

Re-examining the Validity of the Full-Range Leadership Models

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Abstract: Ethiopia converges with other cultural groups on certain values and diverges on some others (Hofstede, 2001). As a result of the cultural divergence, it was hypothesized that the psychometric properties of the Multifactor Leadership Questionnaire and the leadership models are likely to vary in the Ethiopian context. For that purpose, six hundred twenty seven academic staff from three public universities located in the National Regional State of Tigray were selected using stratified sampling. The participants rated their immediate leader's leadership practices using the Multifactor Leadership Questionnaire trimmed by Avolio, Bass, and Jung (1999). The participants also rated their own organizational commitment using the Meyer, Allen, and Smith (1993) revised Organizational Commitment Scale. Confirmatory factor analysis of the eight competing models showed that the data fit best to a nine-factor model. Correlational analysis indicated that the five components of transformational leadership, contingent reward, and management-by-exception active had strong relationships ($r > .7$) with each other, which indicates the existence of higher-order factors. The search for higher-order factors again produced a two-factor leadership model (active and passive) with a good fit. The criterion validity of the nine factors were also tested. Correlational analysis showed that with the exception of active management-by-exception, the other factors showed functional universality as proposed by Bass (1997). Conclusions, implications, limitations, and future research directions were discussed

Keywords: Leadership, leadership model, Multifactor Leadership Questionnaire, and Criterion validity.

INTRODUCTION

By reviewing several leadership studies, Bass (1997) developed a conceptually distinct eight-dimension leadership construct. This leadership construct is comprised of four transformational (idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration), three transactional (contingent reward, active management-by-exception, and management-by-exception passive), and one non-leadership (laissez-faire) behaviors. Based on the review, Bass proclaimed (1) the structure and organization of the multifactor leadership model is the same over cultures (systematic behavioral universal), (2) even though the magnitude of enactment varies across cultures, people's prototype and ideal leadership is transformational (Variform universal), and (3) the pattern of relationships of the

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various leadership styles with outcome variables is always constant over cultures (Functional universal). Bass claimed that his assertions were supported with empirical evidence collected from all over the world except Antarctica.

STATEMENT OF THE PROBLEM

Although Bass claimed that he had supported his assertions with worldwide collected empirical evidence, reviews of the available leadership literature by House and Aditya (1997) showed that 98 percent of the leadership theories and the empirical evidence are American in character and are likely to be influenced by the US American set of values. The US values are characterized by high individualism, masculine, low power distance, weak uncertainty avoidance, and short term orientation (Hofstede, 2001). Ethiopia, in which this leadership study was conducted, is located in the East Africa whose cultural values are characterized by collectivism, high power distance, low uncertainty avoidance, feminine, and short-term orientation (Hofstede, 2001).

From these pieces of evidence, one can conclude that Ethiopia and the US converge on weak uncertainty avoidance and short-term orientation. Regardless of these convergences, however, Ethiopia and the US diverge on individualism-collectivism, masculinity-femininity, and high-power distance- low power distance. Hence, these differences are likely to cause variation in leadership values between the two countries. In addition, Scott (2007) argued that theories and research findings are likely to be affected by data sets (times, samples, and contexts), investigators (data collector/analyst), theories and the methodologies used. In line with these arguments, though they are not obtained in Ethiopia, empirical findings show inconsistencies in (a) factor structure (Antonakis, 2001; Antonakis, Avolio, & Sivasubramaniam, 2003; Avolio, Bass, & Jung, 1995; Avolio et al., 1999; Bycio, Hackett, & Allen, 1995; Den Hartog, Van Muijen, & Koopman, 1997; Dorfman, Howell, Hibino, Lee, Tate, & Bautista, 1997; Hater & Bass, 1988; Lievens, Van Geit, & Coetsier, 1997), (b) frequency of use (Avolio, et al., 1995; Avolio, et al.; 1999; Humphreys, 2001; Peter, 2015; Saqer, 2009), and (c) patterns of relationship (Javaid & Mirza, 2013; Lo, Ramayah, & Min, 2009; Mester, Visser, Roodt, & Kellerman, 2003; Rao & Girma, 2017; Saqer, 2009) of the various leadership styles.

Though the research findings show inconsistencies, many researchers and trainers in Ethiopia are employing the MLQ's and the various full-range leadership models for leadership practice evaluation and leadership development with the assumption that the MLQ and the full-range leadership models are universally applicable (e.g., Peter, 2015; Rao & Girma, 2017). The authors of this study argue that, if the leadership models developed in one context are adopted with the assumption that their application is universal, the organizations with different contexts would be dysfunctional. Therefore, in order to minimize such undesirable consequences, this study is intended to investigate the systematic behavioral universal, variform universal, and functional universal of the competing full-range leadership models because, to the researchers' knowledge, no research was done, especially on the systematic behavioral universal in the Ethiopian context.

REVIEW OF RELATED LITERATURE

Systematic Behavioral Universal (Factor Structure Invariance)

Bass (1997) asserted that the structure and organization of the multifactor leadership model is the same over cultures. However, Hofstede (2001) argued that each cultural group has its own mental programming which may result in a different factor structure of each constructs. Consistent with the Hofstede's argument, Dorfman and his associates (1997), in their study of 'the commonalities and differences in effective leadership processes across cultures in the Western and Asian countries', tested the factor structure invariance of six leadership scales, however, two of the six leadership scales were not able to replicate their original factor structures.

In addition to this, though it is not cross-cultural, Lievens and his associates (1997) tested the Bass and Avolio (1989) three-factor leadership model using data collected with the German version of MLQ Form 8Y in various private and public firms in the Netherlands. Lievens and his associates found a four-factor model (transformational, contingent reward, management-by-exception active, and management-by-exception passive), which is different from the Bass and Avolio's (1989) three alternative leadership models. On the other hand, using exploratory factor analysis, Den Hartog and his associates (1997) administered the same instrument in the same country and in similar settings. They found a three-factor model: transformational, transactional, and laissez-faire which is similar to the Bass and Avolio (1989).

Another study conducted in Canadian health services by Bycio and his associates (1995) tested the Bass (1985) seven factors model using the MLQ (Form 1). They found two plausible models: a five-factor model (charisma, intellectual stimulation, individualized consideration, contingent reward, and management-by-exception) and a two-factor model (active and passive), which are different from Bass (1985) seven factor model.

Besides the above studies, using data collected dominantly from US participants with the 1990 MLQ-Form 5X, Avolio et al. (1999) tested the factor structure invariance of the Bass's (1985, 1988) proposed models. The authors found a six-factor model: charisma/inspirational, intellectual stimulation, individualized consideration, contingent reward, active management-by-exception, and passive-avoidant leadership. Here, passive management-by-exception, which was part of the management-by-exception in Bass (1988) was factored with laissez-Faire leadership.

Antonakis and his associates (2003), in turn, tested the Bass and Avolio (1997) proposed nine-factor model using largely homogenous business samples with the 1990, MLQ-Form 5X in the USA. The study found a factor structure which fits to the proposed model.

The aforementioned empirical findings indicated that the factor structures of the full-range leadership models vary as the culture, settings, respondents, form of measurement instrument, and researchers vary. Hence, this study is intended to investigate whether the factor structures proposed by the authors of the various full-range leadership models vary in the Ethiopian context.

Variform Universal of the Hierarchy of the Leadership Factors

Bass (1997) claimed that even though the frequency of use of the various leadership factors vary across cultures, people's prototype and ideal leadership is transformational, followed by contingent reward, management-by-exception active, management-by-exception passive and laissez-faire leadership successively. Like any behavior, the pattern of use of the leadership factors is likely to be affected by the situational factors. For example, since leaders in high power distance culture are allowed to enjoy special privileges (Gutterman, 2010; Farh & Cheng, 1999), transformational leadership which influences followers by transcending self-interest for the good of others (Bass, 1997) is less likely to be implemented in high power distance culture like Ethiopia. Due to the special privileges that leaders in high power distance culture are to enjoy, when the collective values contradict with the high power distance values, the high power distance values are likely to be given priority. For example, Ethiopia in which collective and high power distance societal cultures prevail, practical experiences witness that best food, drinks, and clothing are given to a husband who is considered as the symbolic leader of the home, not for children or a wife.

In the same vein, idealized influence in which the leader influences the followers by setting the example (Bass, 1997) is likely to impede the special privileges that leaders in high power distance culture enjoy. For this reason, leaders in the high power distance culture of Ethiopia are less likely to set the example for the shared vision than leaders in the low power distance culture.

Since leaders in high power distance culture are seen as omnipotent (Farh & Cheng, 1999), inspirational motivation leadership which influences the followers by articulating the organization vision (Bass, 1997) is likely to expose the leader's incompetence which, in turn, results in decrease of followers' respect and obedience to the leader. To get rid of such undesirable consequences, leaders in high power distance culture are less likely to articulate the shared vision than leaders in low power distance culture.

Leaders with intellectual stimulation allow followers to question the status quo and experiment the existing organizational operations, policies, assumptions, rules, and procedures (Avolio, et al., 1999). In high power distance cultures (like Ethiopia) organizational operations, policies, assumptions, rules, and procedures are designed by the individual in power (Gutterman, 2010; Farh & Cheng, 1999) and subordinates are expected to express appreciation for what the leaders do (Bochner & Hesketh, 1994). Due to the existence of unequal power in the high power distance culture of Ethiopia, leaders are less likely to tolerate followers' challenges. As a result, followers are less likely to challenge the status quo which is one component of transformational leadership.

Leaders with individualized consideration leadership style recognize their followers' needs and strength and develop them to their fullest potential (Bass, 1997). Due to its responsiveness to individual interest, individualized consideration is likely to be more prevalent in individualist cultures than in collectivist cultures like Ethiopia.

In addition to the cultural influence, the economic philosophy and the management tool followed by a country, the structure of the organization, the characteristics of the task and the employees are likely to influence the prevalence of transformational leadership.

Economic Philosophy: In 1991, a free market economy was introduced in Ethiopia. The free market economy was developed in the individualist, masculine, low uncertainty avoidance, and small power distance culture of the US (Hofstede, 2001). The low power distance organizational culture is likely to reduce the distance between the leader and the followers. This, in turn, is likely to increase leaders' willingness to articulate an inspiring vision and allow followers to challenge the status quo which are features of the transformational leadership.

Management Tool: In addition to the free market economy, the Ethiopian Government has also introduced a management strategy called Business Process Reengineering (BPR) in all government organizations (Belete, 2007) in 2008. The BPR provides workers autonomy to make choices and decisions (Belete, 2007; Hammer, 1996). According to George and Jones (1997), leaders who give autonomy to their followers trust them and delegate responsibility. For that reason, they are more likely to use transformational leadership.

Organizational Structure: Educational institutions are characterized by tight and loose structures (Somech & Optlatka, 2015). According to Somech and Optlatka, though educational leaders use tight structure of control to move students from grade to grade in a uniform manner; in the provision of services, they usually use the loose structure of control. Podsakoff, MacKenzie, Paine, and Bachrach (2000) showed that transformational leadership is positively related to discretion. Podsakoff and his associates also found association between discretion and loose structure of control. This implies that in the teaching-learning process, leaders are likely to use transformational leadership.

Nature of the Task: Somech and Oplatka (2015) described teaching as an uncertain and boundless occupation that is not restricted to pedagogical spheres. The authors argued that the boundless nature of teaching makes strict control difficult and is likely to use loose management and supervision (i.e., transformational leadership).

Characteristics of Employees: Instructors in the higher education institutions are relatively competent. Ivancevich and Mattenson (2002) noted that if the employees are competent, they are likely to value leaders who apply delegating leadership (i.e., transformational leadership). As a result, the instructors of the higher education institutions are likely to value leaders who use transformational leadership.

Leaders who apply contingent reward clarify what the followers need to do to be rewarded for their effort (Bass, 1997). Like the transformational leadership, contingent reward leadership style is also likely to be affected by the situational factors. For example, in collectivist culture, success and failure are assumed to be shared (Hammer, 1996). As a result, individually focused contingent reward is less likely to be employed in collectivist culture like Ethiopia. Moreover, contrary to the societal culture of Ethiopia, the economic development of the country is likely to increase the value of the employees to the leader's use

of the contingent reward leadership. Maslow (1970) cited in Wahba and Bridwell (1976) argued that a higher level need emerges after the gratification of the lower level needs. Ethiopia is one of the least developed countries (United Nations, 2017). Thus, survival of life may be the priority need of the society. As a result, contrary to the culture, leaders who provide the physiological needs (lower level needs) are likely to be valued over those who provide the psychological needs (higher level needs). This argument is also supported by the Amharic proverb “misgana kis aygebam” to mean “thank-you will not fill the pocket”.

In a collectivist and high power distance society, norms are expected to be respected and leaders are expected to take a measure to correct followers who deviate from the norms (Gutterman, 2010). As a result, management-by-exception active which reacts before a problem gets serious is more likely to be displayed in collectivist and high power distance cultures like Ethiopia than in individualist and low power distance culture like America. Consistent with this argument, Jogulu (2010) found that Malaysian managers who have collectivist and high power distance cultures showed more transactional leadership than Australian managers who have individualist and low power distance cultures. On the contrary, Jogulu found that Australian managers used transformational leadership more than Malaysian managers do. Saqer (2009) found active management-by-exception as the most frequently used leadership style in Palestine. Moreover, as noted by Antonakis (2001), active management-by-exception was frequently used in high-risk situations, unstable conditions, military platoon, fire departments, majority male leaders, and low-level leaders. Practical experiences witness that most of the leaders in the Ethiopian universities are males. Thus, active management-by-exception leadership is most likely to be valued currently in the Ethiopian universities.

Compared to the low power distance culture, leaders in high power distance culture like Ethiopia are expected to be reserved and create distance from their followers. If a leader fails to exhibit these behaviors, practice indicates that the leader is likely to be labeled as “kibrebis” to mean “one who doesn’t deserve respect”. Peter (2015), in his study of ‘the relationship between leadership styles and job satisfaction of Gambella College of Teachers Education and Health Science academic staff’, found contradictory findings. Leaders perceived as they practice more frequently transformational leadership followed by transactional and then laissez-faire leadership whereas subordinates did the other way round. The aforementioned discussion indicates that the use of the various leadership styles is affected by a number of factors. Thus, this study is interested in investigating whether the pattern of use of the full-range leadership styles proposed by Bass (1997) differs in the Ethiopian context.

Functional Universality of the Leadership Factors

Factors which have distinguishable characteristics have different antecedents and consequences (Meyer & Allen, 1997). As a result, in addition to the measures of goodness of fit, many researchers used to test the functional universality of a leadership factors by testing their relationship with effectiveness measures such as job satisfaction (AL-Hussami, 2008; Avolio, et al., 1995; Antonakis, 2001; Antonakis, et al., 2003), extra effort (Avolio, et al.,

1995; Antonakis, 2001; Antonakis, et al., 2003), efficiency (Avolio, et al., 1995; Antonakis, 2001; Antonakis, et al., 2003), organizational commitment (Javaid & Mirza, 2013; Rao & Girma, 2017), organizational citizenship behavior (Khan, Ghouri, & Awang, 2013; Podsakoff, MacKenzie, Paine, & Bachrach, 2000) and others.

In Aksum University, one of the universities in which this study was conducted, 167 instructors (95 with formal resignation and 72 without formal resignation) left the University between July 2013 and June 2014 (Document analysis of the University). This situation is an indicator of poor organizational commitment. Hence, in order to solve the existing problem on the way, the functional universality of the leadership styles was tested using organizational commitment.

Meyer and Allen (1991) defined organizational commitment as a psychological state that binds the employee to continue membership in the organization. The Meyer and Allen conceptualization of organizational commitment has three components: affective, continuance, and normative. According to Meyer and Allen (1991), affective commitment refers to “the employee's emotional attachment to, identification with, and involvement in the organization” (p. 67). The authors have also defined continuance commitment as “awareness of the costs associated with leaving the organization” (p. 67). Meyer and Allen have also operationally defined normative commitment as “a feeling of obligation to continue employment” (p. 67). This implies that employees with affective commitment continue employment in an organization because they like it; employees with normative commitment, on the other hand, continue employment because they feel moral obligation; and employees with continuance commitment stay in the organization because they are aware of the costs associated with leaving the organization.

In his Ph.D thesis on ‘the effects of leaders’ emotional intelligence, leadership styles, and instructors’ organizational commitment on instructors’ organizational citizenship behavior’, Goitom (in progress) tested the factor structure of the Meyer, Allen, and Smith (1993) revised Organizational Commitment Scale and found a two factor structure: affective-normative commitment and continuance commitment. In Goitom’s and other researchers’ findings, affective commitment and normative commitment had more positive correlation with measures of leadership effectiveness than continuance commitment (Lo et al., 2009; Nazir et al., 2016; Saqer, 2009). For this reason, the present study used the affective-normative commitment as measures of functional universality.

Transformational leadership (which builds trust, acts with integrity, inspires others, encourages innovative thinking, and coaches followers) is more likely to create positive affection on followers towards the leader, the work environment, and the organization than leadership which does not do such things. The positive affection towards the work environment and the organization, in turn, is likely to increase the followers’ commitment to the organization. Leaders may also attempt to motivate their followers to be committed to the organization through the administration of rewards. When leaders provide contingent rewards in the form of praise, award, and social approval that is based on employee performance, they are likely to be perceived as fair. Treating employees fairly is likely to motivate them to be

committed to the organization. The fairly treated employees may wish to reward their leaders by being committed to the organization. Thus, leaders who apply contingent reward are likely to promote employees' commitment to the organization.

In a collectivist and high power distance society where norms are expected to be respected and leaders are tolerated to induce a sense of fear in followers who deviate from the norms (Guttermann, 2010), leaders who apply management-by-exception for their employees' poor performance may not develop hatred or a feeling of indifference towards the leaders. However, the time in which leaders administer contingent punishment may have an important impact on the employees' attitude to the leader and the organization. For example, in high power distance cultures, leaders who apply management-by-exception active (correct) just before the problem is surfaced, may be considered as a moral obligation of the leader and may not develop a feeling of hatred or indifference. Therefore, leaders who apply management-by-exception active are likely to motivate employees to engage in the attainment of organizationally relevant goals. In contrast, if the leaders administer contingent punishment after the problem gets serious (management-by-exception passive), the followers may consider it immoral and may develop hatred towards the leader and the organization. As a result, leaders who apply management-by-exception passive leadership are likely to have more negative effect on the employees' commitment than those who apply management-by-exception active. Apart from this, leaders who avoid responding when needed are likely to develop hatred in their employees.

In addition to the direction of relationship, the leadership styles also vary in their magnitude of relationship with the outcome variables. For example, despite their positive effect on followers' commitment to the organization, transformational leadership motivates employees to perform beyond expectation while contingent reward leadership motivates employees to meet the established standards (Bass, 1997). As a result, transformational leadership is more likely to create commitment to the organization than contingent reward leadership can.

Similarly, since employees who have received management-by-exception active have no positive motive, leaders who practice contingent reward are more likely to create commitment to the organization than leaders who apply active management-by-exception. In contrast, since administering management-by-exception active is considered morale in high power distance cultures (Guttermann, 2010), management-by-exception active is less likely to create poor commitment than management-by-exception passive.

However, as it was discussed in the variform universal section, since the value of a leadership style is a function of various situational factors such as culture, economic philosophy and management tool followed by a country, structure of the organization, characteristics of the task and the need level of the followers, risk level of the task, stability conditions, sex, level of leadership, and so on; the effect of the leadership style on employees' commitment may vary from one situation to another. For this reason, this study is interested to explore whether the pattern of relationship between the leadership factors and affective-normative commitment in the Ethiopian context is consistent with what was proposed by Bass (1997).

Patterns of Relationship of the Full-Range Leadership Factors

In the functional universal section of this article, it was argued that transformational leadership motivates employees to perform beyond expectation while contingent reward leadership motivates employees to meet the established standards (Bass, 1997). Hay/McBer (2005) argued that measures that predict the same construct are assumed to have intercorrelation with each other. Since it was argued that the components of transformational leadership are more likely to correlate with organizational commitment than the contingent reward and the other leadership styles, by the rule of transitivity, the components of transformational leadership are more likely to correlate with each other than the contingent reward and the other leadership factors. In line with this argument, Bass (1997) argued that transformational leadership styles have higher correlation with each other than they have with contingent reward, near zero correlation with management-by-exception and moderate to high negative correlation with laissez-faire Leadership.

Contrary to the Bass's (1997) argument, the authors of this article argue that the pattern of relationships of the various leadership factors of the full-range leadership model with each other are likely to be affected by their patterns of use. The pattern of use of the leadership factors are also likely to be affected by the various situational factors. For example, inducing management-by-exception active for employees' poor performance is acceptable in collectivist and high power distance cultures while it is not in the individualist and low power distance cultures (Gutterman, 2010). This means management-by-exception active is likely to be positively valued and frequently used in collectivist and high power distance cultures. Hence, management-by-exception active is likely to have positive relationship with the other full-range leadership factors such as the components of transformational leadership and contingent reward. Thus, this study is also interested to investigate whether the pattern of correlation among the full-range leadership factors, proposed by Bass (1997), vary in the Ethiopian context.

To sum up, this study is intended to investigate the factor structure invariance, pattern of use, and the relationship of the various forms of leadership styles with each other and with organizational commitment in some selected Ethiopian public universities.

The researchers decided to study these relationships for the following reasons. First, Ivancevich and Mattenson (2002) argued that leadership accounts for more variance in performance than any other variables that was studied. More specifically, Gemechis and Ayalew (2012) claimed that leadership was one of the major factors affecting higher education institution's performance. Mulford, Silins, and Leithwood (2004), on the other hand, argued that leadership influences the way instructors organize and conduct their instruction, their educational interactions with students, and the challenges and expectations instructors' place on their students, which in turn influence students' academic participation, engagement, and achievement. Second, previous research findings show inconsistency in the factor structure, relative magnitude, and patterns of relationships of the leadership styles with each other and with the outcome variable. Third, to the researchers' knowledge, no research was done on the factor-structure and item-functions of the multi-factor leadership

questionnaire and the leadership models in the Ethiopian higher institutions context. Thus, examination of the validity of the multi-factor leadership questionnaire and the leadership models is of paramount importance for accurately measuring the practice of the universities' leaders. Therefore, the present study is aimed at empirically answering the following research questions:

1. What is the factor structure of the Multifactor Leadership Questionnaire in the present samples?
2. What is the hierarchy of the leadership factors in the present samples?
3. What is the pattern of relationship between the various leadership factors and affective-normative organizational commitment in the selected higher education institutions?
4. What is the pattern of relationship between the various leadership factors in the selected higher education institutions?

SIGNIFICANCE OF THE STUDY

Most leadership researches have largely been conducted in North American culture (House & Aditya, 1997; Spreitzer, Perttula, & Xin, 2005). However, research shows behavior is socially constructed and a behavior that originated in the western cultures may not be generalizable to leaders with different cultural orientations (Hofstede, 2001). Hence, the present study is believed to contribute to our knowledge of the full-range leadership measures and models that are similar to Ethiopian context and that are limited to the cultures where the leadership models were developed. Moreover, nowadays, globalization is rapidly increasing the cultural diversity of workforces. Thus, knowledge of leadership behaviors that are culture- universal and -specific, in turn, is assumed to enhance leader-employee interactions across cultures. The researchers also believe that the results of this study would be helpful to all concerned bodies such as department heads, deans, vice presidents, presidents, management boards, regional government, and Ministry of Education to get relevant information about the status of the target universities' leadership practices so as to properly intervene and develop appropriate leadership styles.

METHOD

This section describes the research design, research participants, measuring instruments used, data collection procedure, and a description of the statistical procedures to be used to analyze the obtained data.

The Research Design

Since the researchers have no control of the independent variables, the research design that was used in the present study is non-experimental research design. From the various types of non-experimental research design, survey research method was used.

Research Setting

The study was conducted in the three public universities located in Tigray National Regional State (Aksum University, Adigrat University, and Mekele University). These universities were selected for two reasons. First, the problem was observed in one of these universities (i.e., Aksum University). Second, since the universities are located in the same region, they were assumed to have similar problems.

Participants

In the three universities, there were 3015 academic staff (765 in Aksum University, 522 in Adigrat University, and 1800 in Mekele University) on duty. In factor analysis, in order to get adequate factorability ($r \geq .6$), the number of participants need to be at least 10 times the number of variables (Ho, 2006). The Multifactor Leadership Questionnaire has 36 items. As a result, in order to get adequate factorability, the number of participants need to be at least 360. However, to get .9 and above sampling adequacy test, the researchers decided to include more than 35 percent of the academic staff on duty (268 from Aksum University, 183 from Adigrat University, and 630 from Mekele University) using proportional stratified sampling. However, due to teaching loads and additional community service responsibilities that the instructors had, it was difficult to get all the academic staff at their offices. As a result, only 627 academic staff (35% Aksum, 33% Adigrat, and 10% Mekele) responded appropriately to the questionnaires in the study.

Data Gathering Instruments

Measure of Leadership: The researchers used the Multi-Factor Leadership Questionnaire (MLQ) modified by Avolio and his associates (1999) to collect data from the instructors about their immediate leaders' leadership practices. The Questionnaire has 36 items. The frequency of the leadership scale varies from 0 "not at all" to 4 "frequently, if not always". The internal consistency was above .70 for all subscales except for active management-by-exception and its factor loadings range from .53 to .82 (Avolio, et al., 1999).

Measure of Leadership Effectiveness: As it was stated earlier, in his Ph.D thesis of 'the effects of leaders' emotional intelligence, leadership styles, and instructors' organizational commitment on instructors' organizational citizenship behavior', Goitom (in progress) tested the factor structure of the Meyer, Allen, and Smith's (1993) revised Organizational Commitment Scale and found a two factor structure: affective-normative commitment (7 items) and continuance commitment (5 items). The items are scored on a 7-point scale ranging from 1 "Strongly Disagree" to 7 "Strongly Agree". In Goitom's and other researchers' findings, affective commitment and normative commitment had more positive correlation with measures of leadership effectiveness than continuance commitment (Lo and his colleagues, 2009; Nazir and his colleagues, 2016; Saqer, 2009). For this reason, the present study used the affective-normative commitment as measures of functional universality.

Data Collection Procedures

The questionnaires were administered for pilot study in English to instructors of the two colleges of teacher education in Tigray National Regional State (Abiyi Addi and Adwa Colleges of Teacher Education). Sixty-four percent of the participants had Master's degrees. However, problems of understanding were observed in some of the items. As a result, to avoid the observed misunderstandings, the questionnaires were translated into Amharic and they were administered in the three universities by the first author. In the questionnaires, the objective of the study and its anonymity were described and participants were requested to evaluate their own organizational commitment and their immediate leader's leadership practices. During the administration, participants who requested explanation about the questionnaire were given clarifications.

Data Analysis Techniques

To investigate the factor structure invariance and the relevance of the items to the Ethiopian context all of the items of the MLQ measurement scale were subjected to confirmatory factor analysis and the fit of the measurement model to the data was indicated by a number of goodness-of fit indices. The patterns of relationship of the various leadership factors with each other and with affective-normative organizational commitment were tested using Pearson correlation. Moreover, Cronbach alpha measure of reliability was used to test the internal consistency of the measurement items. Furthermore, mean scores and standard deviations were computed to describe the patterns of use of the various leadership styles.

RESULTS

This section presents the factor structure of the MLQ, their frequency of use, and their patterns of relationship with each other and with the outcome variable in the Ethiopian context.

Factor Structure of the Multifactor Leadership Questionnaire

Before testing the factor structure invariance, the suitability of the data for factor analysis was assessed using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. The level of the KMO measure of the MLQ was found to be .98 which is above the required .6 level of sampling adequacy (Tabachnick & Fidell, 2013) and was therefore acceptable. The items efficiency to measure a single latent variable, in turn, was tested using Bartlett's test of sphericity which was also statistically significant $\chi^2_{(630)} = 17846.311, p < .001$. This means the items are efficient to measure a single latent variable.

Following the sampling adequacy and the items efficiency tests, confirmatory factor analysis was conducted on eight competing models using Maximum likelihood estimation method.

The eight competing models are (1) the Avolio and his associates' (1999) unidimensional model, (2) the Bycio and his associates' (1995) two-factor leadership model: active and passive; (3) the Den Hartog and his associates' (1997) three-factor leadership model:

transformational, transactional, and Laissez-faire; (4) the Howell and Avolio's (1993) five-factor model: transformational, contingent reward, active management-by-exception, management-by-exception passive and laissez-faire; (5) the Avolio and his associates' (1999) six-factor leadership model: charisma/inspirational, intellectual stimulation, individualized consideration, contingent reward, active management-by-exception, and passive-avoidant; (6) the Avolio and his associates' (1999) seven-factor leadership model: charisma/inspirational, intellectual stimulation, individualized consideration, contingent reward, active management-by-exception, management-by-exception passive, and laissez-faire leadership; (7) the Bass's (1997) eight-factor leadership model: idealized influence, inspirational motivation, intellectual stimulation, individualized consideration, contingent reward, active management-by-exception, management-by-exception passive, and laissez-faire leadership; and (8) the Antonakis and his associates' (2003) nine-factor leadership model: idealized influence attributes, idealized influence behavior, inspirational motivation, intellectual stimulation, individualized consideration, contingent reward, management-by-exception active, management-by-exception passive, and laissez-faire.

The ratio of chi-square to degrees of freedom (χ^2/df), Root Mean Square Error of Approximation (RMSEA), Normed Fit Index (NFI), Relative Fit Index (RFI), Incremental Fit Index (IFI), Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), Akaike Information Criteria (AIC), and Expected Cross-Validation Index (ECVI) were used as measures of goodness of fit indices.

Table 1

Goodness-of-Fit Results for Test of Factor Structure Invariance

	χ^2/df	NFI	RFI	IFI	TLI	CFI	RMSEA	AIC	ECVI
Model 1. One factor	4.98	.838	.828	.866	.858	.866	.080	3171.134	5.066
Model 2. Two factors	3.41	.889	.882	.919	.914	.919	.062	2241.805	3.581
Model 3. Three factors	4.30	.861	.851	.889	.882	.889	.073	2762.641	4.413
Model 4; Five factors	3.10	.901	.893	.931	.925	.930	.058	2044.475	3.266
Model 5. Six factors	2.91	.916	.908	.944	.938	.943	.055	1722.699	2.752
Model 6. Seven factors	3.03	.905	.895	.934	.927	.934	.057	1993.010	3.184
Model 7. Eight factors	2.67	.917	.908	.947	.940	.946	.052	1782.250	2.847
Model 8: Full nine factors	2.50	.923	.913	.952	.946	.952	.049	1684.989	2.692
Recommended values	2-5	>.90	>.90	>.90	>.90	>.90	<.080	Lowest Value	lowest value

From the eight competing Leadership Models, it would seem that the nine-factor leadership model fits the data best in all measures of goodness of fit indices. Following the nine-factor leadership model, the eight- and the six- factor models in a descending order fit the data better than the other models.

However, one item from the management-by-exception passive, that was described as "... shows that s/he is a firm believer in 'if it isn't broke, don't fix it'" had factor loading .269, which is below the minimum required level (.3).

Internal consistencies, Pattern of Use, and Pattern of Relationships of the Various Leadership Styles with each Other and with the Affective-Normative Commitment

Table 2 indicates that eight of the nine dimensions of the MLQ measurement model exceeded the Nunnally's (1978) recommended internal consistency level $\geq .70$. An examination of Table 2 also indicates that the instructors of the three universities believed that their immediate leaders display inspirational motivation ($M = 2.63$; $S = 1.059$), idealized influence attribute ($M = 2.62$; $S = 1.191$), intellectual stimulation ($M = 2.61$; $S = 1.106$), idealized influence behavior ($M = 2.59$; $S = 1.119$), contingent reward ($M = 2.50$; $S = 1.127$), management-by-exception active ($M = 2.47$; $S = 1.022$), individual consideration ($M = 2.28$; $S = 1.095$), management-by-exception passive ($M = 1.685$; $S = .953$), and laissez-faire leadership ($M = 1.42$; $S = 1.047$) in a descending order.

Table 2

Means, Standard Deviations, Internal Consistencies, and Intercorrelations of the Leadership Styles with each Other and with Affective-Normative Organizational Commitment

	Mean	S	IA	IB	IM	IS	IC	CR	MBEA	MBEP	LF	AN
IA	2.62	1.191	(.89)									
IB	2.59	1.119	.859**	(.90)								
IM	2.63	1.059	.790**	.822**	(.89)							
IS	2.61	1.106	.910**	.855**	.832**	(.91)						
IC	2.28	1.095	.777**	.814**	.762**	.788**	(.83)					
CR	2.50	1.127	.797**	.808**	.858**	.822**	.814**	(.88)				
MBEA	2.47	1.022	.845**	.818**	.776**	.879**	.757**	.774**	(.83)			
MBEP	1.685	.953	-.205**	-.134**	-.159**	-.185**	-.030	-.164**	-.094*	(.66)		
LF	1.42	1.047	-.414**	-.392**	-.360**	-.388**	-.286**	-.380**	-.329**	.599**	(.76)	
AN	4.55	1.367	.246**	.237**	.321**	.253**	.211**	.269**	.210**	-.164**	-.246**	(.80)

Note: S = standard deviation, IA = Idealized Attribute, IB = Idealized Behavior, IM = inspirational motivation, IS = Intellectual stimulation, IC = Individual Consideration, CR = Contingent Reward, MBEA = Management-by-Exception Active, MBEP = Management-by-Exception passive and LF = Laissez-Faire, AN = Affective-normative commitment

Patterns of Relationship among the Full-Range Leadership Factors (Vaiform Universal)

To investigate the patterns of relationships among the full-range leadership factors, the strength of relationship among the leadership factors was tested. Accordingly, inspection of Table 2 indicates that idealized influence attribute, idealized influence behavior, inspirational motivation, intellectual stimulation, contingent reward, management-by-exception active, and individual consideration have positive and strong relationship with each other. However, all these have weak and negative relationship with management-by-exception passive and laissez-faire leadership, between which exists moderate and positive relationship.

Functional Universality of the Leadership Factors

With regard to the relationship of the leadership factors with the outcome variable idealized influence attribute, idealized influence behavior, inspirational motivation, intellectual stimulation, contingent reward, and management-by-exception active have equivalent and positive correlation with affective-normative commitment while management-by-exception passive and laissez-faire leadership have negative and low correlation with it (see Table 2).

LePine, Erez, and Johnson (2002) recommended that the dimensions of a construct can be combined if the dimensions have strong relationships with each other and equivalent relationships with outcome variables. Moreover, when the fit of a model is adequate and the factors comprising that model have high correlations, as Marsh and Hocevar (1985) suggested, it might indicate the existence of hierarchical factor(s) which represent the highly correlated factors. Meyers, Gamst, and Guarino (2005), on the other hand, recognized that when the correlation coefficient between two variables is .70 or higher, the interpretations of multiple regression results are likely to be distorted by multicollinearity.

Hence, to explore hierarchical factors which represent the highly correlated factors, following the confirmatory factor analysis of the 8 competing models, the 36 items were subjected to Exploratory Factor Analysis. Examination of the principal Axis Factoring revealed that the 36 items loaded significantly on two more interpretable factor solutions which is similar to Model 2 in the confirmatory analysis. However, in the exploratory factor analysis, one item which was described as "... shows that s/he is a firm believer in 'if it isn't broke, don't fix it'" cross loaded on two factors and another item which was stated as "... fails to interfere until problems become serious" was found to shrink the reliability of factor two. As a result, the two items were excluded from factor two. Finally, a two-factor model that is free from multicollinearity and that has relatively ample discriminant validity was produced.

The first factor consists of items of transformational leadership style, contingent reward and management by exception active and the second factor is composed of items of management-by-exception passive and laissez-faire leadership. In the transformational, contingent reward, and management-by-exception active leadership styles, there is active involvement of the leaders (Bass, 1996). On the contrary, in the management-by-exception passive and laissez-faire leadership, there is poor involvement of the leaders (Bass, 1996). Bycio, et al. (1995) labeled the combination of transformational leadership styles, contingent reward, and management-by-exception active together as "active" and the combination of the second factor which is composed of items of management-by-exception passive and laissez-faire leadership as "passive". As a result, in the current study, the Bycio and his associates' (1995) labels were retained. As Table 3 shows active leadership is more frequently used by the leaders than passive leadership style.

Table 3

Means, Standard Deviations, and Correlations of the Leadership Styles and Affective-Normative Organizational Commitment

Variable	Mean	SD	1	2	3
1 Active Leadership Style	2.53	1.012	(.98)		
2 Passive Leadership Style	1.44	1.008	-.243**	(.83)	
3 Affective-normative	4.55	1.367	.272***	-.191**	(.80)

*Note:****Correlation is significant at the 0.001 and ** Correlation is significant at the 0.01 level (2-tailed). Cronbach's internal consistency reliability (α) appear along the diagonal inside the parenthesis

As can be seen from the zero-order correlations of Table 3, affective-normative commitment has positive and significant correlation with active leadership style ($r = .272$, $p < .01$) while it has negative and significant correlation with passive leadership style ($r = -.191$, $p < .01$). This indicates the existence of discriminant validity among the leadership factors.

Comparing the Original Model against the Modified Model

In order to compare the original against the modified model, both the original and the modified models were subjected to confirmatory factor analysis (see Table 4). This was done by subtracting the smaller chi-square value from the larger one and comparing it with its chi-square distribution at the degrees of freedom equal to the difference between the degrees of freedom of the competing models.

Table 4

Confirmatory Factor Analysis: Model fit indices for the Original and Modified Measurement Scales

	Leadership Models		Chi-Square		Critical Ratio ($\alpha=.05$)	Significance	Decision
	Original	Modified	Difference	df			
χ^2	1768.797	1743.374	25.423	53	79.08	$\chi^2_{cal} < \chi^2_{cr}$	Retain H_0

Note: χ^2_{cal} refers to the calculated Chi-square value and the χ^2_{cr} refers to the critical Chi-square value

Inspection of Table 4 revealed that the chi-square difference is less than its critical ratio. This means the two models do not differ significantly in their goodness-of-fit at the .05 level ($p > .05$). For this reason, the two models were retained as acceptable models.

DISCUSSION

The purpose of this study was to ascertain whether the MLQ factor structure, patterns of use, patterns of relationship with each other and with the instructors' affective-normative organizational commitment in the Ethiopian context are consistent with the ones proposed by Bass (1997). The findings presented in the result section confirmed the following:

- (1) The nine-factor leadership model represented the data better than the eight-factor model proposed by Bass (1997);
- (2) Except the individualized consideration, which was used less frequently than contingent reward and management-by-exception active, the pattern of use of the other MLQ factors was similar with what Bass (1997) proposed; and
- (3) With the exception of management-by-exception active, the pattern of relationships of the MLQ factors with each other and with affective-normative organizational commitment was as proposed by the Bass (1997).

In light of the previous research evidence in the review of literature, the obtained results have been discussed to justify and comment on their support or nonsupport. The discussion follows the research questions raised in the introduction section.

Factor Structure Invariance

The results of the confirmatory factor analyses showed that the nine factor leadership model fits the data best in all measures of goodness of fit indices. The correlational results of this study showed multicollinearity ($r > .7$) among the components of transformational, contingent reward, and active management-by-exception leadership factors which indicates the existence of higher-order factors. The exploratory result of the search for a higher-order leadership model also produced a plausible two-factor leadership model: active and passive.

The nine-factor leadership model is consistent with the results reported by Antonakis (2001), Antonakis et al. (2003), and Avolio et al. (1995) whereas the two-factor leadership model is consistent with the Bycio and his associates' (1995) two-factor leadership model. The present results somehow vary from the Den Hartog and his associates' (1997) three-factor leadership model, the Bycio and his associates' (1995) five-factor leadership model, the Hater and Bass's (1988) six-factor leadership model, the Avolio and his associates' (1999) six-factor leadership model, and the Bass's (1997) eight-factor model. This variation might emanate from various situational factors such as change in culture, economic philosophy followed, management tool employed, structure of the organization, task characteristics, followers' need level, stability conditions, sex, level of leadership, and so on.

Hierarchy of Use of the Leadership Factors (Variform Universal)

The mean scores of the nine-factor leadership model showed that leaders in the three universities used inspirational motivation, idealized influence attribute, intellectual stimulation, idealized influence behavior, contingent reward, management-by-exception active, individual consideration, management-by-exception passive and laissez-faire leadership in a descending order. Here, individual consideration, one of the components of transformational leadership, was used less frequently than contingent reward and management-by-exception active. This finding is partially inconsistent with the Bass's (1997) assertion that stated the components of transformational leadership approach are more frequently used than contingent reward, active management-by-exception, management-by-

exception passive and laissez-faire leadership styles in all cultures. It was also inconsistent with the findings of Avolio, et al., (1995), Avolio, et al. (1999), Avolio, Howell and Sosik, (1999), and Humphreys (2001).

Somewhere else, it was argued that due to the high power distance culture that allows leaders to enjoy special privileges, transformational leadership which transcends self-interest for the good of others is less likely to prevail in the Ethiopian context. However, except individual consideration which was less frequently used than contingent reward and management-by-exception active, the rest components of transformational leadership were the most frequently used.

The high prevalence of the components of the transformational leadership may be due to the introduction of free market economy and the business process re-engineering that encourage leaders to inspire for a better future and instructors to challenge the status quo; the loose structure of control of the educational setting; or the boundless nature of teaching that give discretion to the instructors (Somech & Optlatka, 2015).

Contrary to the assertion of Bass (1997), compared to individualized consideration, contingent reward leadership style was frequently practiced. According Maslow (1970) cited in Wahba and Bridwell (1976), a higher level need emerges after the gratification of the lower level needs. As the United Nations (2017) reported, Ethiopia is one of the least developed countries. Thus, the higher use of contingent reward leadership than the individualized consideration leadership style might be due to the emphasis of the Ethiopians on the material (physiological) needs over the psychological needs.

Antonakis (2001) found active management-by-exception was frequently used in unstable conditions, by majority male leaders and low-level leaders. Most of the leaders included in this study were males and low-level leaders (department heads). Thus, the observed high use of active management-by-exception leadership may be due to the domination of male and low level leaders. Moreover, it might also be due to the collectivist and high power distance cultures that allow leaders to induce a sense of fear on followers (Guterman, 2010).

Functional Universality of the Leadership Factors

The findings showed that the components of transformational leadership, contingent reward and management-by-exception active were positively related to affective-normative organizational commitment. The results also showed that affective-normative organizational commitment had negative relationships with management-by-exception passive and laissez-faire leadership behaviors. The positive relationships of the affective-normative organizational commitment with the components of transformational leadership and contingent reward and its negative relationships with management-by-exception passive and laissez-faire leadership were similar with the findings of Lo et al. (2009), Nazir et al. (2016) and Saqer (2009). However, the findings of the above research undertakings were not consistent with the observed positive relationship of active management-by-exception with affective-normative commitment in this study. In a collectivist and high power distance society, leaders are tolerated when they induce a sense of fear on followers who violate the

norms (Guterman, 2010). As a result, the positive and significant relationship of the management-by-exception active leadership style with affective-normative commitment may be due to the collectivist and high power distance cultures of Ethiopia.

Interrelationship between the Full-Range Leadership Factors

The correlational results of the nine-factor leadership model revealed positive relationships among the components of active leadership (components of transformational leadership, contingent reward, and management-by-exception active) and negative relationships among the components of active leadership and the components of passive leadership (management-by-exception passive and laissez-faire leadership). The correlational results of the nine-factor leadership model also showed a positive relationship between management-by-exception passive and laissez-faire leadership. The positive relationships between the components of transformational leadership and contingent reward, and between management-by-exception passive and laissez-faire leadership and the negative relationship between the components of transformational leadership and contingent reward with the management-by-exception passive and laissez-faire leadership were consistent with the findings of Avolio et al. (1995), Antonakis (2001), Antonakis et al. (2003), and Bass (1997). However, the positive and significant relationships of management-by-exception active with the transformational leadership styles and contingent reward and the negative and significant relationship of management-by-exception active with the management-by-exception passive and laissez-faire leadership were contrary to the findings of the aforementioned researchers. These results were, however, similar to the results reported by Den Hartog et al. (1997) in a variety of Dutch organizations, and Chen and Fahr (1999) in Chinese organizations. This, in turn, implies the management-by-exception active is context dependent.

Overall, the psychometric properties of the Multifactor Leadership Questionnaire and the leadership models were to some extent changed in the Ethiopian context.

Implications for Theory Development and Practice

The study is believed to have important implications for empirical testing, leadership development, and theory development. Based on the evidence provided, it can be concluded that the nine- and two-factor leadership models are valid and reliable leadership models. However, the nine-factor leadership model had multicollinearity ($r > .70$) among components of transformational, contingent reward, and management-by-exception active leadership factors. As to Meyers et al. (2005), the interpretations of the multiple regression results are likely to be distorted if two variables have multicollinearity. Thus, in order to reduce misinterpretations, it is recommended that future researchers use the two-factor leadership model which is relatively free from multicollinearity.

However, in leadership development, it is better to use the nine-factor full-range leadership model than the two-factor leadership model because understanding increases when a concept is broken down into its component parts (Bloom, Engelhart, Furst, Hill, & Krathwhol, 1956).

The lack of functional universality of the management-by-exception active is a warning for leadership researchers and trainers who employ imported leadership instruments and leadership models for assessment of leadership practices and leadership development without testing their functional universality. Thus, before employing any imported leadership theories and instruments, it is worthwhile to test its functional universality.

The positive relationship between active leadership and affective-normative organizational commitment suggests that organizational leaders need to use active (transformational, contingent reward, and management-by-exception active) leadership style to improve organizational and employee outcomes. The negative relationship between passive (management-by-exception passive and laissez-faire leadership) leadership and affective-normative organizational commitment, in turn, implies that leaders in the universities need to reduce the use of passive leadership style to minimize organizational flaws.

Limitations and Future Research Directions

The study tested leadership measures that were imported from other cultures. This can help one to understand leadership values that are culture universal and ones that are limited to the context where the original measurement model was developed. However, it could not help to identify leadership behaviors that are unique to the present context. Therefore, additional qualitative research is needed to explore the leadership behaviors that are unique to the university context, the teaching profession, and the Ethiopian culture.

The data of the predictor and criterion variables were collected at the same time and from the same sources. Accordingly, the results might be affected by common method bias and they might not support firm conclusions about the instrument's criterion validity. Hence, in order to minimize common method bias and reach at valid conclusions, future researchers need to collect the data either at different times or from different sources.

The MLQ was tested under homogeneous conditions. In order to come up with conclusive findings, future researchers need to test the MLQ under different risk level, stability conditions, sex groups, and leadership levels.

The functional universality of the full-range leadership factors is measured using not only organizational commitment but also other psychological variables such as efficiency, extra effort, organizational citizenship behavior, job satisfaction, and so on. So, it is important to investigate the variform functional universality of the full-range leadership factors using other leadership effectiveness measures.

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