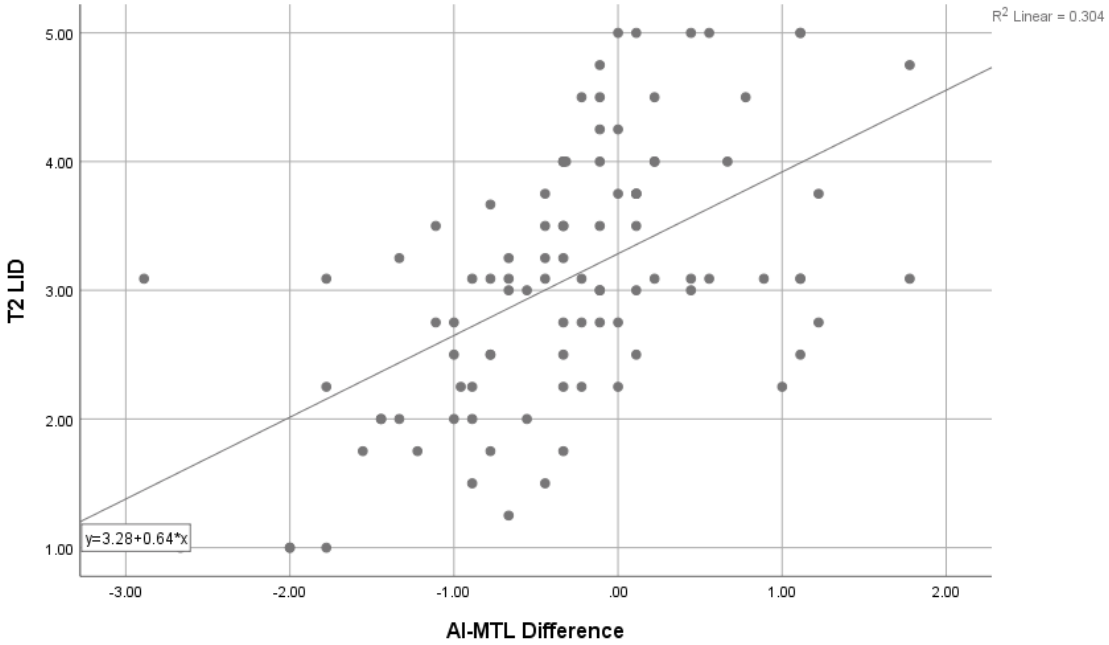

Figure 7. Correlation between leader identity at Time 2 and affective-identity motivation to lead differences. T2 LID = leader identity at Time 2. AI-MTL = affective-identity motivation to lead.

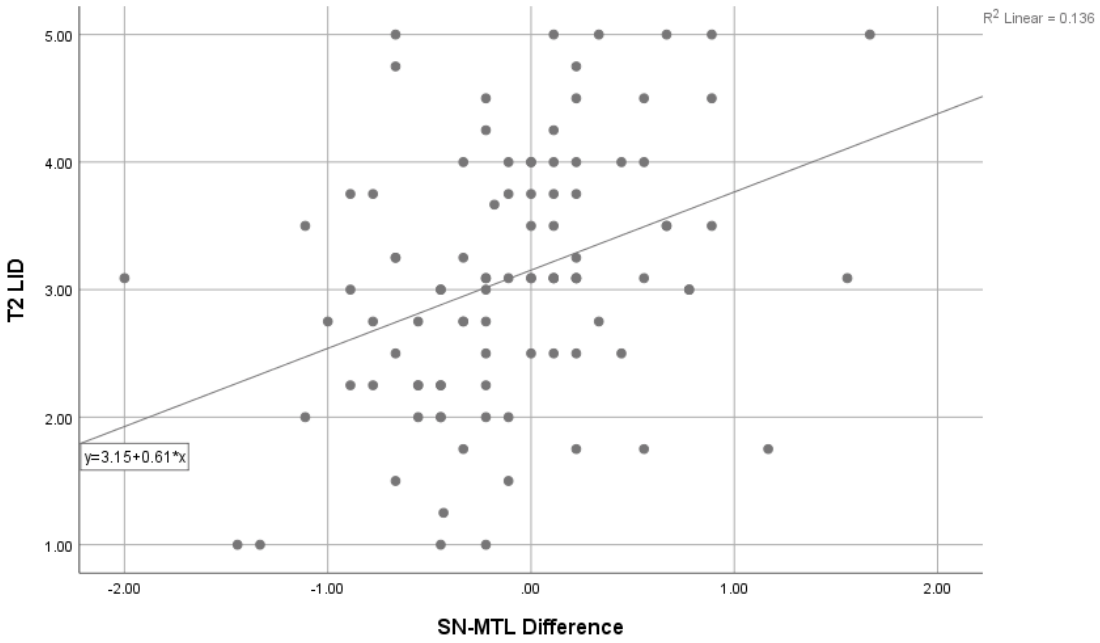

Figure 8. Correlation between leader identity at Time 2 and social normative motivation to lead differences. T2 LID = leader identity at Time 2. SN-MTL = social normative motivation to lead.

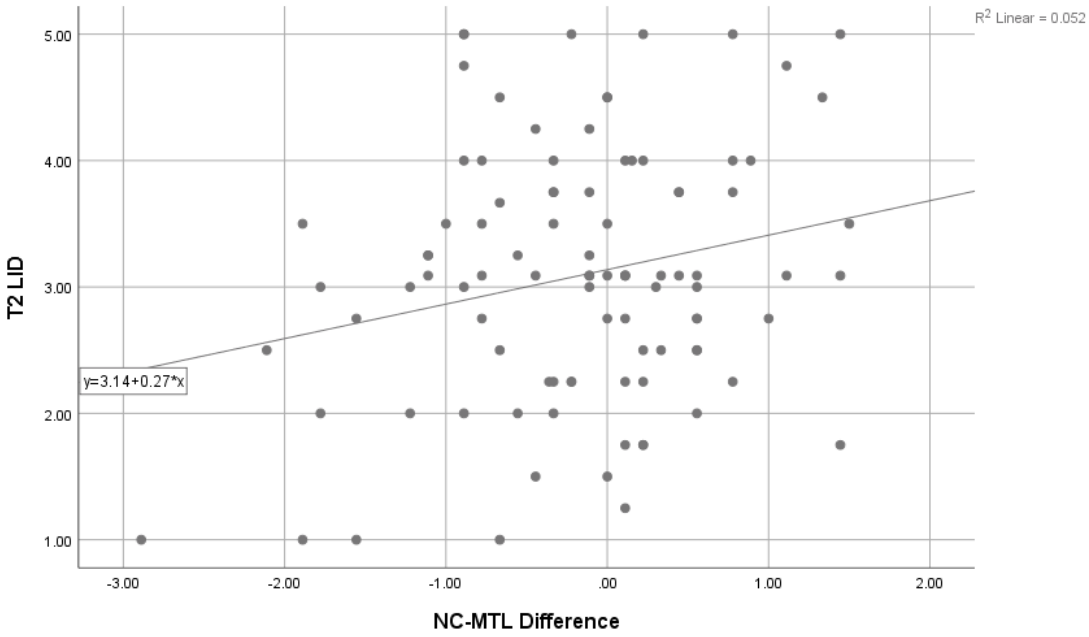

Figure 9. Correlation between leader identity at Time 2 and noncalculative motivation to lead differences. T2 LID = leader identity at Time 2. NC-MTL = noncalculative motivation to lead.

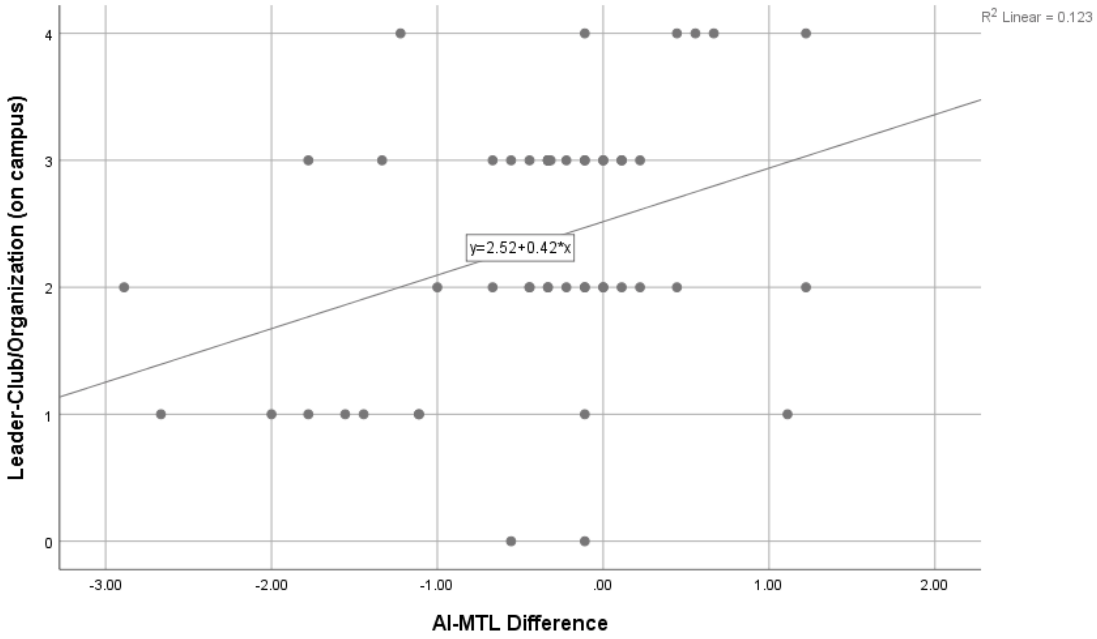

Figure 10. Correlation between on-campus clubs and organizations leadership positions and affective-identity motivation to lead differences. AI-MTL = affective-identity motivation to lead.

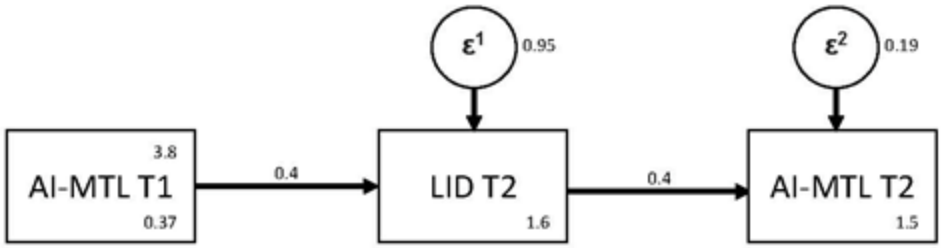

Figure 11. Simple mediation model with leader identity at Time 2 mediating the relationship between affective-identity motivation to lead at Time 1 and affective-identity motivation to lead at Time 2. AI-MTL T1 = affective-identity motivation to lead at Time 1. LID T2 = leader identity at Time 2. AI-MTL T2 = affective-identity motivation to lead at Time 2.

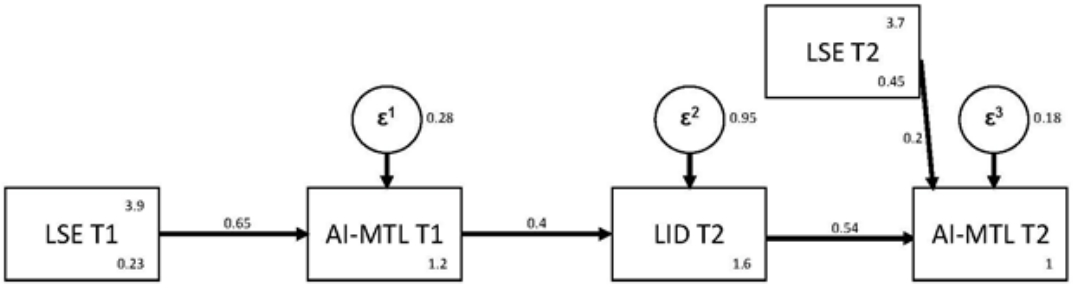

Figure 12. Complex model with leader identity at Time 2 mediating the relationship between affective-identity motivation to lead at Time 1 and affective-identity motivation to lead at Time 2 with leadership self-efficacy as predictors of affective-identity motivation to lead at each time point. LSE T1 = leadership self-efficacy at Time 1. AI-MTL T1 = affective-identity motivation to lead at Time 1. LID T2 = leader identity at Time 2. LSE T2 = leadership self-efficacy at Time 2. AI-MTL T2 = affective-identity motivation to lead at Time 2.

Appendix A

Leadership Self-Efficacy Scale

Directions – The following page contains 8 statements that indicate an attitude or behavior related to leadership that may or may not be characteristic or descriptive of you. Read each statement carefully and indicate the degree to which you agree with each statement.

1 **Disagree Strongly**	**2** **Disagree**	**3** **Neither Agree nor Disagree**	**4** **Agree**	**5** **Agree Strongly**

1. I feel that I know a lot more than most leaders about what it takes to be a good leader.
2. I know what it takes to make a work group accomplish its task.
3. In general, I am very good at leading a group of my peers.
4. I am confident of my ability to influence a work group that I lead.
5. I know what it takes to keep a work group running smoothly.
6. I know how to encourage good work group performance.
7. I feel comfortable allowing most group members to contribute to the task when I am leading a work group.
8. Overall, I believe that I can lead a work group successfully.

Appendix B

Motivation to Lead Scale

Directions - The following page contains statements that indicate an attitude or behavior related to leadership that may or may not be characteristic or descriptive of you. Read each statement carefully and indicate the degree to which you disagree or agree with each statement. Keep in mind that there are no right or wrong answers.

1 Disagree Strongly	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Agree Strongly

1. Most of the time, I prefer being a leader rather than a follower when working in a group.
2. I am the type of person who is not interested to lead others.
3. I am only interested to lead a group if there are clear advantages for me.
4. I will never agree to lead if I cannot see any benefits from accepting that role.
5. I am definitely not a leader by nature.
6. I feel that I have a duty to lead others if I am asked.
7. I agree to lead whenever I am asked or nominated by the other members.
8. I am the type of person who likes to be in charge of others.
9. I have more of my own problems to worry about than to be concerned about the rest of the group.
10. I would never agree to lead just because others voted for me.
11. Leading others is really more of a dirty job rather than an honorable one.
12. I believe I can contribute more to a group if I am a follower rather than a leader.
13. I was taught to believe in the value of leading others.
14. It is appropriate for people to accept leadership roles or positions when they are asked.
15. I usually want to be the leader in the groups that I work in.
16. I am the type who would actively support a leader but prefers not to be appointed as leader.
17. I have a tendency to take charge in most groups or teams that I work in.
18. I would only agree to be a group leader if I know I can benefit from that role.
19. I would agree to lead others even if there are no special rewards or benefits with that role.
20. I would want to know “what’s in it for me” if I am going to agree to lead a group.
21. I am seldom reluctant to be the leader of a group.
22. I have been taught that I should always volunteer to lead others if I can.
23. It is not right to decline leadership roles.
24. It is an honor and privilege to be asked to lead.
25. I never expect to get more privileges if I agree to lead a group.

26. If I agree to lead a group, I would never expect any advantages or special benefits.
27. People should volunteer to lead rather than wait for others to ask or vote for them.

Appendix C

Leadership Resume

Please indicate the number of positions that you have held in each of the following areas…:

College Activities: Founder
College Activities: Leader
College Activities: Member
College Activities: Volunteer
Church/Religious Service: Founder
Church/Religious Service: Leader
Church/Religious Service: Member
Church/Religious Service: Volunteer
Community Service: Founder
Community Service: Leader
Community Service: Member
Community Service: Volunteer
Employment: Founder
Employment: Leader
Employment: Member
Employment: Volunteer
Internship: Founder
Internship: Leader
Internship: Member
Internship: Volunteer

Please indicate how many hours (on avg) per week you participated in the following activities:

College Activities: Average hours per week
Church/Religious Service: Average hours per week
Community Service: Average hours per week
Employment: Average hours per week
Internship: Average hours per week

Appendix D

Leader Self-Identity Scale

Directions – Please rate the extent to which the following statements describe you, from “Not at all descriptive” to “Extremely descriptive.”

1 Not At All Descriptive	**2**	**3**	**4**	**5 Extremely Descriptive**
_____	1. I am a leader			
_____	2. I see myself as a leader			
_____	3. If I had to describe myself to others I would include the word leader			
_____	4. I prefer being seen by others as a leader			