Motivation, Personality, and Ideology as Antecedents of Transformational Leadership in Young Adults: A Cross-Level Analysis

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Abstract

Relationships among motivation, personality, leadership ideology, leadership behaviors, and positive organizational outcomes in young adults were assessed in a cross-level model. Ninety-five student leaders enrolled in a year-long cohort leadership development initiative at a Midwest university were administered assessments for motivation, personality, and leadership behaviors, and 4-6 raters assessed their leadership behaviors and outcomes (rater N= 550). Results indicated that leaders' personality and leaders' ideology are predictive of their transformational leadership behaviors. Results of the cross-level analysis demonstrated the need to analyze assessment data collected from multiple sources and levels using robust multi-level analyses. Research and practical implications are discussed.

Introduction

Research studies of leadership among college-aged adults have received some attention both in classroom and co-curricular settings (Astin & Astin, 2000; Council for the Advancement of Standards in Higher Education –CAS , 2006). These have included tests of personal and societal values (Zimmerman-Oster & Burkhardt, 1999), critical thinking of student leaders (Ricketts, 2003), and cognitive ability, personality, and student leadership behaviors (Lee, Ashton, & de Vries, 2005). Most of these studies have addressed the developmental outcomes of leadership programs without testing any predictors of leadership behaviors (Komives, 1994). Simply, more is known about the impact of student leadership than its antecedents.

This parallels the leadership field, in which the outcomes of leadership also have been examined much more so than its antecedents. Testing the antecedents of leadership in young adults will provide salient contributions to the student affairs, student development, and student leadership sub-fields. Such work will inform college leadership programs beyond skill-based learning and experiential-based leadership development initiatives, and move toward greater theory-driven practices that reflect the antecedents of such student leadership behaviors (Komives, Owen, Longerbeam, Mainella, & Osteen, 2005).

Research testing the antecedents of leadership among college students has been limited, but the antecedents of leadership across other populations have received considerable attention: work motivation (Barbuto, 2005; Barbuto, Fritz, & Marx, 2000; Barbuto, Fritz, & Marx, 2002; Barbuto & Scholl, 1999), emotional intelligence (Barbuto & Burbach, 2006; Harms & Crede, 2010), cynicism and organizational change and peer leadership behaviors (Bommer, Rubin, & Baldwin, 2004), self-other rater agreement (Barbuto, Wilmot, Singh, & Story, 2012; Barbuto, Wilmot, & Story, 2011), emotions and personality (Rubin, Munz, & Bommer, 2005), and early childhood experiences (Avolio, 1994). The antecedents of transformational leadership have been examined liberally, but not in the student context, so few inferences can be drawn to guide transformational leadership development among college-aged adults. This study examines the antecedents of transformational leadership among young adults (college students) using the variables of motivation, personality, and self-reported transformational leadership, selected because they emerged as some of the strongest antecedents of transformational leadership reported in prior studies.

Literature Review

Transformational Leadership

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Burns (1978) described transforming leaders as initiating mutual development between leaders and followers, each elevating the morality and development of one another to higher orders of being. He also described transforming leadership as eliciting the greatest good from followers, where followers overcome petty preoccupations with self-interests and instead put the needs of the group and organization first. These notions were intuitively appealing, but not tested until the mid-to-late 1980s with the work of Bass and colleagues (Bass, 1985; Bass & Avolio, 1989). Eventually, the construct dimensions were labeled the "4Is" of transformational leadership, consisting of individualized consideration, intellectual stimulation, inspirational motivation, and idealized influence behaviors (Avolio, Waldman, & Yammarino, 1991).   In the past 25 years, hundreds of studies have tested the impact of transformational leadership, leading to a meta-analysis that reported relationships between these leadership behaviors and most positive outcomes – especially effectiveness, satisfaction, and extra effort (see Lowe, Kroeck, & Sivasubramaniam, 1996).

The antecedents of transformational leadership have been studied less frequently, but have included such variables as work motivation (Barbuto, 2005; Barbuto et al., 2002), emotional intelligence (Barbuto & Burbach, 2006; Harms & Crede, 2010), early childhood experiences (Avolio, 1994), emotions and personality (Rubin et al., 2005), and peer leader role modeling (Bommer et al., 2004). These present some optimism for predicting transformational leadership – which in this study was done using work motivation and personality to test with college students' use of transformational leadership behaviors. In this study, personality, work motivation, and leaders' ideology were tested as antecedents of students' transformational leadership behaviors. The complete tested model is depicted (See Figure 1).

Figure 1 – TOP
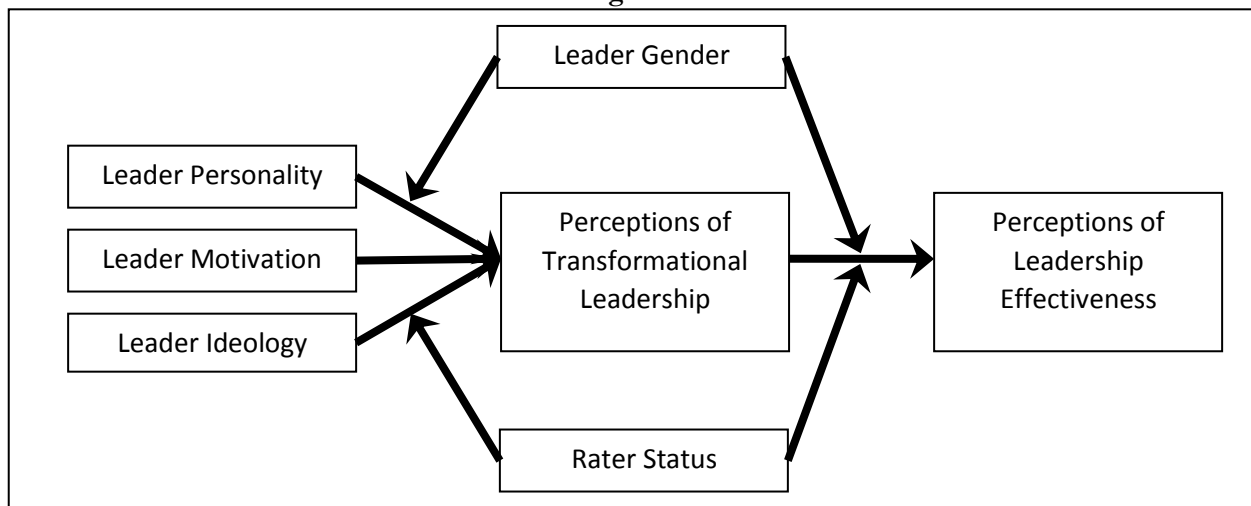
Work Motivation

Sources of motivation have been studied from many viewpoints, including psychosocial (Jung, 1971), need-based (Maslow, 1954), value-based (Etzioni, 1961), goal setting (Locke & Latham, 1984), self-concept based (Brief & Aldag, 1981; Gecas, 1982), and, to some extent, developmental (Kegan, 1994) perspectives. Many of these efforts have not operationalized constructs for research, instead remaining as counseling and diagnostics tools (See Barbuto, 2000). However, an integrative typology that brought together many of the tenets of historical and contemporary motivation theories was proposed , consisting of five sources of motivation (Leonard, Beauvais, & Scholl, 1999): intrinsic process (derived from fun), instrumental (derived from tangible reward), self-concept external (derived from external attributions of self-concept), self-concept internal (derived from an internal attribution of self-concept) and goal internalization (derived from a sense of purpose or mission). This typology was operationalized with scales to measure the construct (Barbuto & Scholl, 1998).

Subsequent research reported that work motivation predicts leaders' behaviors across a broad range of the five sources of work motivation (Barbuto & Scholl, 1999; Barbuto et al., 2000). Studies also indicated that leaders high in goal internalization motivation and low in instrumental and self-concept external motivation are most likely to exhibit transformational leadership behaviors (Barbuto et al., 2000). Barbuto and Ye (2006) studied work motivation in a structural model with conflict styles and significant explained variance for obliging, dominating, avoiding, and compromising.

They also reported explained variance with leader effectiveness (28%). Barbuto and Story (2007) reported significant relationships between work motivation and mental boundaries, and studied work motivation and reported internal motives related significantly to internal locus of control (2008). Barbuto, Weltmer, and Pennisi (2010) studied work motivation along with locus of control to predict leader-member exchange (LMX) and reported that self-concept internal and goal internalization relate to LMX quality. Barbuto and Story (2011) studied the relationship between work motivation and organizational citizenship behaviors and reported positive relationships with internally driven motives and negative relationships with externally driven motives. Barbuto and Gifford (2012) studied work motivation with leader-member exchange and found that similarity between leader and follower work motivation does not lead to increased LMX quality. Bugenhagen and Barbuto (2012) studied constructive development with sources of work motivation and reported that instrumental motivation increases as constructive development occurs. With these consistent relationships found between internal motivations and positive leadership behaviors and outcomes, we expected that internal motivation would be positively related to transformational leadership.

Hypothesis 1(a, b, c): Young adults' intrinsic process (a), self-concept internal (b), and goal internalization (c) motivation will positively relate to transformational leadership behaviors.
NEO Personality

The study of personality facilitates an understanding of why people behave differently from each other, even when faced with similar situations (Digman, 1990). An assessment of personality with assessment for leadership and motivational behaviors leads to increased understanding of the relationship of these constructs. While many instruments, such as a MBTI (Myers & McCaulley, 1985), have been popular in the pop psychology and self-help spheres, the most reliable and valid measure of personality is the NEO PI-R (Costa & McCrae, 1992), which is a robust measure that depicts five dimensions of personality: extraversion (talkative, energetic, and assertive with focus on the quantity and intensity of ones' interpersonal interactions); agreeableness (sympathetic, kind, and affectionate); conscientiousness (organized, thorough, and planned); neuroticism (tense, moody, and anxious); and openness to new experiences (wide interests, imaginative, and insightful). McCrae and John (1992) described the five-factor model with greater detail in their introduction to it and its applications.

A study of transformational leadership utilizing the NEO revealed that extraversion and agreeableness positively predict transformational leadership, while openness to experience is positively correlated with transformational leadership, although its effect disappears once the influence of the other traits is controlled. Finally, transformational leadership behavior predicts a number of outcomes reflecting leader effectiveness, controlling for the effect of transactional leadership (Judge & Bono, 2000). We expected students' extraversion and agreeableness to be positively related to their displays of transformational leadership behaviors.

Hypothesis 2(a, b): Students' extraversion (a) and agreeableness (b) personality dimensions will positively relate to transformational leadership behaviors.
Leader Ideology

Podsakoff and Organ (1986) argued that the social desirability associated with self-reported measures of leadership behavior leads such measures to reflect more an ideology than an actual behavioral representation. Additionally, they cited multiple works that demonstrated little relationship between self-reported and rater-reported interpretations of the same phenomena and also raised concerns about reporting bias. In their highly influential essay, they concluded that self-reported leadership measures are more likely to reflect what a leader strives for or desires – an ideology – rather than actual behaviors. Leaders' self-reported behaviors have since been referred to as *ideology* across several works (London, 2001; Kegan, 1994).

Bugenhagen (2006) found that a leader's self-rating (self-knowledge) for transformational leadership behaviors is significant in promoting innovation and creativity (intellectual stimulation) intended for development of the followers' abilities. However, the followers of these leaders tend to view the leaders' overuse of rules, standards, and past failures (management by exception-active) in terms of preservation of the organization and its goals, rather than individual development (individualized consideration).

Avolio and Gardner (2005) discussed the construct of authentic leadership in organizations, describing it as a positive form of leadership that emphasizes self-development. In light of the development of the authentic leadership construct, leadership development interventions need to foster increased self-knowledge of the leader's behaviors through multiple assessments, including 360 degree feedback, in order to help leaders see themselves more clearly (Gardner, Avolio, Luthans, May, & Walumba, 2005). It is therefore expected that leaders' ideology (self-reported leadership) will positively relate to raters' observations of leaders' transformational leadership behaviors.

Hypothesis 3: Students' leadership ideology (operationalized as self-reported behaviors) will positively relate to their transformational leadership behaviors.

Methods

Participants

Data were collected from a sample population of 110 participants in a student leadership cohort of high achieving undergraduates. Participants consisted of students selected to attend a week-long college student leadership development institute because of their leadership roles in on-campus social and community clubs and fraternities. The institute offered by a large, public doctoral-granting institution in the Midwest was made available to all enrolled students. The sample represented a variety of academic disciplines (e.g., business, agriculture, education, architecture, engineering, letters and sciences, family sciences) and major student organizations (student government, residence halls, athletics, multi-cultural).

Forty-two percent of participating leaders were male, with an approximate[2] mean age of 19.9 years. All participants were younger than 35, and 91.8% were between the ages of 18 and 21 (31% were sophomores, 42% were juniors, 25% were seniors). Twenty-one percent of participants had already earned a bachelor's degree, and the remainder were enrolled in their first bachelor's degree program.   Eighty-three percent of the students were white, 6% were Asian, 5% were Hispanic, 3% were Native American, and 3% were African American.

Procedures

The 110 participants were invited to participate in a pre-institute assessment of their leadership behaviors, personality, and motivation. The pre-institute assessment consisted of 360 degree assessments that would provide students with the benefit of feedback from the aggregated data.   Informed consent was obtained from all participants through their decision to enroll and complete the assessment instrument. Participants could still participate in the leadership conference if they chose to not participate in the pre-institute assessment. All research procedures were supervised and approved in accordance with the third author's institutional review board. From the data collection process, 98 usable leader instruments were returned in self-addressed, stamped envelopes provided. Each participant provided contact information for 4-8 individuals, all of whom were invited to rate the students' leadership behavior. Students were instructed to provide contact information for individuals that they supervised or worked with, were allowed to select as many as they wished, and were encouraged to include both positive and challenging colleagues. Five hundred fifty-nine usable rater instruments were completed and returned to the second author in sealed envelopes via on-campus mail, averaging 5.70 (SD = 1.34) usable instruments per participant (range: 1-7).

Instrumentation

Full Range Leadership Behaviors. Full-range leadership was measured using the Multifactor Leadership Questionnaire, Form 5X (Avolio & Bass, 2004), which assesses transactional and transformational leader behaviors. The instrument contains 45 statements; the leader version contains statements that describe leader's perceptions of his or her behavior, while the rater version contains similar statements to test the rater's perception of the leader's behaviors. Both versions use a 5-point Likert-type scale ranging from "0" (Not at all) to "4" (Frequently, if not always). Four subscales reflect transactional leadership traits: contingent reward (I/This-person provide(s) assistance in exchange for efforts); management-by-exception-active (I/This-person keep(s) track of all mistakes); management-by-exception-passive (I/This person fail(s) to interfere until problems become serious); and laissez-faire (I/This-person is absent when needed). The four subscales of transformational leadership are: individualized consideration (I/This-person spends time teaching and coaching me); idealized influence (I/This-person instill(s) pride for being associated with me/this-person); inspirational motivation (I/This-person talk(s) enthusiastically about what needs to be accomplished); and intellectual stimulation (I/This-person examine(s) assumptions to question whether they are appropriate). Three sub-scales determine degree of leader effectiveness with followers: extra effort (increases my willingness to try harder); effectiveness (is effective in meeting my job-related needs); and satisfaction (uses methods of leadership that are satisfying).

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[2] Age was collected in categorical form (18-21, 22-25, 26-35, 36-45, 46-55, 56-65, and 66 and over). The midpoint of the interval was used as an approximation of the typical age in that interval, and the midpoint was weighted by the number of participants whose age fell in a particular range when calculating the average age of participants.

The Multifactor Leadership Questionnaire, considered the gold standard for empirical research on full-range leadership behaviors, has established validity and reliability. Lowe et al. (1996) conducted a meta-analytic review of the literature for assessment of transformational and transactional leadership and confirmed the ability to measure transformational leadership and leader effectiveness with reliability. Reliability estimates for each subscale are provided (see Table 1).

Table 1. Descriptive Statistics, Sample Sizes, and Cronbach's Alpha for All Subscales

	Rater				Leader			
	n	M	SD	α	n	M	SD	α
Multifactor Leadership Questionnaire								
Idealized Influence (Attributed)	558	3.48	0.53	0.70	84	3.09	0.60	0.75
Idealized Influence (Behavior)	555	3.30	0.61	0.69	84	3.13	0.61	0.70
Inspirational Motivation	557	3.51	0.52	0.76	84	3.30	0.50	0.67
Intellectual Stimulation	552	3.10	0.64	0.75	84	3.05	0.55	0.71
Individual Consideration	549	3.16	0.63	0.53	84	3.11	0.51	0.37
Contingent Reward	545	0.79	0.62	0.70	84	1.00	0.49	0.55
Manage.-by-Exception (Active)	543	1.58	0.95	0.70	84	1.85	0.82	0.79
Manage.-by-Exception (Passive)	546	0.83	0.70	0.67	84	1.21	0.59	0.57
Laissez-faire Leadership	556	0.51	0.61	0.64	84	0.94	0.68	0.70
Extra Effort	520	3.29	0.76	0.81	82	2.95	0.65	0.78
Effectiveness	551	3.46	0.60	0.79	83	3.11	0.60	0.64
Satisfaction	552	3.61	0.58	0.73	83	3.25	0.50	0.57
Transformational Leadership	558	3.31	0.49	0.90				
Leader Ideology					84	3.14	0.41	0.87
Motivational Sources Inventory								
Intrinsic Process					94	3.95	0.75	0.65
Instrumental					94	3.05	0.93	0.71
Self-Concept External					94	3.21	0.97	0.68
Self-Concept Internal					94	4.84	0.53	0.63
Goal Internalization					94	3.86	0.71	0.64
Internal Motivation					94	4.21	0.49	0.71
External Motivation					94	3.13	0.86	0.81
NEO Personality Inventory-Revised								
Neuroticism					90	0.69	0.50	0.82
Extraversion					90	1.83	0.40	0.73
Openness to New Experiences					90	1.59	0.48	0.76
Agreeableness					90	1.96	0.43	0.74
Conscientiousness					90	1.92	0.49	0.82

Sources of Motivation. Motivation was measured using the Motivational Sources Inventory (MSI), which measures five sources of motivation (Barbuto & Scholl, 1998). The instrument contains 30 statements that describe things that motivate the person, who responds utilizing a 5-point Likert-type scale ranging from "0" (Entirely Disagree) to "4" (Entirely Agree). The five sources of motivation include intrinsic process (I prefer to only do things that are fun); instrumental (I like to be rewarded for extra responsibilities); self-concept external (It is important that others appreciate the work I do); self-concept internal (Decisions I make reflect my personal standards); and goal internalization (I work hard for a company if I agree with its mission).

The instrument has been used in a number of studies, as described earlier in this paper, and has demonstrated reliable psychometrics producing coefficient ☐ ☐ of .60 to .93 in a wide range of populations (e.g., college students, education professionals, urban business people, social service workers, and health care providers). Reliability estimates are provided in Table 1.

Dimensions of Personality. Personality was measured using the NEO PI-R*,* which assesses five major dimensions of personality. The instrument contains 60 statements to which participants respond utilizing a 5-point Likert-type scale ranging from "1" (Strongly Disagree) to "5" (Strongly Agree). The Five Factor Model provides a systematic assessment of emotional, interpersonal, experiential, attitudinal, and motivational styles to measure the five major domains of personality: extraversion (I like to have a lot of people around me); agreeableness (I often get into arguments with my family and friends); conscientiousness (I try to be courteous to everyone that I meet); neuroticism (I am not a worrier); and openness to new experiences (Once I find the right way to do something I stick to it). Barbuto, Phipps, and Ye (2010) studied personality with conflict management styles and effectiveness and reported that conscientiousness has a direct structural path to effectiveness. Coefficient alphas for the domain range from .86 to .92 for Form S, and from .89 to .95 for Form R. Internal consistency estimates for the facets from Form S range from .56 to .81. For the Form R facets, these values range from .60 to .90 (Costa & McRae, 1992). Reliability estimates for each subscale are provided in Table 1.

Results

Data Analysis Plan

The data used in this study reflect a complex sampling plan with multiple raters evaluating each leader. Consequently, a multilevel structural equation model (MSEM; see Bovaird, 2007) with raters (level 1) hierarchically nested within leaders (level 2) was implemented through M-plus version 5.0 (Muthén & Muthén, 1998-2008) to evaluate the conceptual model in Figure 1. M-plus allows for the use of a full-information maximum likelihood (FIML; Enders, 2001) procedure for dealing with missing data and conducting an MSEM with unbalanced within-leader sample sizes.

Centering. According to Enders and Tofighi (2007), centering-within-context – in this case, leader-mean-centering – is necessary to prevent leader-level variance from confounding rater-level relationships. This was accomplished by determining the leader-level average within-leader assessment and then subtracting that value from all rater-level assessments for that leader. These rater-level deviations served as the level 1 data, while the within-leader averages served as between-leader (level 2) variables.

In addition to the rater-level measurement for transformational leadership, a between-leader measurement model for transformational leadership was included in order to test for macro-micro situations where it is hypothesized that between-level outcomes predict within-level variables (Snijders & Bosker, 1999; Croon & van Veldhoven, 2007). This also serves to prevent an ecological or atomistic fallacy (see Bovaird, 2007; Robinson, 1950).

Measurement models. The conceptual model presented in Figure 1 suggests that an individual's perceptions of a leader's effectiveness can best be predicted by that individual's perceptions of the leader's transformational leadership. An individual's assessment of a leader's transformational leadership, however, is a function of the leader's own ideology, motivation, and personality. Transformational leadership (*TL)* was operationalized as a reflective latent variable measured by the leader-mean-centered deviation scores from the attributed idealized influence (IIA), idealized influence behavior (IIB), inspirational motivation (IM), intellectual stimulation (IS), individual consideration (IC), and reverse-coded contingent reward (CR) subscales from the Rater form of the MLQ. The average leader scores (Avg. IIA, etc.) were used to operationalize a reflective latent variable at the between-leader level (Avg. TL). All within-leader factor loadings were constrained to be equal to the between-leader loadings to preserve measurement invariance. Leader ideology (Ideology) was operationalized as a leader-level reflective latent variable measured by these subscales from the Leader form of the MLQ: attributed idealized influence (L-IIA), idealized influence behavior (L-IIB), inspirational motivation (L-IM), intellectual stimulation (L-IS), individual consideration (L-IC), reverse-coded contingent reward (L-CR), extra effort (L-E.E.), effectiveness (L-Eff.), and satisfaction (L-Sat.).

All other variables were included as manifest (i.e., observed) variables. Perceptions of leadership effectiveness from Figure 1 were operationalized by including the extra effort, effectiveness, and satisfaction subscales from the Rater form of the MLQ as manifest rater-level outcomes. The leader averages of these scales (Avg. E.E., etc.) were included as manifest leader-level outcomes.

Leader personality as a predictor of transformational leadership perceptions was operationalized by entering the five dimension scores from the NEO-PI as five separate leader-level predictors. Finally, leader motivation was included as two manifest leader-level manifest variables. Internal motivation was the average of intrinsic process, self-concept internal, and goal internalization subscales from the MSI, while external motivation was the average of the instrumental and self-concept external subscales from the MSI.

Structural model. A path diagram representing the statistical model used to evaluate the conceptual model is presented in Figure 2. At the rater or within-leader level, rater perception of transformational leadership is a latent predictor of three measures of leader effectiveness: extra effort, effectiveness, and satisfaction. At the leader level, leader personality, motivation, and ideology are tested as predictors of the average transformational leadership ratings given to them by their raters. Average transformational leadership is then tested as predictive of average perceptions of the leader's extra effort, effectiveness, and satisfaction.

Figure 2 – TOP

Moderators. We also sought to ascertain whether the predictive effects of a leader's ideology, motivation, and personality on perceptions of the leader's transformational leadership and perceptions of the leader's effectiveness are moderated by the leader's gender and the relative position of the rater in relation to the leader according to the organization's leadership structure. While such moderated relationships typically are evaluated through the use of cross-product interaction terms, we used a multiple-group multilevel structural equation modeling (MG-MSEM) approach. By explicitly testing two models that differ depending on whether the model parameters can be constrained to be equal across groups defined by levels of the moderator variables or are allowed to be freely estimated, we were able to test whether any model effects varied across levels of the moderator using a chi-square difference test.

The stability of multilevel models is heavily dependent upon the higher level sample size – in this case the number of leaders – and the size of the sample relative to the number of model parameters to be estimated. When we conducted a multiple-group analysis, the leader-level sample size per group was reduced, but the number of parameters remained constant, creating an analytic situation with reduced stability. Some respondents also failed to indicate their gender or organizational level, resulting in an additional reduction in the sample sizes. Consequently, we reduced the number of parameters in the multiple-group model by creating composite variables for each of the latent variables in the original model. For instance, rather than include the latent leader-level *ideology* variable as a predictor of perceptions of transformational leadership, we created a composite score that is the average of the nine MLQ sub-scales that were initially included as reflective indicators of ideology.

Predicting Leader Effectiveness

Parameter estimates and the standardized solution for all estimated model parameters are reported in Table 2. Figure 2 presents a path diagram of the statistical model used to evaluate the overall effect (i.e., not broken down by subgroups) of leader characteristics on perceived transformational leadership and perceived effectiveness. Darker paths reflect effects that were determined to be statistically significant at $a = .05$ level. All measurement model parameters also were significant, but not of focal interest to the study and thus not highlighted. Hu and Bentler's (1999) guidelines were used to conclude that the model achieved close fit, $\chi^2(279) = 479.840$, $p < .05$; CFI = .953; RMSEA = .036, SRMR$_{Within}$ = 0.008, SRMR$_{Between}$ = 0.054.

Table 2. Partial Parameter Estimates, Standard Errors, and Standardized Solution for Final Model

		Rater Level			Leader Level		
		B	β	SE	B	β	SE
Factor Loadings							
MLQ by	IIA	1.000	0.802	--	1.000	0.863	--
	IIB	1.078	0.766	0.050 *	1.078	0.744	0.050 *
	IM	0.974	0.805	0.042 *	0.974	0.823	0.042 *
	IS	1.222	0.805	0.051 *	1.222	0.852	0.051 *
	IC	1.148	0.776	0.052 *	1.148	0.788	0.052 *
	CR	-1.131	-0.764	0.051 *	-1.131	-0.812	0.051 *
Ideology by	IIA				1.000	0.829	--
	IIB				0.767	0.632	0.124 *
	IM				0.744	0.748	0.096 *
	IS				0.584	0.529	0.118 *
	IC				0.520	0.513	0.108 *
	CR				-0.646	-0.654	0.100 *
	EE				0.978	0.753	0.128 *
	EFF				0.958	0.801	0.117 *
	SAT				0.749	0.758	0.095 *
Path Coefficients							
EE on	MLQ	1.257	0.710	0.069 *	1.311	0.752	0.132 *
EFF on	MLQ	1.067	0.754	0.052 *	1.090	0.790	0.099 *
SAT on	MLQ	0.971	0.712	0.051 *	0.999	0.772	0.095 *
MLQ on	Ideology				0.151	0.320	0.060 *
	NEO_N				0.174	0.371	0.053 *
	NEO_E				0.004	0.007	0.067
	NEO_O				0.001	0.002	0.052
	NEO_A				0.193	0.356	0.061 *
	NEO_C				0.036	0.076	0.055
	MSIINT				-0.003	-0.006	0.056
	MSIEXT				-0.035	-0.127	0.033

* - indicates statistical significance at the $p < .05$ level.

At the rater level, perceived transformational leadership significantly predicted perceived leader effectiveness (extra effort: $\beta = 0.710$, $p < .05$; effectiveness: $\beta = 0.754$, $p < .05$; and satisfaction: $\beta = 0.712$, $p < .05$). This indicates that all raters who perceived a particular leader to have higher levels of transformational leadership also tended to perceive that leader to be more effective. At the leader level, leaders with higher average ratings of transformational leadership also tended to be viewed as effective, on average (Avg. EE: $\beta = 0.752$, $p < .05$; Avg. Eff: $\beta = 0.790$, $p < .05$; and Avg. Sat: $\beta = 0.772$, $p < .05$).

Leaders who self-reported themselves to be higher in leadership ideology tended to be perceived by their raters as higher in transformational leadership (β = 0.320, p < .05). Leaders who self-reported higher levels of neuroticism and agreeableness also significantly tended to be perceived as high in transformational leadership (neuroticism: β = 0.371, p < .05; agreeableness: β = 0.356, p < .05). A leader's levels of extraversion, openness, and conscientiousness were not found to be significant predictors of their perceived level of transformational leadership. Leader motivation was not found to be a significant predictor of perceived transformational leadership.

Manifest Variables Only

Prior to assessing the role of relative organizational level or gender as moderators, we tested a path model with only manifest composite variables instead of latent factors as previously described in the data analysis plan. This model fit well according to a test of exact fit, $\chi^2(27)$ = 17.666, p > .05; CFI > .999; RMSEA < 0.001, SRMR$_{Within}$ < 0.001, SRMR$_{Between}$ = 0.022. Table 3 contrasts the structural model parameter estimates from the manifest-only model with the same parameter estimates from the latent-variable model. There were no differences in inferences, although there were some minor differences in the standardized structural solutions between the manifest and latent variable models. However, such differences can be attributed to the attenuation of effects due to unreliability in the manifest measures in the manifest-only model, whereas the latent-variable model convalesced the structural parameters for unreliability.

Table 3. A Comparison of Parameter Estimates and Standardized Solutions for Structural Paths Using Latent versus Manifest Variables

	Latent			Manifest		
Path Coefficient	B	β	SE	B	β	SE
Rater Level						
EE on TL	1.257	0.710	0.069 *	1.473	0.647	0.078 *
Eff ON TL	1.067	0.754	0.052 *	1.209	0.663	0.059 *
Sat ON TL	0.971	0.712	0.051 *	1.142	0.650	0.057 *
Leader Level						
Avg. EE ON Avg. TL	1.311	0.752	0.132 *	1.461	0.684	0.158 *
Avg. Eff ON Avg. TL	1.090	0.790	0.099 *	1.173	0.693	0.123 *
Avg. Sat ON Avg. TL	0.999	0.772	0.095 *	1.118	0.704	0.114 *
Avg. TL ON Ideology	0.151	0.320	0.060 *	0.172	0.309	0.063 *
Avg. TL ON Neuro.	0.174	0.371	0.053 *	0.123	0.320	0.041 *
Avg. TL ON Extra.	0.004	0.007	0.067	-0.037	-0.077	0.051
Avg. TL ON Open.	0.001	0.002	0.052	0.010	0.025	0.040
Avg. TL ON Agree.	0.193	0.356	0.061 *	0.151	0.342	0.046 *
Avg. TL ON Consc.	0.036	0.076	0.055	0.034	0.088	0.042
Avg. TL ON Int. Mot.	-0.003	-0.006	0.056	0.030	0.077	0.043
Avg. TL ON Ext. Mot.	-0.035	-0.127	0.033	-0.038	-0.171	0.026

Leader Gender as a Moderator

To assess the role of the leader's gender as a moderator of the predictive effect of leader ideology, personality, and motivation on perceptions of transformational leadership and effectiveness, we tested a multiple-group, multilevel structural equation model. Leaders were categorically designated as male (n = 39) or female (n = 56). Three leaders failed to self-report their gender, so we were unable to designate them as belonging to one group or the other. Consequently, any data related to them or their raters were not usable, reducing the sample size of raters from N = 559 to N = 541.

The constrained gender model was found to fit well according to a test of exact fit, $\chi^2(68)$ = 75.376, p > .05; CFI = .995; RMSEA = 0.020, SRMR$_{Within}$ = 0.005, SRMR$_{Between}$ = 0.076. The unconstrained model also was found to fit well according to a test of exact fit, $\chi^2(54)$ = 53.773, p > .05; CFI > .999; RMSEA < .001, SRMR$_{Within}$ < .001, SRMR$_{Between}$ = 0.051. Structural parameter estimates for the constrained gender model and by male and female subgroups are reported in Table 4. The constrained model leads to the same inferences as the latent variable and manifest variable models reported in Table 3. Any discrepancies between the constrained model solution reported in

Table 4 and the manifest variable model reported in Table 3 can be attributed to the reduced sample size due to non-reporting of gender by some participants.

Table 4. Parameter Estimates and Standardized Solutions for the Constrained and Unconstrained Gender Models

Path Coefficient	Constrained			Male			Female		
	B	β	SE	B	β	SE	B	β	SE
Rater Level									
EE on TL	1.469	0.642	0.079 *	1.492	0.648	0.125 *	1.456	0.644	0.102 *
Eff ON TL	1.196	0.652	0.059 *	1.284	0.679	0.095 *	1.148	0.657	0.075 *
Sat ON TL	1.136	0.657	0.058 *	1.277	0.702	0.088 *	1.031	0.608	0.077 *
Leader Level									
Avg. EE ON Avg. TL	1.429	0.658	0.169 *	1.693	0.723	0.259 *	1.266	0.645	0.201 *
Avg. Eff ON Avg. TL	1.162	0.637	0.128 *	1.463	0.728	0.220 *	0.967	0.674	0.142 *
Avg. Sat ON Avg. TL	1.114	0.698	0.123 *	1.512	0.815	0.172 *	0.872	0.645	0.138 *
Avg. TL ON Ideology	0.175	0.297	0.064 *	0.221	0.376	0.110 *	0.180	0.329	0.082 *
Avg. TL ON Neuro.	0.121	0.295	0.042 *	0.134	0.326	0.062 *	0.113	0.303	0.056 *
Avg. TL ON Extra.	-0.045	-0.102	0.052	-0.113	-0.256	0.076	-0.013	-0.026	0.071
Avg. TL ON Open.	0.017	0.046	0.043	0.095	0.253	0.065	-0.040	-0.094	0.055
Avg. TL ON Agree.	0.152	0.350	0.047 *	0.118	0.274	0.070	0.147	0.324	0.064 *
Avg. TL ON Consc.	0.030	0.072	0.043	-0.060	-0.145	0.069	0.053	0.139	0.057
Avg. TL ON Int. Mot.	0.029	0.074	0.044	0.030	0.078	0.072	0.019	0.047	0.057
Avg. TL ON Ext. Mot.	-0.034	-0.181	0.026	-0.010	-0.054	0.033	-0.053	-0.203	0.041

While the constrained model was consistent with previous models, the unconstrained model showed that the effect of agreeableness on average rater perceptions of transformational leadership was not significant at the $p < .05$ level for males, but was significant for females. A chi-square difference test between the two nested models suggested that constraining the structural parameters to be equal for males and females did not result in a significant decrease in model fit, $\Delta\chi^2(14) = 21.603$, $p > .05$. There is insufficient evidence to suggest that the leader's gender influences the effect of leader ideology, personality, and motivation on perceptions of transformational leadership and effectiveness. Any interpretations of gender differences in the effect of agreeableness on transformational leadership are erroneous and akin to considering a pair-wise comparison following a non-significant omnibus F-test in the ANOVA context.

Relative Organizational Level as a Moderator

We also tested a multiple-group multilevel structural equation model to assess the role of the rater's organizational level relative to the leader being rated as a moderator of the predictive effect of leader ideology, personality, and motivation on perceptions of transformational leadership and effectiveness. Raters were categorically designated as being at an organizational level below the leader they were rating ($n = 30$), at the same level as the rated leader ($n = 159$), above the rated leader ($n = 312$), or unknown ($n = 23$). Thirty-five raters did not indicate their relative organizational status, resulting in missing data. Raters indicating their status as unknown were excluded. Due to sample size, raters below and at the same level were combined into one group ($n = 189$) and contrasted against raters with status levels above the rated leader ($n = 312$), for a total rater-level sample of $N = 501$. All 98 leaders were represented in the sample after exclusion of unknown and missing organization level raters.

The constrained organizational level model was found to fit well according to a test of exact fit, $\chi^2(68) = 72.883$, $p > .05$; CFI = .997; RMSEA = 0.017, SRMR$_{Within}$ = 0.011, SRMR$_{Between}$ = 0.028. The unconstrained model also was found to fit well according to a test of exact fit, $\chi^2(54) = 52.775$, $p > .05$; CFI > .999; RMSEA < .001, SRMR$_{Within}$ = .001, SRMR$_{Between}$ = 0.026. Structural parameter estimates for the constrained organizational level model and for subgroups are reported in Table 5.

Table 5. Parameter Estimates and Standardized Solutions for the Constrained and Unconstrained Organizational Level Models

Path Coefficient	Constrained			Above			At or Below		
	B	β	SE	B	β	SE	B	β	SE
Rater Level									
EE on TL	1.417	0.608	0.084 *	1.506	0.631	0.116 *	1.321	0.634	0.117 *
Eff ON TL	1.161	0.630	0.063 *	1.272	0.665	0.083 *	1.059	0.635	0.093 *
Sat ON TL	1.108	0.644	0.062 *	1.268	0.696	0.076 *	0.826	0.514	0.101 *
Leader Level									
Avg. EE ON Avg. TL	1.426	0.689	0.108 *	1.627	0.723	0.160 *	1.266	0.672	0.142 *
Avg. Eff ON Avg. TL	1.177	0.701	0.085 *	1.258	0.710	0.129 *	1.110	0.709	0.112 *
Avg. Sat ON Avg. TL	1.150	0.718	0.080 *	1.181	0.712	0.120 *	1.105	0.723	0.107 *
Avg. TL ON Ideology	0.180	0.325	0.044 *	0.177	0.333	0.062 *	0.167	0.280	0.065 *
Avg. TL ON Neuro.	0.122	0.312	0.029 *	0.092	0.247	0.044 *	0.132	0.346	0.039 *
Avg. TL ON Extra.	-0.056	-0.117	0.036	-0.050	-0.110	0.051	-0.073	-0.138	0.051
Avg. TL ON Open.	0.019	0.046	0.030	-0.001	-0.004	0.042	0.033	0.080	0.041
Avg. TL ON Agree.	0.153	0.343	0.033 *	0.149	0.349	0.047 *	0.156	0.327	0.047 *
Avg. TL ON Consc.	0.021	0.055	0.030	0.022	0.059	0.042	0.010	0.025	0.043
Avg. TL ON Int. Mot.	0.045	0.116	0.031	0.042	0.112	0.043	0.054	0.126	0.045
Avg. TL ON Ext. Mot.	-0.054	-0.237	0.019 *	-0.025	-0.113	0.026	-0.086	-0.343	0.028 *

Whereas the constrained gender model was consistent with previous models, there is one notable distinction between the constrained organizational level model and the previous models. When the sample was reduced by those raters who indicated their relative level as unknown or did not indicate their level, external motivation was found to have a negative effect on rater perceptions of transformational leadership (β = -0.237, p < .05). That is, leaders who self-reported themselves to be more externally motivated were less likely to be perceived as transformational leaders. However, as with the gender model, there was a discrepancy in this effect across subgroups. The effect of external motivation on rater perceptions of transformational leadership was not significant at the p < .05 level for raters above the leader's organizational level, but was significant for raters at or below the leader's level. However, as with the gender model, a chi-square difference test between the two nested models suggested that constraining the structural parameters to be equal for both subgroups did not result in a significant decrease in model fit, $\Delta\chi^2(14)$ = 20.108, p > .05. Thus, there is not sufficient evidence to suggest that the organizational level of the rater relative to the leader being rated differentially influences the effect of external motivation or any other effect in the model.

Discussion

Interpretation of Results

The results of this study provide a general view of each leader's ideology and a view of raters' perceptions of leaders' behaviors. This knowledge of leader behavior, personality, and motivation provides valued feedback for leadership development initiatives as well as for organizational leadership effectiveness.   In general, this has been the traditional way to assess leader behaviors for future growth and development.

Leaders' ideology relates to their actual behaviors as rated by followers. This means that the more transformational leaders evaluate themselves across the transformational leadership dimensions, the higher they and others will evaluate their effectiveness. This has implications for leadership development initiatives, which have historically been criticized for eliciting more knowledge transfer than substantive behavioral change. But results of this study indicate that with higher levels of transformational ideology (operationalized through self-reported behavior), there will concurrently be greater effectiveness as rated by self and others.

Earlier work reported that higher degrees of leadership education lead to increased self-reported positive leadership behaviors, consistent with the results of this study (Avolio, 1994). Leaders' personality dimensions of neuroticism and agreeableness were positively related to observed transformational leadership behaviors. This means that as student leaders report higher levels of neuroticism (easily excitable, emotionally volatile) they tend to be rated higher in transformational leadership. It appears that in college-aged leaders, emotional energy and volatility are highly conducive to positive ratings across most positive forms of leadership. Student leaders' levels of agreeableness also resulted in proportionately higher positive leadership ratings, indicating that the more agreeable students are perceived to be (easy to get along with, uncritical), the more transformational they will be rated. This indicates a substantive link between personality and leadership that has far reaching implications for recruitment of transformational leaders. Students high in neuroticism and agreeableness would be more likely to exhibit higher levels of transformational leadership. Organizations seeking transformational leaders may recruit individuals with higher levels of neuroticism and agreeableness personality dimensions.

While the self-ratings and follower-ratings of leaders' behaviors are traditionally used and analyzed with conventional methods, a cross-level analysis provided more precise analysis. In this study, two outcomes produced results that explain how a leader's behaviors are perceived when measuring their abilities through a single assessment. Leaders' levels of neuroticism and agreeableness (NEO-PI) were perceived by raters as more transformational. In constrained models to test gender and organizational relationship level as moderators, the outcomes suggested the potential for differences in followers' perceptions related to a leader's gender or organizational relationship level, and thus the potential for leaders to be perceived as transformational. The modeling constrained and unconstrained models used for this study were hampered by some raters' omission of demographic data, thus reducing the N and constraining the analysis.

Limitations and Future Research

This study was limited by the omission of demographic data which would have allowed for additional multi-level analysis. The researchers could have used basic correlation and regression models for the outcome, and had we done this, this study would have resulted in findings that mirrored similar studies of this kind. However, the more rigorous analytic techniques used helped discriminate between within-group and between-group differences and more precisely identified relevant relationships. Many of the results would not have been discernible using less appropriate statistical techniques, such as simple correlations and regression analyses. This study demonstrates an advantage of utilizing both multiple assessments of leader behavior and multi-level data analyses for a richer understanding of the interaction between the leader's self-knowledge (ideology) and followers' perceptions of leaders as transformational.

Additionally, research in the area of student leadership is inherently complex and categorically elusive to measure. Most student leaders have short track records from which to develop their leadership ideologies and from which raters can develop multiple observations of student leaders' behaviors. As a result, raters may be basing leadership evaluations on less information and limited interactions with student leaders than might be found in most field studies in organizational settings, where leader-member relationships being evaluated may encompass years of interactions to inform ratings.

The results of this work may not generalize to all populations. The primary reason for this limited generalizability is that college-aged leaders typically have served in leadership positions for shorter time frames than typical field business leadership populations. The longer duration provides more opportunities for sustained observations and, consequently, more useful field data than are attainable in college student leadership settings. Future work should collect data from young adults in early career settings, where possible, to continue the inquiry of the antecedents of young adult leadership with richer field data.

This study may be replicated with more useful demographic data for multi-level analysis. More diverse populations should be used to test if these results will replicate with other sample populations. The sample population in this study was fairly homogeneous, so a field study utilizing a student population from other geographic regions or utilizing non-student populations would be valuable for confirming these results. Future work may continue to test the antecedents of transformational leadership in young adults, efforts that should prove salient to both the student affairs and leadership fields.

Conclusions

This study investigated young adults' personality, motivation, and leadership ideology as antecedents of their transformational leadership in a multi-level analysis. Results demonstrated some relationships between leaders' personality and ideology and their transformational leadership behaviors discerned by others.

These results report the first antecedent model tested for a student leadership population and thus opens a salient line of inquiry. Future research may build upon this work by testing similar variables with varied populations, but also may test other variables to ascertain the best antecedent models of transformational leadership among young adults. Such work will contribute to the student affairs and antecedent-to-leadership literature.

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