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MODELING ACADEMIC LEADERSHIP DEVELOPMENT: LINKING COMPLETE ACADEMIC LEADERSHIP BEHAVIORS TO LEADERSHIP OUTCOMES IN PUBLIC UNIVERSITIES

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Abstract

The purpose of this study was to investigate if the link between complete leadership behaviors and leadership outcomes provides new insight to advance academic leadership preparation in Ethiopia's public universities. The cross-sectional survey research design was preferred to administer the data collection process. Using the sample size determination technique, the investigator randomly selected 450 sample units, of which the properly filled and returned were 401 (89%). Subsequently, the study employed stepwise regression analysis to investigate the best subsets of academic leadership behaviors that account to improve leadership outcomes. As result, intellectual stimulation, contingent reward, inspirational motivation, building a learning environment, idealized influence-attributions, laissez-faire, and idealized influence-behaviors were the best subsets of leadership sub-behaviors, which significantly account (R^2=69.4%) to improve leadership outcomes. Thus, the complement of full-scale instructional leadership and full range leadership sub-behaviors are constituting a complete academic leadership development model, which advances academic leadership preparation in university terrain.

Keywords: *Modeling; Academic Leadership; Leadership Behaviors; Leadership Development; Leadership Outcome*

1. INTRODUCTION

1.1 Background

Academic leadership development studies appear to be prominent in learning institutions including universities. The studies on leadership development have been assimilated through changing and expanding the changed leadership behaviors, beliefs, or attitudes towards achieving institutional goals; whereas the best subsets of complete academic leadership behaviors that predict leadership outcomes have less been documented in the previous studies in the universities. In this concern, the researcher capitalized on the views of scholars who noticed full-scale instructional leadership behaviors and that the full range of leadership behaviors, which has been employed complementary to build effective leadership in schools (Hallinger, 2003; Marks & Printy, 2003; Stewart, 2006). Further, the researcher named the combination of full-scale instructional leadership and full-range leadership behaviors, hereafter, 'complete academic leadership behaviors' and he employed as framework for this study. This conceptual framework employed to measure if the combination of the two leadership theories coherently predicts leadership outcomes in public universities. Thus, this study examined if the link between complete academic leadership behaviors and leadership outcomes provides new insights to advance academic leadership preparation in the public university context.

In the literature, leadership is defined as a development process and the leadership development process usually employs integrated contemporary leadership theories to evolve members in leadership roles and processes in context (Avolio & Gardner, 2005; Day, 2001; McCauley et al., 2010). The complement of the full-range leadership development model (Avolio & Bass, 1995; Sosik & Jung, 2010) and the full-scale instructional leadership model (Hallinger & Wang, 2015) is important to integrate the instructional and institutional aspects of leadership development competencies to improve school leadership effectiveness (Marks & Printy, 2003; Stewart, 2006). In the previous studies, however, the analytical framework that includes the complemented full range and full-scale leadership theories for the one purpose of leadership development has less been emphasized in the universities. Moreover, there has been a scarcity of relevant theories regarding academic leadership development (ALD) in universities. This is the reason that motivated a researcher to examine if the combination of the full range and full-scale leadership behaviors expansion attribute to improving the faculty members'

academic work effort, effectiveness, and satisfaction, which are leadership outcomes in e public university conditions.

Accordingly, the complemented concepts were used to investigate the best subsets of the full range leadership and full-scale instructional leadership sub-behaviors in those predicting the leadership outcome factors such as faculty members'academic work effort, effectiveness, and satisfaction in the universities. The investigated results informed that expansions of a complete academic leadership behaviors attributes to improve leadership outcomes in Ethiopia's public university context. Thus, the rational to combine the full-scale instruction leadership model and full-range leadership model was to investigate if the integrated notions of academic work related, academic workers association related, and change related variables improve leadership outcomes in university context.

In this concern, the transformational leadership development model has been originally formulated from the transformational leadership theoretical framework, in which the theory contributes to produce a multifactor leadership questionnaire (MLQ) (Sosik & Jung, 2010; Yukl, 1999, 2010). In addition, the transformational leadership development model is best known for its other name full range leadership development model. The proponent of the model formulated the MLQ tool. The MLQ usually used to build leadership behaviors and to measure the change in leadership behaviors either in profit organizations or non-profit organizations including universities (Avolio, Bass, & Jung., 1999; Bass, 1997, 1999, 2000; Lievens et al, 1997; Muenjohn & Armstrong, 2008; Sosik & Jung, 2010; Yukl, 1999).

Consequently, the MLQ tool fairly employed to measure the development of transformational, transactional, and laissez-faire leadership behaviors, in which the consequences improve leadership outcomes in the public HEIs context. This is, because, one of the indications of leadership behavior development expansion is visible in the similarity of the expanded leadership behaviors at several leadership echelons in context (McCauley et al., 2010). Nevertheless, the item factors of the MLQ tool lack the scope to address academic work-related variables, in which Yukl (1999) verified its dearth in task-oriented leadership behaviors. So, the tool could not be effective to build and measure the learning aspects of leadership development in context.

By the way, some authors contributed the theoretical framework to measure and develop the instructional leadership behaviors of the school principals (Hallinger, 2005, 2008, 2009; Hallinger et al., 2013; Hallinger & Wang, 2015; Halverson, Prichett, & Thomas, 2007; Hek & Hallinger, 2005). This theoretical framework has been also best known by its other name full-scale instructional leadership model. The founder of the model developed the principal instructional management rating scale (PIMRS) in 1982 and further reformulated its short-form tool in 2013 by Hallinger and his colleagues for the same purpose (Hallinger & Murphy, 1985; Hallinger et al., 2013). In this concern, the researcher accredited that the PIMRS and the MLQ tool were the complemented notion those help to measure and develop academic leadership competencies along with faculty members academic work efforts, effectiveness, and satisfaction in the higher education institutions (HEIs) context. The instructional leadership behaviors that have been proposed to measure the school leadership effectiveness (Hallinger, 2005, 2008, 2009), can be utilized at the academic program execution level in HEIs; whereas the transformational leadership model supports to build and measure academic leadership behaviors and its consequences from the program execution level including students' supervision (Barbuto et al., 2009) up to the entire governace of the HEIs (Laguerre, 2010).

Subsequently, this study justified that the combination of the two tools (MLQ, PIMRS) are complementary and useful to constitute a complete academic leadership development model for one purpose in university context. In this concern, this study employed the conceptually integrated and partly modified tool to investigate a complete academic leadership development model, in which the consequences accounts to improve the entire faculty members and academic officers' work-related efforts, effectiveness, and satisfaction in Ethiopia's public university context.

1.2 Statement of the Problem

The transformational leadership development model has been noticed to advance leadership preparation without prerequisites in organizations including higher education institutions (Barbuto et al., 2009; Laguerre, 2010; Sosik & Jung, 2010). In this aspect, Bass (2000), the founder of the transformational leadership theory, proposed to employ the theory to lead 21st-century learning organizations; whereas the theory still lacks the instructional aspects of leadership behaviors such as coordinating the curriculum, monitoring students' progress, and protecting instructional time (Hallinger, 2003). Then again, instructional leadership behaviors may support leading an institution

towards the success of students' learning and research activities; whereas the theory lacks the transformational aspects of leadership behaviors that may help to lead change within the entire learning organization context. In this sense, independently, both the transformational and instructional leadership development models may not fully satisfy the academic leadership advancement in the universities.

The full-range leadership development model has been noticed to develop faculty members in learning institutions independently without prerequisites (Barbuto et al., 2009; Laguerre, 2010; Sosik & Jung, 2010). However, scholars proposed that the complement of full-scale instructional leadership and the full-range leadership conceptions are important to full fill the academic members' leadership preparation in lower and middle-learning organizations (Marks & Printy, 2003; Stewart, 2006). Then, what would be the combined attribution of the transformational leadership model and instructional leadership model on leadership outcomes was the emphasis given in this study in the public university context.

In the previous research, authors who coined the full-range and full-scale leadership behaviors were employed to measure leadership effectiveness at the school level (Hallinger, 2003; Marks & Printy, 2003; Stewart, 2006). Nevertheless, the studies that coin the full-scale instructional leadership and full-range leadership behaviors for one purpose were not identified in the Ethiopia's public university context. In this concern, the combination of full-scale instructional leadership and the full range of leadership behaviors was named for this study 'complete academic leadership behaviors' to scrutinize if the newly coined complete academic leadership behaviors predict leadership outcomes in public university settings. Moreover, the focus of this study was to investigate if the expansion of complete academic leadership behaviors enhances the effort, effectiveness, and satisfaction of faculty members, which the consequences evolve them in academic leadership roles and processes. In this wisdom, taking the Ethiopia's public universities as a data source, the major purpose of this study was to investigate if the link between subsets of complete academic leadership behaviors and leadership consequences offers new insights that advance academic leadership preparation in the university landscape. So, to achieve the study purpose, following research question was formulated in the public university context.

1.3 Research Question

Is the link between complete leadership behaviors (transformational, transaction, laissez-faire, & instructional behaviors) and leadership outcomes (execive academic work effort, effectiveness, and satisfaction) provide new insights that advance academic leadership preparation in the public universities?

Based on the theoretical frameworks employed to construct the conceptual framework of this study, following hypothesis was design to test the link btween the best subsets of academic leadership behaviors and leadership outcomes are statistically significant.

1.4 Hypothesis

There are no associations between the subsets of complete academic leadership behaviors and leadership outcomes in public universities.

1.5 Significance of the Study

The present study filled the theoretical gap to advance academic leadership development programs in the public university context. In this concern, the research output logically supports policymakers to design academic leadership development programs to improve faculty leadership competencies, particularly in the public university and generally in learning institutions. So, this study is important to advance academic leadership competency expansion in the public university. It assists practitioners to launch academic leadership development programs in the learning organization. It may awaken policymakers to utilize the pedagogical and economic aspects of the academic leadership development platform to apply the results to the learning organization. Moreover, the study results may ignite the potential researcher to pursue academic leadership advancements in a learning organization context.

1.6 Conceptual Framework

The researcher constructed the conceptual framework for the present study from the complementary of the full-range leadership theory (Bass & Avolio, 1995) and the full-scale instructional leadership theory (Hallinger et al., 2013). These two contemporary theories have been noticed as complementary leadership theories to advance the effectiveness of education leadership at the school level (Marks & Printy, 2003; Stewart, 2006). Full-scale instructional leadership is usually employed to improve school leadership at primary and secondary education sub-sectors; whereas full-range leadership is usually

employed without the prerequisite to improve the academic leadership in the university situation (Barbuto et al., 2009; Laguerre, 2010; Sosik & Jung, 2010). The rationale to complement the full-scale instructional leadership and full-range leadership theories was that both of the theories were not complete to independently support the academic leadership preparation in learning organizations (Marks & Printy, 2003; Stewart, 2006). Besides, instructional leadership styles are important to develop managerial leadership preparation at program execution levels. In this wisdom, the researcher assumed that examining the association between complete leadership behaviors and leadership outcomes provides new insights to propose advanced academic leadership development notions in public universities.

1.7 Delimitation

The author delimited the present study on six public universities, contemporary leadership theories, and a quantitative methodological approach. The institution delimitation includes two first-generation, two second-generation, and two third-generation universities, excluding the fourth and fifth-generation Ethiopia's public universities. Further, cross-sectional survey design was employed to manage the data processing procedures. As well, theoretical frameworks of full-range leadership and full-scale leadership were conceptually delimited to investigate if the complement of the two theories coherently explains the academic leadership outcome factors.

2. METHODOLOGY

2.1 Population and Sample of the Study

The author employed the quantitative approach cross-sectional survey design to administer the data collection process once at a time in one particular place. The population of the study was academic leaders in Ethiopia's public universities. In Ethiopia, during data collection, there were 34 public universities labeled as first, second, and third generations and hold 31269 faculty members (MoE, 2018). Since the researcher designed the study to investigate if the best combinations of academic leadership behaviors predict the leadership outcomes in public universities, the fourth-generation universities were not included in the sample owing to their academic leaders' short experience to rate immediate leaders at hierarchical levels. Hence, the average population for each of the 34 public universities was nearly 920 which was greater than the pre-determined sample size (n = 385) through

Cochran's (1977) sample size determination technique. In this regard, six public universities (two from each of the specified generations) were randomly selected and the estimated target population was 5520 (6*920) academic staff (hereafter, faculty members).

Further, the author employed Cochran's (1977) finite population size; correction technique to compute the minimum sample sizes of the study that results from nearly 354 faculty members. He used response rate proportion (80%) during the pilot test in a normal situation to estimate the minimum sample size, which the computed result was 425 faculty members, which were approximately 71 faculty members per each one of the sample universities. Furthermore, the author assumed that increasing the sample size enhances the quality of the data, then, he increased the sample units to 450 faculty members (75 faculty members per each of the sample institutions) including academic officers. In this concern, the author employed the stratified quota sampling technique to draw two sample public universities from each of the first, second, and third generations in Ethiopia's public university context.

In line with Cochran's (1997) scheme, equal strata random sampling technique was employed to draw 75 faculty members (25 subjects per each of band-1, band-2, and band-6) from each of the six sample public universities. The samples of the three strata were band-1 (engineering and technology), band-2 (natural and computational sciences), and band-6 (social sciences and humanities) within the sample public universities. Following the assumptions that Ethiopia's public universities recruited its academic officers beginning the heads up to the president positions from faculty members and each of the faculty members has an academic leadership role, both academic officers and faculty members were academic leaders. Thus, the sample units of the study were 450 academic leaders representing the views of the entire population of the study. In this focus, the author asked sample academic leaders to rate their immediate leaders through the chain of academic management structure from faculty members up to the presidents.

2.2 Measures

The instrument employed to collect data was a self-developed tool from the combination of the multifactor leadership questionnaire (MLQ) (Avolio & Bass, 1995) and the principal instructional management rating scale (PIMRS) tool (Hallinger & Wang, 2015), in which the author modified the notions of the two tools to match university situation. Accordingly, 450 questionnaires were distributed

to the academic leaders, of which the filled and returned questionnaires were 401 (89%). The collected data were organized, and tested if they collected data were statistically analyzable. Using IBM-SPSS version 20, stepwise regression analysis was employed to investigate the best subsets of complete academic leadership behaviors, which account for the development of leadership outcomes in the public university landscape. Finally, the conclusions were drawn based on the investigated results of the study.

Regarding the code of ethics, the author respected all aspects of the code of ethics in line with APA 7th edition noticed for the quantitative survey method (APA, 2019). The sponsor university research directorate office approved the proposal and provided consent to conduct the study. Further, the author asked the six sample public universities to collect data using the designed questionnaire. After endorsed, the author administered the data collection process, in which the participants voluntarily rated their immediate academic leaders at all the hierarchical levels. Further, he assured the confidentiality of the information by noticing it on the cover page of the questionnaire. In this wisdom, the author collected the survey data for this study.

3. RESULTS AND DISCUSSIONS

3.1 Results

The proportions of academic officers (head up to the president) (30.7%) and faculty members (without formal managerial positions) (69.3%) were participated and given the common name "academic leaders". Regarding academic streams, 34.2% of the social sciences and 65.8% of natural sciences, engineering, and technology streams faculty members from assistant lecturer up to the professor academic ranks were rated their immediate leaders' behaviors. In this regard, 51.6% of faculty members rated the 25.4% of first-line academic officers (head, program coordinators), and those who further rated their immediate leaders, which were middle academic officers (deans, directors) (17.2%). Further, the middle officers (17.2%) rated a proportion of 5.7% sample units that was top academic officers in the sample Ethiopia's public universities.

In Table 1, the descriptive statistics of the variables were represented by the sub-scales of the MLQ and PIMRS. The computed Cronbach's Alpha results range from 0.94 up to 0.6 coefficients. In this

part, about 72.2% of the sub-scale factors were found above the minimum acceptable Cronbach's Alpha coefficients of 0.7 (49%). Moreover, the coefficients of Cronbach's Alpha for the overall instructional leadership behaviors of the 20 items (0.97) and the overall MLQ 45 items (0.93) were higher than the minimum acceptable score (0.7). In this regard, the collected data results were verified that statistically analyzable.

Table 1 Descriptive statistics

Leadership factor items	No of items	N	Min	Max	Mean	Std. Dev.	Cronbach's Alpha
Idealize Influence (attributed) (IIA)	4	401	.0	4.0	2.56	.978	0.82
Idealize Influence (behavior) (IIB)	4	401	.0	4.0	2.61	.932	0.6
Inspirational Motivation (IM)	4	401	.0	4.0	2.74	.870	0.75
Intellectual stimulation (IS)	4	401	.0	4.0	2.55	.873	0.73
Individualized Consideration (IC)	4	401	.0	4.0	2.3	.889	0.64
Overall transformational behaviors	20	401	.0	4.0	2.69	.813	0.92
Contingent Reward (CR)	4	401	.0	4.0	2.69	.922	0.72
Management by Exception (Active) MBEA	4	401	.0	4.0	2.19	.889	0.67
Management by Exception (Passive) MBEP	4	401	.0	4.0	1.93	.885	0.59
Overall transactional behaviors	12	401	.0	4.0	2.25	.676	0.71
Laissez-faire factor	4	401	.0	4.0	1.83	.985	0.69
Setting Goals (SG)	5	401	.0	4.0	2.47	.98	0.94
Coordinating Curriculum (CC)	6	401	.0	4.0	2.4	1.059	0.89
Building a learning environment (BLE)	9	401	.0	4.0	2.25	1.054	0.91
Overall instructional behaviors	20	401	0	4.0	2.37	.938	0.97
Excessive academic work	3	401	.0	4.0	2.42	1.070	0.86
Effectiveness	4	401	.0	4.0	2.55	.989	0.88
Satisfaction	2	401	.0	4.0	2.6	1.042	0.79
Overall Leadership Outcome factors	9	401	.0	4.0	2.53	.985	0.95

Stepwise regression was used to identify the vital subset of the complete leadership behaviors that best explain leadership outcomes. In using the stepwise regression, recognizing the subjects to item variable-ratio should satisfy the minimum 5 to 1 ratio. In this stepwise regression, there were 401 valid subjects and the questionnaire included 65 items, of which 56 were independent variables and 9 were

dependent variables. Then, the computed subjects to the item variables ratio (6.2 to 1) satisfy the minimum ratio (5 to 1) for stepwise regression analysis. In this sense, the stepwise regression provides the best subset of complete academic leadership behaviors that predict leadership outcomes, with which the purpose was to investigate the prospective academic leadership development model for public universities. Thus, investigating the link between ample academic leadership behaviors/sub-behaviors and leadership outcomes inform the combination of vital leadership behaviors/sub-behaviors that account to produce an inclusive academic leadership development model in a learning organization context.

Table 2 Model summary of R^2 in Stepwise regression

Model	**R**	**R Square**	**Adjusted R Square**	**Std. The error in the Estimate**
1	.731[a]	.535	.534	.6725
2	.791[b]	.626	.624	.6035
3	.809[c]	.655	.652	.5806
4	.823[d]	.677	.674	.5621
5	.828[e]	.685	.681	.5560
6	.830[f]	.689	.685	.5529
7	.833[g]	.694	.688	.5497

a. Predictors: (Constant), IS
b. Predictors: (Constant), IS, CR
c. Predictors: (Constant), IS, CR, IM
d. Predictors: (Constant), IS, CR, IM, BLE
e. Predictors: (Constant), IS, CR, IM, BLE, IIA
f. Predictors: (Constant), IS, CR, IM, BLE, IIA, LF
g. Predictors: (Constant), IS, CR, IM, BLE, II-A, LF, II-B

Accordingly, Table 2 is presented the associations between the best subsets of leadership sub-behaviors (independent variables) and the ALD outcomes (dependent variables). This test investigated that intellectual stimulation is the most important predictor (R^2 = 53.5%) of ALD outcomes in this study area landscape. Next, intellectual stimulation (IS), contingent reward (CR), inspirational motivation (IM), building learning environment (BLE), idealized influence-attributions (II-A), laissez-faire, and idealized influence-behaviors (II-B) enhance the attribution to predict (R^2 = 69.4%) the ALD outcomes.

As shown in Table 2, the stepwise regression R for the relationship between the best subsets of leadership sub-behaviors in model-7(IS, CR, IM, BLE, II-A, LF, & II-B) and the ALD outcomes (members Excessive academic work, effectiveness, &satisfaction) was 0.83, which is characterized by a very strong relationship. The proportion of variance in the ALD outcomes accounted for about 69.4% (model-7) in favor of the best subset of four transformational (IS, IM, II-A, & II-B), one transactional (CR), one instructional (building learning environment), and laissez-faire leadership behaviors. Although the combination of transactional leadership behaviors was not found as the most significant predictor of leadership outcome factors; one of its components, a contingent reward, was identified as the second most important predictor of leadership outcome factors as noticed in Table 2. To sum up, the best subsets of leadership sub-behaviors (model-7) could account for the development of a variation of 69% in the leadership outcomes in public universities. In this evidence, the full-scale instructional leadership model and the full-range leadership model can be employed as complementary leadership theories to enhance the development of leadership outcomes in the public university context.

Table 3 F-test in stepwise regression of the hypothesis

Model		Sum of Squares	DF	Mean Square	F	Sig.
1	Regression	207.361	1	207.361	458.546	.000[b]
	Residual	180.434	399	.452		
	Total	387.796	400			
2	Regression	242.847	2	121.424	333.406	.000[c]
	Residual	144.948	398	.364		
	Total	387.796	400			
3	Regression	253.953	3	84.651	251.091	.000[d]
	Residual	133.842	397	.337		
	Total	387.796	400			
4	Regression	262.697	4	65.674	207.893	.000[e]
	Residual	125.098	396	.316		
	Total	387.796	400			
5	Regression	265.695	5	53.139	171.906	.000[f]
	Residual	122.101	395	.309		
	Total	387.796	400			
6	Regression	267.353	6	44.559	145.763	.000[g]
	Residual	120.443	394	.306		
	Total	387.796	400			
7	Regression	269.046	7	38.435	127.201	.000[h]
	Residual	118.750	393	.302		
	Total	387.796	400			

a. Dependent Variable: Outcomes

b. Predictors: (Constant), IS
c. Predictors: (Constant), IS, CR
d. Predictors: (Constant), IS, CR, IM
e. Predictors: (Constant), IS, CR, IM, BLE
f. Predictors: (Constant), IS, CR, IM, BLE, IIA
g. Predictors: (Constant), IS, CR, IM, BLE, IIA, LF
h. Predictors: (Constant), IS, CR, IM, BLE, IIA, LF, IIB

As shown in the Table 3, the probability of the F statistic (model-7) F (7, 393) = 127.2, P < 0.001 for the regression relationship between the intellectual stimulation, contingent rewards, inspirational motivation, building learning environment, idealized influence (attributions), laissez-faire, and idealized influence (behaviors) leadership behaviors (IVs) and the ALD outcomes (DV), satisfy the level of significance at $\alpha = 0.05$. Accordingly, the null hypothesis that there is no relationship between the best subset of the leadership behaviors sub-factors (IVs) and the leadership outcomes (DV) was rejected. There was a significant association between the best subset of leadership behaviors sub-factors and the ALD outcomes such as Excessive academic work, effectiveness, and satisfaction).

Table 4 the t-test in the stepwise regression of the hypothesis

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.428	.104		4.124	.000
	Intellectual stimulation (IS)	.824	.038	.731	21.414	.000
2	(Constant)	.059	.100		.585	.559
	Intellectual stimulation (IS)	.499	.048	.443	10.464	.000
	Contingency rewards (CR)	.446	.045	.418	9.871	.000
3	(Constant)	-.118	.101		-1.167	.244
	Intellectual stimulation (IS)	.373	.051	.331	7.326	.000
	Contingency rewards (CR)	.318	.049	.298	6.507	.000
	Inspirational motivation (IM)	.308	.054	.272	5.740	.000
4	(Constant)	-.158	.099		-1.608	.109
	Intellectual stimulation (IS)	.323	.050	.287	6.444	.000
	Contingency rewards (CR)	.264	.048	.247	5.445	.000
	Inspirational motivation (IM)	.281	.052	.248	5.382	.000

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
	Building a Learning Environment (BLE)	.172	.033	.184	5.261	.000
5	(Constant)	-.180	.098		-1.840	.066
	Intellectual stimulation (IS)	.283	.051	.251	5.508	.000
	Contingency rewards (CR)	.219	.050	.205	4.364	.000
	Inspirational motivation () IM	.251	.053	.222	4.773	.000
	Creating Learning Climate (CLC)	.169	.032	.181	5.224	.000
	Idealize influence-attributions (IIA)	.131	.042	.130	3.114	.002
6	(Constant)	-.025	.118		-.209	.834
	Intellectual stimulation (IS)	.279	.051	.247	5.459	.000
	Contingency rewards (CR)	.205	.050	.192	4.085	.000
	Inspirational motivation (IM)	.251	.052	.222	4.804	.000
	Building a Learning Environment (BLE)	.175	.032	.187	5.418	.000
	Idealize influence-attributions (IIA)	.131	.042	.131	3.132	.002
	Laissez-faire	-.067	.029	-.067	-2.329	.020
7	(Constant)	-.053	.118		-.449	.654
	Intellectual stimulation (IS)	.248	.052	.220	4.743	.000
	Contingency rewards (CR)	.190	.050	.178	3.775	.000
	Inspirational motivation (IM)	.228	.053	.202	4.315	.000
	Building a Learning Environment (BLE)	.163	.033	.174	4.992	.000
	Idealize influence-attributions (IIA)	.122	.042	.122	2.922	.004
	Laissez-faire	-.070	.028	-.070	-2.447	.015
	Idealize influence-behaviors (IIB)	.102	.043	.097	2.367	.018

a. Dependent Variable: Leadership outcomes (excessive academic work, effectiveness, satisfaction)

Further, Table 4 offered the t-test results for all of the elements of the best subsets that predict leadership outcomes. In the best subset model (model-7), the t-statistics were used to compute the associations between the best subsets of leadership behaviors sub-factors and the ALD outcomes. As a result, model-7 integrates all elements of the best subsets of leadership behaviors sub-factors that predict

leadership outcomes. As presented in the Table 4, the t-statistics for the independent variables of intellectual stimulation ($t = 4.7$, $P < 0.001$), contingent reward ($t = 3.8$, $P < 0.001$), inspirational motivation ($t = 4.3$, $P < 0.001$), building learning environment ($t = 4.99$, $P < 0.001$), idealized influence (attributions) ($t = 2.9$, $P <= 0.004$), laissez-faire behaviors ($t = -2.5$, $P <= 0.015$), and idealized influence (behaviors) in 2-tailed at $\alpha = 0.05$ level of significance were made the significant associations with the academic leadership outcomes. In this intellect, the associations between the mentioned leadership sub-behaviors and ALD outcomes such as members' excessive academic work, effectiveness, and satisfaction were significant. Therefore, the t-test failed to reject the null hypothesis that there is no relationship between the best subsets of the independent variables and the dependent variables ($b = 0$) in Ethiopia's public universities.

Consequently, the test statistics justified that the relationship between the best subsets of the independent variables (IS, CR, IM, CLE, IIA, Laissez-faire, & IIB) and the dependent variable (members' excessive academic work, effectiveness, & satisfaction) was statistically significant. The test results predicted the best model of ALD notions that predict leadership outcomes in the public university site. On the other hand, individualized consideration, management by exception-active, management by exception-passive, defining the school mission, and leading the school program were investigated as less important to predict academic leadership outcomes in public universities. Although the relationship between laissez-faire behavior and leadership outcomes was still investigated inversely proportional., which was in line with the previous studies (Avolio et al., 1999), this study further identified as reducing laissez-faire behavior enhances leadership outcomes in Ethiopia's public universities.

3.2 Discussions

In the present study, the stepwise regression associations between the best subsets of academic leadership sub-behaviors and the leadership outcomes revealed the ALD model for the public university terrain. The summarized results are depicted in Table 5, at page 11.

In this test, intellectual stimulation was found out the most important predictor ($R^2 = 53.5\%$) of ALD outcomes in Ethiopia's public university context. On the other hand, the best model (model-7) that includes IS, CR, IM, BLE, II-attributions, LF, and II-behaviors as the best subsets attributes 69.3%

variation of ALD outcomes. These results support the proposition of the founder of the transformational leadership theory proposition to lead 21st-century learning organizations (Bass, 2000).

In this concern, the test of significant differences justified that each of the mentioned sub-factors notably accounted for the variation of ALD outcomes in the study terrain. In literature, all transformational leadership behaviors are positively associated with leadership outcome factors; whereas laissez-faire behavior and some transactional behaviors such as MBE-passive are negatively associated with leadership outcome factors (Avolio et al., 1999; Bass, 1999). In this study, however, the laissez-faire behavior has the account for the variation of 0.4% to build leadership outcomes; whereas literature witnessed that laissez-faire behavior is inversely proportional to the leadership outcomes factors. In this regard, expanding the reduction of laissez-faire leadership behaviors through sharing experiences enhances the development of leadership outcomes in the public university terrain.

Table 5 Linking Academic leadership behaviors to leadership outcomes

No	**Leadership Sub-behaviors**	**Descriptions**	**Target Development**	
			Attributes	**Consequences**
1	Intellectual stimulation	Expanding the process of questioning old assumptions, traditions, and beliefs; stimulating in others new perspectives and ways of doing things; and encouraging the expressions of ideas and reasons (Bass, 1997);	Behaviors, attitudes, beliefs	Excessive academic work, Effectiveness, Satisfaction
2	Contingent rewards	Expanding the process of engaging in the constructive path-goal transaction of reward for academic work performed (example for effective and successful teaching, supervising, publication, community services);	Behaviors, beliefs, expectations	Excessive academic work, Effectiveness, Satisfaction
3	Inspirational motivations	Expanding the processes of articulating the institutions' big picture of the future, challenging members with high standards, talking optimistically with enthusiasm, and providing encouragement and meaning for what needs to be done (Bass, 1997);	Behaviors, beliefs, attitudes	Excessive academic work, Effectiveness, Satisfaction
4	Creating learning	Expanding the processes of protecting instructional time, promoting professional	Behaviors, beliefs, attitudes	Excessive academic

No	Leadership Sub-behaviors	Descriptions	Target Development	
			Attributes	**Consequences**
	environment	development, modeling, providing incentives for academic leaders, and providing incentives for learning achievements (Hallinger, 2003);		work, Effectiveness, Satisfaction
5	Idealized influences (attributions)	Expanding the processes of building followers' trust and respect for the immediate academic leaders/officers	Trust, hope, and beliefs about immediate leaders	Excessive academic work, Effectiveness, Satisfaction
6	Laissez-faire	Reducing absenteeism when needed, failing to follow up requests for assistance, and the resistance to express views on important issues (Bass, 1997); empowering as well as delegating when needed	Attitudes, beliefs	Excessive academic work, Effectiveness, Satisfaction
7	Idealized influences (behaviors)	Expanding the processes of building academic leaders/officers that reflect their values, beliefs, and sense of mission towards institutional goals.	Beliefs, values, attitudes, behaviors	Excessive academic work, Effectiveness, Satisfaction

On the other hand, individualized consideration of transformational leadership behavior, MBE-active, and MBE-passive of transactional behaviors, and defining the institutional mission and leading instructional programs of the instructional behaviors were found less important to predict ALD outcomes in this study terrain. In this event, the mentioned transactional behaviors could less support the development of leadership outcomes. This is; because, active management by exception helps the leader to monitor followers' performance and to take corrective action for the deviation (Bass, 1997). Likewise, passive management by exception occurs when the leader fails to intervene until the problem becomes serious (Bass, 1997). Both behaviors seem less important to build academic leadership behaviors where the knowledge, ability, and experiences of the followers and the immediate leaders are similar. Regarding the two instructional behaviors (defining institutional mission and leading learning programs) attribution for the leadership, outcomes may request additional justifications. This is, because, building the first two instructional behaviors is the core academic task-oriented behavior

in the profession. In this sense, the concepts help to expand the learning aspects of leadership development notions in the public university landscape.

Accordingly, the proportion (R^2 = 69.4%) of the best subsets of leadership behaviors sub-factors (IS, CR, IM, BLE, II-A, laissez-faire, and II-B) that account for the variation of ALD outcomes was found to better compared to the proportion (R^2 = 63%) of the best subsets of leadership behaviors major factors that account to the variation of ALD outcomes in this study terrain. Therefore, intellectual stimulation, contingent rewards, inspirational motivation, building or creating the learning environment, idealized influences (attributions), laissez-faire, and idealized influences (behaviors) could be used to expand the processes of ALD in public universities.

In this sense of hypothesis testing in the current context of public universities, the medium of the intellectual capital network along with the psychological capital better help to expand ALD competencies compared to the social capital network alone as noticed in the works of scholars (Bolden, 2006; Brass & Krackhardt, 1999; Day, 2001; McCauley et al., 2010). According to the test results of the hypothesis, this study capitalizes on the notion of intellectual capital to expand the processes of ALD in line with the previous studies (Freeman & Kochan, 2012; Roos et al., 2005; Jurczak, 2008). This is because intellectual capital integrates human capital, social capital, and structural capital which the structural capital also includes technological capital, organizational capital, and business capital (Jurczak, 2008; Roos et al., 2005).

As summarized in the Table 5, the best subsets of academic leadership behaviors predicted useful leadership outcomes. In this concern, the best subsets of leadership sub-behavior expansion can enhance the faculty members' academic work efforts, effectiveness, and satisfaction in the public universities in Ethiopia. In this regard, the sub-factor items that meaningfully account for the ALD in public universities were revealed. Consequently, employing the mentioned seven sub-behaviors as described in the Table 5 help to expand the processes of ALD in the study terrain.

Inclusively, the complement of transformational and instructional leadership behaviors that has been confirmed by the authors (Hallinger, 2003; Marks & Printy, 2003; Stewart, 2006) was also justified in the present study, in which the synchronized concepts logically balance the ALD practices in Ethiopia's

public universities. In this sense, expanding the complete ALD notion improves the leadership outcomes such as faculty members' academic work efforts, effectiveness, and satisfaction. In this sense, the goal of ongoing ALD might be used to impose some once beliefs and interests of the academic stakeholders through any one of the methodological options such as meetings, short-term training, and sharing experiences.

To sum up, the complete academic leadership development model can fill the missed theoretical gap in line with Day's (2001) conceptual context of leadership development. Moreover, using the best methodological practices in leadership development, which have been noticed in the works of scholars (Bolden, 2005; Bush & Grover, 2004; Day, 2001 McCauley et al., 2010), requires conceptual context. The complete academic leadership development model is important to full fill the notion of conceptual context in the leadership development process to evolve academic leaders in leadership roles and processes within the entire public universities. Thus, expanding the complete academic leadership development notion from the program execution levels up to the CEOs team members logically evolves the entire academic leaders in leadership roles and processes in the public university context.

4. CONCLUSIONS

In this study, the research confirms that the complement of the full-range leadership development model and full-scale instructional leadership development model is complementary and important to evolve academic leaders in leadership roles and process in public university conditions. In these aspects, the complement of full-scale instructional leadership and the full range of leadership behaviors are important to develop faculty members' excessive academic work, performance effectiveness, and satisfaction in public universities. Moreover, the four transformational (intellectual stimulation, inspirational motivation, idealized influence-attributions, and idealized influence-behaviors), one transactional (contingent rewards), one instructional (building learning environment), and laissez-faire leadership sub behaviors are useful to improve ALD outcomes; whereas one transformational (individualized consideration), two transactional (active-management by exception and passive management by exception), and the two instructional (defining institutional mission and leading learning programs) leadership sub-behaviors are less important to improve ALD outcome in this study area terrain.

The two transactional leadership sub-behaviors such as active management by exceptions and passive-management by exceptions are less important to develop academic leaders in teaching, research, or community services roles. In this sense, the two transactional sub-factors are less important to significantly expand the processes of ALD activities in public universities. In contrast, these two instructional leadership behaviors sub-factors such as defining the institutional mission and leading learning programs are important to build instructional leadership behaviors at the primary and secondary school levels. In this sense, the concepts are helpful; but, it requires further study to examine its contribution in public universities. In this concern, the complement of the transformational and instructional leadership development notions is helpful to expand the processes of ALD competencies to evolve members in leadership roles and processes in public universities. Thus, the full-scale instructional leadership development and the full-range leadership development models are complementary and the combined conceptual notions advance the understanding of ALD model in public universities.

More important, transformational leadership theories are best known to transform followers into leaders. Expanding the processes of transforming followers into leaders within public universities is useful to evolve all faculty members in academic leadership roles and processes; whereas the intellectual capital network as a medium, partially helps to expand the transformations of every one of the faculty members/academic leaders into the higher ladder academic leadership positions in this research area. In this wisdom, expanding the process of complete academic leadership behaviors within the development of academic leaders is just a desire in Ethiopia's public universities.

In conclusion, the complement of the full-scale instructional leadership development model and the full-range leadership development model is advantageous to frame the complete academic leadership development notion in a learning organization context. Thus, expanding the notion of complete academic leadership behaviors within the academic leaders working from top academic officers down up to program execution level support to evolve faculty members in the academic leadership roles and processes in Ethiopia's public university context.

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