The influence of deans' transactional leadership behaviors on research productivity in public universities: The mediating effect of workplace learning capability

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Abstract

This study examined the effect of transactional leadership behaviors on research productivity in public universities, with organizational learning capability serving as a mediating factor. A quantitative research approach focusing on correlational design was utilized. Data were collected through a survey questionnaire administered to 519 respondents. Both measurement and structural model analyses were conducted, with deans, colleges, and individual academics serving as units of analysis. The findings revealed that deans' contingent reward leadership behaviors significantly and positively influenced the research productivity of academics and colleges, even when controlling for workplace learning capability. Furthermore, the study demonstrated that deans' contingent rewards and active-by-exception behaviors significantly and positively impacted workplace learning capability, accounting for 44.5% of the variance, with moderate and small effect sizes, respectively. Additionally, organizational learning capability exhibited a significant positive effect, explaining 54% of the variance in research productivity and demonstrating a moderate effect size, which indicates an unexplained variance of 46%. Bootstrapping tests confirmed that workplace learning capability partially and fully mediates the relationship between deans' transactional leadership behaviors and research productivity. Consequently, it is imperative for college deans to enhance their contingent reward leadership behaviors and foster workplace learning capabilities to maximize their impact on research productivity.

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Introduction

The degree of commitment by academics to research production and publication, as well as the institution's capacity for learning, the performance of college research output, dissemination, utilization, and overall success, is significantly influenced by the leadership styles of college deans within their respective universities (Thanh & Quang, 2022; Pihie et al., 2011; Quintana et al, 2014; Jung & Avolio, 2000). Consequently, when college deans

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adopt appropriate leadership styles, there is a notable increase in academics' engagement in research production and publication, leading to improved overall work performance and enhanced organizational success (Thanh & Quang, 2022; Vera & Crossan, 2004).

The leadership styles adopted and practiced by college deans in public universities exhibit significant variations between developed and developing countries, largely due to differences in leadership contingent contexts. In developing nations such as Ethiopia, transactional leadership styles are predominantly employed. This preference can be attributed to the functional characteristics that define many modern organizations, including clear expectations between leaders and followers, established organizational structures, defined chains of command, role identification, adherence to rules, as well as motivation through rewards and penalties (Young et al., 2021).

Moreover, the institutional context—characterized by a relatively low maturity level among both leaders and followers, limited flexibility, and a lack of adaptability to change—coupled with extrinsic factors such as social, political, and cultural influences, often hinders the adoption of more advanced and contemporary leadership styles or theories. Such styles include transformational, democratic, servant, distributive, and ethical leadership (Yukl & Muhsud, 2010). Furthermore, it is important to note that many of the contemporary leadership theories have their roots in Western socio-cultural contexts, which may not resonate with the experiences and perspectives of indigenous populations in non-Western nations (Ly, 2020).

To this end, many scholars (e.g., Johns, 2023; Nazarian et al., 2017) have observed that if transactional leadership behaviors within large institutions are supported by conducive contexts—such as flexibility, stability, a culture of learning, innovation, and adaptability—there is a significant opportunity for these leadership styles to evolve toward more transformational, democratic, and other progressive approaches.

Ethiopian university college deans employ transactional leadership styles to effectively manage the day-to-day operations within their respective institutions. They utilize contingent rewards to encourage positive work behaviors among faculty members, while also implementing corrective measures to deter undesirable behaviors. Moreover, deans may opt to delay intervention in response to minor infractions, provided that such actions are deemed trivial, less harmful, and pose minimal risk (Ahmed et al., 2021; Podsakoff et al., 2006; Jung & Avolio, 2000). Transactional leadership facilitates the establishment of clear goals, incentives, and feedback mechanisms, thereby enhancing motivation, performance, and organizational learning among academic staff. The specific nature and intensity of transactional leadership behaviors can vary according to context and the individual attributes of employees. Particularly, certain transactional behaviors, particularly contingent rewards, may prove more effective than others—such as active and passive leadership by exception—in fostering workplace learning capabilities and research productivity.

Organizational learning capability acts as a mediating construct that influences the relationship between deans' transactional leadership behaviors and academics' research productivity (Jansen et al., 2009; Vera & Crossan, 2004). It is regarded as a strategic leadership concept and a source of human capital heterogeneity, potentially serving as a foundation for institutional competitive advantage (Jansen et al., 2009; Vera & Crossan, 2004). To ensure long-term sustainability and success, organizations must adapt and innovate

in response to evolving market conditions, competition, customer needs, technological advancements, and other contextual factors.

Organizational learning and the concept of the learning organization are often perceived as synonymous; however, a critical examination by scholars reveals notable differences between the two. Organizational learning occurs when academics collaboratively analyze and synthesize information from diverse sources while engaging with one another to achieve organizational objectives. In contrast, a learning organization is characterized by its ability to transcend the limitations imposed by past experiences, continuously adapting and discovering what is most effective and efficient for its operations (Yaşlıoğlua et al., 2014).

Some organizations excel in both concepts, while others, particularly in developing African countries, struggle with one or both. Organizational learning—be it formal, informal, or non-formal—serves as a fundamental source of strategic thinking (Jansen et al., 2009; Vera & Crossan, 2004; Senge, 1990) and is pivotal for gaining a competitive advantage (Jerez-Go´meza et al., 2005; Senge,1990; Liao et al., 2017). This is especially pertinent to the development of research outputs in universities, ultimately facilitating the achievement of short- and long-term goals that lead to institutional success.

Consequently, numerous scholars support the hypothesis that the capability for workplace learning positively influences research productivity in public universities, contingent upon the prevailing practices in place (HERQA, 2008; Alemu, 2023). Furthermore, dynamic capabilities and the resource-based view theory—including valuable, rare, inimitable, and non-substitutable (VRIN) resources—are essential to enhancing workplace learning capabilities, although such resources remain insufficient in Ethiopia (Fosci et al., 2019; Zulfqar et al, 2021; Zhou et al, 2019).

Research represents a systematic endeavor to seek and investigate solutions to prevailing problems while acquiring new knowledge. Its primary objectives encompass the description, prediction, and control of various phenomena. In the context of Ethiopia's first-generation universities, research encompasses the processes of production, dissemination, and utilization, in accordance with their foundational mission (MOSHE, 2020).

Research production primarily focuses on the quantity and quality of projects undertaken (Fosci et al., 2019). Research dissemination pertains to the frequency and impact of publications in indexed sources, as well as metrics such as the h-index and citation counts (Kpolovie & Dorgu, 2019). Similarly, research utilization involves the extent to which individuals, institutions, or nations leverage research outputs to address challenges, manage daily operations, make informed decisions, and shape policy issues (Fosci et al., 2019; Kpolovie & Dorgu, 2019).

The status of these research activities at universities in the Amhara Regional State has not been systematically investigated against global, African, national, and institutional standards (Kpolovie & Dorgue, 2019). This limitation may stem from misalignments among leadership styles, the contextual factors associated with both academic staff and leaders, and the varying levels of research productivity across institutions. In this context, HERQA (2008) reported in its external quality audit of first-generation universities, including Bahir Dar and Gondar universities, that research productivity in Ethiopia's first-generation universities was markedly low. Contributing factors included a shortage of qualified academic personnel, insufficient time allocated for research, inadequate incentives, inadequate funding, and

ineffective leadership. This was particularly noteworthy given the presence of established hierarchical roles, such as the Vice President for Research and Community Service, research and publication officials at the institutional level, and the Vice Dean for Research and Postgraduate Studies at the college level.

This study, therefore, aims to explore the relationships among transactional leadership styles, organizational learning capability, and research productivity, which are considered key determinants of sustainable research productivity and related developments in universities located in the Amhara regional state of Ethiopia. To this end, the following hypotheses were formulated: (1) there exists a significant positive relationship between academics' perceptions of deans' transactional leadership behaviors and their research productivity within their respective colleges in the Amhara regional state; (2) the perceived transactional leadership behaviors of deans significantly influence the development of academics' workplace learning capabilities in their respective colleges; (3) a significant relationship exists between the organizational learning capability of colleges and their research productivity; and (4) workplace learning capability plays a significant mediating role in the relationship between academics' perceptions of deans' transactional leadership behaviors and their research productivity in their respective colleges.

Theoretical Framework

The theoretical framework of this study is grounded in multiple interrelated theoretical perspectives, specifically the resource-based view (RBV), dynamic capabilities theory, and leadership theories. The RBV posits that organizations can attain and maintain a competitive advantage through the strategic utilization of valuable, rare, inimitable, and non-substitutable (VRIN) resources (Zulfqar et al., 2021). These resources may be both tangible and intangible, encompassing elements such as human capital, physical assets, intellectual property, and organizational culture.

Additionally, dynamic capabilities refer to an organization’s capacity to sense, seize, and reconfigure its resources and processes in response to evolving environmental conditions. Such dynamic capabilities are crucial for universities aiming to establish and sustain a competitive advantage within volatile labor markets (Zhou et al., 2019; Lopez-Cabrales et al., 2016).

Methods

Research Design

This study utilized a positivist paradigm and a correlational design, employing structural equation modeling. It aimed to provide robust evidence regarding the impact of academics' perceptions of deans' transactional leadership behaviors on both the workplace learning capabilities of colleges and the research productivity of academic staff and institutions.

Participants

A total of 519 academics participated in this study, with 197 from Bahir Dar University (BDU), 165 from the University of Gondar (UoG), and 157 from Debre Markos

University (DMU). These institutions, which represent both first and second-generation universities in Ethiopia's Amhara regional state, were selected randomly through a lottery method from a pool of five universities (two first-generation and three second-generation). The inclusion of both generations was based on their similar characteristics in terms of faculty size, technological resources, economic capacity, and infrastructure. Given that the researchers were affiliated with these universities and belonged to the Amhara ethnic group, they had a unique advantage in accessing participants and identifying pertinent issues for the study.

As far as the demographic characteristics of the participants is concerned, 450 (86.7%) were male academics, while 69 (13.3%) were female academics. In terms of educational qualifications, 23 (4.43%) held a Bachelor's degree, 393 (75.72%) possessed a Master's degree, and the remaining 103 (19.84%) were Doctoral degree holders. Furthermore, with regard to teaching experience, 172 (33.14%) had fewer than 5 years of experience, 206 (39.69%) had between 5 to 10 years of experience, and 141 (27.16%) had more than 10 years of teaching experience.

Instrumentation

Contingent rewards refer to the availability and equitable distribution of reinforcements or rewards as a means of motivating followers, a concept underscored by various scholars in the field. To measure this construct, four items were developed with a six-point Likert-type scale, ranging from 1 (strongly disagree) to 6 (strongly agree). Example items included: "Deans in your college make clear what subordinates are rewarded for achieving performance goals" and "Deans in your college make specific discussions regarding who is responsible for meeting targets". The coefficient alpha for internal consistency reliability was .93, exceeding the threshold of .70, indicating a highly reliable scale for measuring deans' contingent reward transactional leadership behavior (Collier, 2020; Kline, 2016). All leadership items were derived from the standardized multi-factor leadership questionnaire (SMFLQ) developed by Bass, Avolio, Jung, and Berson (2003).

The Leadership by Exception—Active scale measures college deans' non-leadership behavior or delayed intervention to followers' misbehavior or non-accomplishment of tasks as an approach to leadership. It was measured with 4 items, including: "Your college deans focus their attention on instructors' irregularities, mistakes, exceptions, and deviations from established standards," and "Your college dean devotes their full attention to addressing mistakes, complaints, and failures". The coefficient alpha value was 0.944 (>0.7) indicating a high level of internal consistency among the items.

Conversely, Leadership by Exception—Passive captures the non-interventionist tendencies of college deans, whereby they delay intervening in instances of follower misconduct or non-fulfillment of responsibilities. This dimension was assessed through four items, including: "Your college deans do not intervene until problems become serious," and "Your college deans regard academics as a secondary priority; they refrain from addressing issues until the college is in significant disarray." The coefficient alpha for this scale was 0.944 (greater than 0.70), demonstrating strong internal consistency among the measurement items.

The organizational learning capability scale utilized in this study was adapted from the work of Jerez-Gómez et al. (2005), which draws upon Senge's five disciplines of learning and Mets' three-dimensional learning model. The learning capabilities of the deans and academic staff were assessed with regard to several key dimensions, including leaders' commitment to fostering a learning culture, perspectives on system interconnectivity, openness to experimentation, and behaviors related to knowledge transfer and integration. These elements collectively formed a primary construct, which was evaluated through a 10-item scale encompassing the aforementioned dimensions. The reliability of this scale was evidenced by a coefficient alpha of 0.921, indicating a high level of internal consistency among the items. Sample items for this construct include: "My college deans promote experimentation and innovation as a means of enhancing work processes"; "The performance of my college has been positively impacted by the new knowledge, skills, and affective learning acquired over the past five years"; and "Within my college's culture, instructors regularly express their opinions and provide suggestions regarding procedural and methodological practices".

Following a comprehensive factor analysis, six items were selected to assess the development of research and publication performance. The Balanced Scorecard (BSC) performance measurement model provided the framework for formulating these scale items. These six items were measured on a 6-point Likert-type scale, with response options ranging from 1 (strongly disagree) to 6 (strongly agree). Representative sample items include: "The research presentations from your college effectively promote critical thinking," "The research outputs and publications from your college foster innovation and ensure the preservation of knowledge for future generations", and "The research conducted by your college addresses pressing societal issues such as poor lifestyle choices, injustice, food insecurity, health disparities, and the quality of education". The reliability coefficient, measured using Cronbach's alpha for this sub-scale, was found to be 0.903, indicating a high level of internal consistency.

Instrument Validation

Table1

Measurement Model fit Indices (CFA)

CFA	CMIN	DF	P	PCMIN/DF	RMSEA	SRMR	GFI	CFI	TLI
Initial First-Order CFA	935.041	314	.000	2.978	.062	0.066	0.882	0.938	0.930
Modified First-Order CFA	684.315	305	.000	2.244	0.049	0.064	0.913	0.962	0.956
Difference	250.726	9		0.734	0.013	0.002	0.031	0.024	0.026

Note. CFA= confirmatory factor analysis, CMIN= Chi-square minimum ($\chi 2$), CMIN/DF= Chi-square/degree-of-freedom ratio, RMSEA= Root Mean Square Error of Approximation, CFI= Comparative Fit Index, TLI=Tucker-Lewis Index, SRMR=standardized root mean square residual. Fit indices acceptable criteria= CMIN/DF (< 5.0), RMSEA and SRMR < .08, (CFI, TLI, > 0.90)

Standardized Item Loadings, R^2 and P-values of Measurement Model CFA

All standardized factor loadings (βs), as shown in Table 2, were greater than 0.6. For instance, the standardized factor loading ranged from 0.68 to 0.83, p< .001, for the indicators

of research productivity. The indices of workplace learning abilities also had standardized factor loadings that ranged from 0.682 to 0.771, p< .001.

Table 2

Confirmatory Factor Analysis Results

Latent Constructs	# of Items	Cronbac alpha (α)	Range of R^2	Range of β	P-Value
Research Productivity (RP)	6	0.903	0.463-0.680	0.680-0.825	P<0.001
Workplace learning Capability(WPLC)	9	0.921	0.465-0.601	0.682-0.771	P<0.001
Leadership Contingent Rewards(LCR)	4	0.930	0.668-0.830	0.817-0.911	P<0.001
Leadership By Exception Active(LBEA)	4	0.858	0.419-0.773	0.648-0.879	P<0.001
Leadership By Exception Passive(LBEP)	4	0.944	0.710-0.874	0.843-0.935	P<0.001

Construct Validity and Reliability Assessment

A confirmatory factor analysis (CFA) was used to assess the constructs' composite reliability, average variance extracted (AVE), convergent validity, and discriminant validity. CFA is a crucial statistical technique for evaluating the validity and reliability of theoretical notions (Brown, 2015).

Composite Reliability

Another popular method for evaluating construct reliability is composite reliability. It is also known as the factor rho coefficient or Raykov's Rho (r) (Collier, 2020; Kline, 2016). The composite reliability has the same range and cutoff criterion for the acceptable level of dependability, i.e., >.70, as Cronbach's alpha level for internal consistency reliability (Collier, 2020). With this criterion, Table 3's composite reliability values, which revealed better composite reliability of the constructs, ranged from 0.80 for the leadership by exception passive construct to 0.97 for the leadership contingent rewards construct.

Convergent Validity

It regulates construct validity via stipulating the extent in which every indicator of a given concept is gauging a construct they are intended to measure (Collier, 2020). The parameter used for checking convergent validity accounted to AVE value greater than .50 (Collier, 2020; Hair et al., 2019). As shown in Table 3, AVE values for all constructs ranged from 0.53 for the indicators of work-place learning capability to 0.84 for the indicators of leadership contingent rewards, which suggested adequate convergent validity across constructs.

Discriminant Validity

This kind of cogency assessments of a construct is determined using the shared variance technique (Collier, 2020) and to prove the absence of excessive correlation issues. In the shared variance method, as Collier (2020) points out, the discriminant validity of each construct can be determined by computing the shared variances between constructs and

comparing them to the AVE values for each construct. Similarly, the discriminant validity can be established if inter-correlations among a set of constructs are not too high (commonly, < .85) (Brown, 2015; Collier, 2020; Kline, 2016). In this study, all coefficients for inter-correlations between constructs were below 0.85, which ranged from -0.166 for the relationship between the colleges' research production development, and deans' leadership by exception passive behavior to 0.625 for the relationship between the colleges' research production development and the colleges' workplace learning capability. This proof demonstrated the discriminatory nature of every construct used in the current study. Similar to this, the shared variance between organizational learning capability and research product development was (0.625)2 = 0.39, which was much lower than the AVE for organizational learning capability (0.53) or for research product development (0.61). This evidence demonstrated the discriminatory nature of these notions. Also, the shared variance between organizational learning capability and leadership contingent reward behavior (0.573)2 = 0.32 is significantly lower than the AVE for organizational learning capability (0.53) or AVE for contingent reward leadership conduct (0.84). This evidence demonstrated the discriminatory nature of these constructs. In conclusion, all constructs taken into account in the current investigation demonstrated good discriminant validity.

Table 3

Inter-correlations, Composite Reliability, and Average Variance Extracted Generated from CFA

Constructs	CR	AVE	MxSV	1	2	3	4	5
1.RP	0.94	0.61	0.39	1				
2.WPLC	0.945	0.53	0.39	.625*	1			
3.LdCR	0.97	0.84	0.32	.496*	.573*	1		
4.LdBEA	0.92	0.65	0.18	.241*	.271*	.210*	1	
5. LdBEP	.80	.80	0.18	-.166*	-.260	.234*	.426*	1

Note. CR=Composite reliability, AVE= Average variance extracted, MxSV=Maximum shared variance *P<.001

Ethical Considerations

Participants in the study were fully informed about the voluntary nature of their involvement. They were assured that the data collected would be utilized anonymously and strictly for research purposes. Initially, the authors obtained oral consent from the participants and were subsequently followed by their signing of a consent form to formally affirm their voluntary participation in the research. This process was duly approved by the research ethics committee.

Results

Effect of Structural Model Test on Hypothesized Path Influences

Table 4

Structural Model Test Results Predicting research productivity from Transactional Leadership Style Dimensions and Contingency Context Factors (WPLC)

Hypothesized Relationships	Beta	C.R.	P. Value	Decision
1.TrzLdCR → WPLC	.553	10.786	P<.001	Supported
2. TrzLdBEA → WPLC	.210	4.674	P<.001	Supported
3. TrzLdBEP → WPLC	-.098	-2.193	P=.028	Supported
4. WPLC → RPPD	.659	10.537	P<.001	Supported
5. TrzLdCR → RPPD	.122	2.259	P=.024	Significant
6. TrzLdBEA → RPPD	.030	.706	P=.480	Not Significant
7.TrzLdBEP → RPPD	.066	1.545	P=.122	Not Significant
Squared Multiple Correlation (R^2):				
RPPD	.540			
WPLC	.445			

Note. Model fit statistics: $\chi 2 = 684.315$, df= 305, p <.001, $\chi 2 /df = 2.244$, CFI = .962, TLI = .956, IFI=.962, PNFI=.811, PCFI=.836, RMSEA =.049 at 95%CI [.044, .054], and SRMR = .064, GFI=.913.

Results from the modified structural model test indicate that deans' contingent reward leadership behavior (S.E. = .047, p < .001, 95% CI [.462, .639], $f^2 = 0.22$) and deans' active leadership by exception behavior (S.E. = .044, p < .001, 95% CI [.122, .299], $f^2 = 0.068$) exert a significant positive influence on the development of workplace learning capabilities within their respective colleges. Conversely, passive leadership by exception behavior (S.E. = .035, p = .028, 95% CI [-.204, -.013], $f^2 = -0.063$) showed a significant negative effect on these capabilities. The standardized regression coefficients suggest that a one standard deviation increase in deans' contingent reward leadership behavior, active leadership by exception, and passive leadership by exception correspond to increases of .553, .210, and decreases of -.098 standard deviations, respectively, in the workplace learning capabilities of both deans and academics in their colleges. The squared multiple correlation value of .445 indicates that 44.5% of the variance in the workplace learning capabilities of deans and academics can be attributed to the combined influence of deans' contingent reward leadership and both active and passive leadership by exception behaviors. The underlying rationale for this hypothesis testing is that transactional leadership provides clear goals, incentives, and feedback, thereby enhancing research motivation, productivity performance, and overall workplace learning outcomes among academics.

The workplace learning capability of college deans and academics has a significant and positive impact on perceived research productivity, as evidenced by Path B ($\beta = 0.659$, C.R. = 10.537, p < 0.001). The effect size, measured by Cohn's $f^2 = 0.24$, indicates a medium effect of WPLC on research productivity. Moreover, a one standard deviation increase in WPLC correlates with a 0.569 standard deviation increase in research productivity. The squared multiple correlation coefficient of 0.54 suggests that WPLC accounts for 54% of the variance in research productivity, while the remaining 46% is attributed to other factors. According to dynamic capabilities theory, these findings imply that workplace learning capability enhances the acquisition, creation, sharing, and application of knowledge among academics. This, in turn, bolsters their sensing, seizing, and reconfiguring capacities. Consequently, these dynamic capabilities empower academics to generate and disseminate new knowledge, thereby improving both the quantity and quality of research productivity.

The leadership behaviors of deans, specifically in the realms of contingent rewards and active leadership by exception, have been found to exert a positive and significant direct

influence on the development of research and publication performance (Path C). The respective coefficients for these behaviors indicate substantial effects: contingent reward leadership behavior ($\beta = 0.510$, CR = 9.574, $p < 0.001$) and active leadership by exception ($\beta = 0.184$, CR = 3.769, $p < 0.001$). In contrast, passive leadership by exception demonstrated a non-significant direct influence on research and publication performance ($\beta = 0.006$, CR = 0.125, $p = 0.900$).

The squared multiple correlation coefficient for contingent reward leadership behavior (0.25) suggests a comparatively stronger impact on perceived research and publication performance in relation to active leadership by exception (0.058) and passive leadership by exception (-0.027). Besides, the effect size (f^2) for contingent reward leadership behavior (0.19) indicates a medium effect, whereas both active leadership by exception (0.054) and passive leadership by exception (-0.026) demonstrate a small effect size.

From the perspective of dynamic capabilities theory, these findings imply that the contingent rewards leadership behavior of deans can be classified as a distinct type of dynamic capability. Specifically, it plays a critical role in establishing clear goals, incentivizing positive academic behaviors, and providing feedback on academics' responses to tasks. Collectively, these factors significantly contribute to enhancing academic performance, as measured by research productivity indicators such as the number of research projects undertaken, indexed publications, conference paper presentations, innovative outputs, and citations.

College deans can enhance faculty research competencies and productivity through various strategies, including formal education, short-term training programs, and the organization of conferences or forums for knowledge exchange, as well as mentorship and research practice initiatives. Specific activities that can foster research competence and boost productivity include participation in research projects, workshops, seminars, and conferences; reading and reviewing scientific literature and publications; writing and publishing research papers, reports, and proposals; applying for research grants and funding opportunities; engaging in peer review processes; developing and maintaining a research portfolio and personal research plan; offering and seeking guidance from fellow researchers; exploring and capitalizing on collaborative research opportunities; utilizing and creating research tools and platforms; communicating and disseminating research findings and their implications to diverse audiences and media; and applying research knowledge to address real-world problems and contexts. Collectively, these activities constitute valuable VRIN resources within the Resource-Based View Theory and dynamic capabilities, which are critical for maintaining competitive advantages and achieving success in colleges and universities (Zulfqar et al., 2019).

Bootstrapping Significance Test of Mediation Analysis between Exogenous and Endogenous Constructs

Given that the constructs in the path analysis indicated significant structural relationships, mediation analysis was conducted to determine the direct and indirect effects of the exogenous latent variables—specifically, the dimensions of Deans' transactional leadership behavior—on the outcome variable of research productivity, with workplace learning capability serving as the mediator.

The mediation analysis revealed that deans' contingent reward leadership behavior had a significant direct effect (β = .122, p = .042) and a significant indirect effect (β = .362, 95% CI [.280, .471], p = .003) through WLC on instructors' perceived development of research and publication performance. Consequently, a significant total effect was observed (β = .486, p = .003). These findings indicate that WPLC partially mediates the relationship between deans' contingent rewards leadership behavior and the college's research production and dissemination at the respective university.

Similarly, deans' leadership by exception (active) exhibited a non-significant direct effect (β = .030, p = .494) but a significant indirect effect (β = .139, p = .005, 95% CI [.077, .201]) through WPLC on instructors' perceived research and publication performance, resulting in a significant total effect (β = .169, p = .006). This evidence suggests that WPLC fully mediates the relationship between perceived deans' leadership by exception (active) behavior and instructors' research production and publication development within their respective college.

On the other hand, deans' leadership by exception (passive) demonstrated a non-significant direct effect (β = -0.066, p = .094) as well as a significant indirect effect (β = -0.065, 95% CI [-.136, -.009], p = .023) via WPLC on academics' perceived research and publication performance, yielding a non-significant total effect (β = .001, p = .973). This evidence implies that WPLC fully and inversely mediates the relationship between deans' leadership by exception (passive) behavior and academics' research production and publication development in their respective college.

Additionally, Cohen's f^2 values demonstrated a medium to small effect size for the direct effects of both exogenous variables, at .164 and .026, respectively. Furthermore, a medium effect size of .215 was observed for the indirect effect, mediated by learning capability, of contingent reward leadership behavior and active management-by-exception on the perceived development of research and publication performance, as presented in Table 5.

Table 5

Boot Strapping Analyses Results

Path ways	Direct Effect	Indirect Effect	Total	Boot strapping Bias-corrected 95% CI		Significance	Decision
				Lower	Upper		
LdCR→ WPLC→ RPP	.122*(2.259)	.365	.486	.280	.471	.003	Partial mediation
LdBEA→WPLC→RPP	.030†(.706)	.139	.169	.077	.201	.005	Full Mediation
LdBEP→WPLC →RPP	.066†(1.545)	-.065	.001	-.136	-.009	.023	Full mediation

Note: *= significant p. value, †= non-significant p. value

The mediation of learning capability plays a significant role in the practice of deans regarding the three transactional leadership behaviors employed to enhance research productivity. However, this mediation is subject to the type and intensity of transactional leadership behaviors, which can vary depending on the specific context and the characteristics of the academic personnel involved. For example, Deans' behaviors characterized by contingent rewards are generally more effective than those based on punishment or delayed responses in fostering workplace learning capability and boosting research productivity (Podsakoff, 2006).

Furthermore, the level and quality of workplace learning capability are likely influenced by the organizational culture, structure, and resources that either facilitate or impede learning activities. Certain learning activities may prove more relevant and advantageous than others in cultivating dynamic capabilities and enhancing research productivity. Additionally, the measurement and evaluation of research productivity are subject to various external influences, including the availability and accessibility of research funding, facilities, and collaborative networks, as well as the quality and quantity of research partnerships and competitive factors, alongside the prevailing standards and expectations of the academic community and broader society.

Status of Research Productivity

Table 6

Academics' Research Publication in Non-Predatory Journals by University from 2017 to 2021 academic years

No. of Articles	BDU (n=197)		UoG (n=165)		DMU (n=157)	
	No. of staff * (Articles)	%	No. of staff * (Articles)	%	No. of staff * (Articles)	%
0	86(0)	43.6%	75(0)	45.4%	71(0)	45.2%
1	24(24)	12.2%	16(16)	9.7%	13(13)	8.2%
2	23(46)	11.7%	23(46)	13.9%	20(40)	12.7%
3	11(33)	5.6%	10(30)	6.1%	17(51)	10.8%
4	11(44)	5.6%	7(28)	4.2%	8(32)	5.1%
5	7(35)	3.5%	5(25)	3%	8(40)	5.1%
>5	35(462)	17.8%	29(327)	17.6%	20(231)	12.7%
Total	197(644)	100%	165(472)	100%	157(307)	100%
% of >5 article	71.7%		69.3%		75.2%	
Mean value	1:3.26/5year		1:2.86/5year		1:1.95/5Year	
SD		6.65274		4.68378		4.19242
Min-Max	(0-60)		(0-25)		(0-23)	

Source. Academics' response data organized by the researchers

As presented in Table 6, the number of academics at BDU, UoG, and DMU who did not publish at least one article in a non-poaching journal over the past five years (2017–2021) was 86 (43.6%), 75 (45.4%), and 71 (45.2%), respectively. These figures underscore a research publication culture that is unsatisfactory and below expectations at all three institutions. A significant proportion of published research articles is attributed to a small number of academics: at BDU, 71.7% of the publications were produced by 35 instructors out of a total of 197; at UoG, 69.3% of articles were authored by 29 academics from a total of 165; and at DMU, 75.2% of the articles were produced by 20 researchers out of 157 over the same five-year period.

Additionally, the majority of academics at each institution published a relatively modest number of articles: BDU had 76 academics contributing to 182 (28.5%) research articles, UoG had 61 academics publishing 145 (30.7%), and DMU had 66 academics with 76

(24.7%) articles. These statistics suggest that a significant number of academics are associated with a lower proportion of overall published research. This scenario may reflect either limited access to research grants and publishing opportunities or inadequate research and publication skills among the majority in comparison to the more prolific groups. Overall, the research and publication culture across these universities indicates a pressing need for enhancement to align with both local and global standards and best practices.

Discussion

The main purpose of the present study was to investigate the impact of academic perceptions of deans' transactional leadership behaviors and the workplace learning capabilities of colleges on research productivity within their respective universities, framed within the context of RBVT and dynamic capabilities theory. Furthermore, the study explored the mediating role of workplace learning capability in the relationship between deans' transactional leadership behaviors and the research productivity of colleges within these institutions.

The study confirmed that the transactional leadership behaviors of deans (contingent rewards and active leadership by exception) were significantly and positively associated with the perceived research productivity of their respective colleges, even when controlling for the mediator of workplace learning capability. Notably, the deans' use of contingent rewards and active leadership by exception exhibited a positive and significant indirect effect on the colleges' research productivity through organizational learning capability across all participating universities (Ur-Rahman et al., 2019; Quintana et al., 2014; Nazarian et al., 2017). These results underscore the importance of the first dimension of dynamic capabilities theory, which emphasizes strategic and operational leadership as essential for universities to maintain a competitive advantage in research productivity and other performance metrics within their contexts (Lopez-Cabrales et al., 2016).

The deans' provision of rewards and reinforcements in different forms motivate subordinates (academics in this case) to carry out successfully research productivity activities and achieve the first mission of research intensive universities in Ethiopia (MoSHE, 2020). Similarly, the Deans' practice of active punishment interventions undertaken to stop the misbehaviors of academics in line with reacting and achieving college missions and visions up to standards such as research productivity to institutional, national and global standard thresholds(Nawaz et al. 2022; Podsakoff, 2006).

The deans' provision of various rewards and reinforcements serves to motivate their subordinates—specifically, the academic staff—to successfully engage in research productivity activities, thereby fulfilling the primary mission of research-intensive universities in Ethiopia (MoSHE, 2020). In parallel, the deans' implementation of active punitive measures aims to address and curtail academic misconduct in alignment with the colleges' missions and visions, thereby adhering to institutional, national, and global standards for research productivity (Nawaz et al. 2022; Podsakoff, 2006).

Conversely, the deans' passive leadership behaviors demonstrated a negligible direct impact on their respective colleges' research productivity. However, there was a significant inverse indirect effect mediated by workplace learning capability, which contributed to the

development of research output (Nazarian et al., 2017). These passive interventions often manifest as punitive measures employed in response to varying degrees of academic misconduct within the colleges (Podsakoff, et al 2006; Pihi et al 2011; Quintana et al, 2014; Jung & Avolio, 2000). Notably, deans frequently resort to these passive punitive measures, next to the use of contingent rewards, in their leadership paradigm.

In addition, the study revealed that deans' use of contingent rewards and their active leadership-in-exception behaviors significantly influenced the workplace learning capabilities of academics within their respective colleges. These findings are consistent with previous research (Jansen et al., 2009; Vera & Crossan, 2004). From the perspectives of resource-based view theory and dynamic capabilities theory, achieving a sustainable competitive advantage depends on effectively applying organizational learning functions, which are vital dynamic capabilities that enhance research productivity in colleges (Brockmand & Morgan, 2003; Keskin, 2006).

The structural model testing of organizational learning capability dimensions—such as leadership commitment to fostering a learning culture, functional interrelatedness within the system, openness and experimentation among academics, and the processes of knowledge transfer and integration—demonstrated a significant direct effect on research output and publication development performance (Tippins & Sohi, 2003). Furthermore, these dimensions acted as crucial mediators in the relationships between transactional leadership styles and research productivity performance (Garcia-Morales et al., 2006; Jiménez-Jiménez & Sanz-Valle, 2011). As organizational learning capability represents both a dynamic capability and a VRIN resource within RBVT, its effective utilization is essential for universities seeking to sustain their competitive edge in both local and global markets (Zhou et al., 2019; Eisenhardt & Martin, 2000).

Overall, the findings of this study corroborate previous research regarding the transactional leadership behaviors of deans and the mediating effects of contextual factors on research productivity in terms of both volume and quality at the college and university levels (Ur-Rahman et al., 2019; Quintana et al., 2014; Senge, 1990; Liao et al., 2017). Ultimately, our discussion affirms that deans' transactional leadership behaviors significantly impact the research productivity of their colleges, with these synergies being enhanced by the institutions' workplace learning capabilities.

Conclusions and Implications

Conclusion

The findings of this study reveal that deans' contingent reward leadership behaviors and active leadership by exception positively influence the research productivity of colleges. Conversely, deans' passive leadership by exception, characterized by delayed intervention, exerts a negative impact on research productivity across the universities examined. Additionally, the organizational learning capabilities of the colleges—encompassing leaders' commitment, system interconnectedness, openness to experimentation, and knowledge transfer and integration—significantly mediate the relationship between deans' transactional leadership behaviors (which include rewards, punishments, and non-leadership) and research productivity.

Therefore, it is imperative to enhance faculty workplace learning capabilities by addressing their identified needs for organizational learning. The interplay between leaders' leadership behaviors and the contingent contexts influencing those behaviors is critical for fostering research productivity that aligns with institutional, national, continental, and global performance standards.

Implications

This research presents several important implications for practice within higher education. Primarily, it emphasizes the crucial role of college deans, an aspect that is often overlooked in favor of technical improvements. Our findings indicate that the leadership style of deans can foster a synergistic interplay with organizational learning, thereby enhancing research output and publication performance within their respective colleges. Consequently, it is imperative for college deans to implement systematic workplace learning practices that can foster competitive advantages and enable their institutions to surpass rival universities.

Secondly, this study claims the significance of deans' leadership styles and their relationship to research production and publication as key dimensions of university performance, particularly within the ever-evolving context of workplace learning. College deans should actively cultivate the workplace learning capabilities of their academic staff and stimulate an enduring enthusiasm for learning. By doing so, they can significantly enhance both research output and publication performances, ensuring their colleges maintain a competitive edge in the global arena.

The third implication drawn from our integrated framework highlights the necessity for college deans to prioritize leadership practices that nurture organizational learning capabilities alongside the development of research production, dissemination, and utilization within their institutions. Such a strategic focus is essential for achieving competitive advantages on both local and global scales.

Moreover, our findings suggest that the contingent reward aspect of transactional leadership represents the most effective behavior for enhancing academics' workplace learning capabilities, effectively addressing researchers' needs, and subsequently contributing to the college's research production, publication, and overall institutional effectiveness. By employing contingent rewards, college deans can set attainable goals, articulate clear visions, identify the needs of their subordinates, and align these needs with expectations for performance and corresponding rewards. Conversely, deans should avoid non-corrective transactional leadership styles, such as passive leadership by exception, as these approaches have been shown to produce detrimental effects on academics' research production and publication performance.

Theoretical Contributions

This study enhances the theoretical understanding of deans' transactional leadership behaviors and their impact on research productivity within Ethiopian higher education institutions (HEIs). It identifies key elements of transactional leadership and contextual factors that refine existing leadership frameworks aimed at improving HEI performance. While previous research has focused on modern leadership styles such as transformational

and ethical leadership, it often overlooks the specific contextual challenges faced by institutions in developing nations like Ethiopia. Therefore, it is crucial for federal policymakers and education ministers to acknowledge the importance of transactional leadership and workplace learning capabilities in boosting research productivity, measured against both local and global standards. The study also emphasizes the mediating effect of college deans' and academics' workplace learning capabilities in the relationship between deans' transactional leadership and research output.

Limitations of the Study

Despite the efforts invested in this research, several limitations warrant consideration in future studies. First, the data utilized in this study are cross-sectional in nature. Future investigations could employ panel data or experimental methods to further elucidate the causal relationships among the variables. Second, our analysis assumes a homogeneous approach to research production and publication performance within Ethiopian universities. Future research could explore the applicability of our theoretical model across diverse contexts, both globally and within the standards of research production and dissemination in Africa. Third, while this study measures organizational learning variables and research productivity through a first-order structural model, future research could benefit from the application of a second-order structural model to enhance analytical depth.

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References

Ahmed I., Z., Abid, G., Arshad, M., Ashfaq, F., Athar, M. A. & Hassan, Q.(2021). Impact of authoritative and laissez-faire leadership on thriving at work: The moderating role of conscientiousness. *Eur. J. Investig. Health, Psychol. Educ. 20*(11), 667–685. https://doi.org/10.3390/ejihpe11030048

Alemu, A. (2023). Factors determining research productivity in Ethiopian Universities: The case of Madda Walabu University. *Social Sciences & Humanities Open*, *8*(1), 1-8, https://doi.org/10.1016/j.ssaho.2023.100562

Bass, B. M., Avolio, B. J., Jung, D. I., & Berson, Y. (2003). Predicting unit performance by assessing transformational and transactional leadership. *Journal of Applied Psychology*, *88*, 207-218. http://dx.doi.org/10.1037/0021-9010.88.2.207

Brockman, B. K. & Morgan, R. M. (2003). The role of existing Knowledge in new product innovativeness and performance. *Decision Sciences, 34*(2), 385-419

Brown, T. A., (2015). *Confirmatory factor analysis for applied research* (2nd ed.). The Guilford Press

Collier, J. E. (2020). *Applied structural equation modeling using AMOS: Basic to advanced techniques*. Routledge.

Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: what are they? *Strategic Management Journal*, *21*(10-11), 1105-1121. https://doi.org/10.1002/1097-0266(200010/11)21:10/11%3C1105::AID-SMJ133%3E3.0.CO;2-E

Fosci, M., Loffreda, L., Chamberlain, A. & Naidoo, N. (2019). *Assessing the needs of the research system in Ethiopia: Report for the SRIA program.* The UK Department for International Development, UKAID, Research Consulting.

Garcia-Morales, J., Llorens-Montes, F. J. & Verdu-Jover, A. J. (2006). Antecedents and consequences of organizational innovation and organizational learning in entrepreneurship. *Industrial Management and data system 106*(1) 21-42. https://doi.org/10.1108/02635570610642940

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning, EMEA.

Higher Education Relevance and Quality Agency (HERQA) .(2008). Bahir Dar university institutional quality audit report. *HERQA Publication Series-027*

Jansen, J. J., Vera, D., & Crossan, M. (2009). Strategic leadership for exploration and exploitation: The moderating role of environmental dynamism. *The Leadership Quarterly, 20, 5-18*. https://doi.org/10.1016/j.leaqua.2008.11.008

Jerez-Go´meza, P., Ce´spedes-Lorentea, J. & Valle-Cabrera, R. (2005). Organizational learning capability: a proposal of measurement. *Journal of Business Research*, *58*(6) *715–725*. https://doi.org/10.1016/j.jbusres.2003.11.002

Jiménez-Jiménez, D. & Sanz-Valle, R. (2011). Innovation, organizational learning and performance, *Journal of Business Research, 64(4):* 408-417,

John, G. (2023). The context deficit in leadership research. *The Leadership Quarterly,* https://doi.org/10.1016/j.leaqua.2023.101755

Jung, D. I., & Avolio, B. J. (2000). Opening the black box: An experimental investigation of the mediating effects of trust and value congruence on transformational and transactional leadership. *Journal of Organizational Behavior, 21(8*), 949–964. https://doi.org/10.1002/1099-1379(200012)21:8<949::AID-JOB64>3.0.CO;2-f

Keskin, H. (2006) Market orientation, learning orientation, and innovation capabilities in SMEs. *European Journal of Innovation Management*, 9, 396-417. http://dx.doi.org/10.1108/14601060610707849

Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). The Guilford Press.

Kpolovie, P. & Dorgu, I. (2019). Comparison of faculty's research productivity: (H-index and citation index) in Africa. *European Journal of Computer Science and Information Technology, 7*(6), 57-100

Liao, S. H., Chen, C. C., Hu., D. C., Chung, Y. C. & Liu, C. L. (2017). Assessing the influence of leadership style, organizational learning and organizational innovation. *Leadership & Organization Development Journal*, 38(5), 590–609. https://doi.org/10.1108/LODJ-11-2015-0261

Ly, N. (2020). Cultural influences on leadership: Western dominated leadership and non-Western conceptualizations of leadership. *Sociology and Anthropology*, *8*(1), 1-12, http://dx.doi.org/10.13189/sa.2020.080101

Lopez-Cabrales, A., Bornay-Barrachina, M. & Diaz-Fernandez, M .(2016). Leadership and dynamic capabilities: the role of HR systems, *Emerald Publishing Limited* 0048-3486 http://dx.doi.org/10.1108/PR-05-2015-0146

MoSHE- Ministry of Science and Higher Education. (2020). *Differentiating the higher education system of Ethiopia: Study report.* Ministry of Science and Higher Education.

Nawaz, K., Usman, M., Mulk, W., Ahmad, Z. & Shahzad, H. (2022). Impact of authoritarian leadership on employee performance and job role clarity. by moderating role of power distance. *Journal of Human Resource and Sustainability Studies*, 10, 485-502.

Nazarian, A., Soares, A. & Lottermoser, B. (2017). Inherited organizational performance? The perceptions of generation Y on the influence of leadership styles. *Leadership & Organization Development Journal*, *38*(8),1078-1094. https://doi.org/10.1108/LODJ-05- 2016-0119

Pihie,Z.,A. L., Sadeghi, A. & Elias, H.(2011). Analysis of head of departments leadership styles: Implication for improving research university management practices. *Procedia Social and Behavioral Sciences* 29(2011), 1081 – 1090.

Podsakoff, P. M., Bommer, W. H., Podsakoff, N. P., & MacKenzie, S. B. (2006). Relationships between leader reward and punishment behavior and subordinate attitudes, perceptions, and behaviors: A meta-analytic review of existing and new research. *Organizational. Behavior and Human Decision Processes*, *99*(2), 113–142. https://doi.org/10.1016/j.obhdp.2005.09.002

Quintana, T. A., Park, S., Cabrera, Y. A. (2014). Assessing the effects of leadership styles on employees' outcomes in international luxury hotels. *J Bus Ethics*, *12*1(1),

Senge, P. (1990). *The fifth discipline: The art and practice of the learning organization*. Doubleday/Currency.

Thanh, N. H. & Quang, N. V. (2022) Transformational, transactional, laissez-faire leadership styles and employee engagement: Evidence from Vietnam's public sector. Sage Open, https://doi.org/10.1177/21582440221094606

Tippins, M. J. & Sohi, R. S. (2003). IT competency and firm performance: Is organizational learning a missing link? *Strategic Management Journal*, 24(8), 745–761.

Ur-Rahman, S., Bhatti, A., & Chaudhry, N. I. (2019). Mediating effect of innovative culture and organizational learning between leadership styles at third-order and organizational performance in Malaysian SMEs. *Journal of Global Entrepreneurship Research*, 9(36),2-24. https://doi.org/10.1186/s40497-019-0159-1

Vera, D. & Crossan, M. (2004). Strategic leadership and organizational learning. Academy of *Management Review*, *29(2*), 222–240.

Yaşlıoğlua, M.M., Şapb, Ö. & Topluca, D. (2014). An investigation of the characteristics of learning organizations in Turkish Companies: Scale validation. *Procedia - Social and Behavioral Sciences 150* (2014) 726 – 734,

Young, H. R., Glerum, D. R., Joseph, D. L., & McCord, M. A. (2021). A meta-analysis of transactional leadership and follower performance: Double-edged effects of LMX and

empowerment. *Journal of Management, 47(*5), 1255-1280. https://doi.org/10.1177/0149206320908646

Yukl, G., & Mahsud, R. (2010). Why flexible and adaptive leadership is essential. *Consulting Psychology Journal: Practice and Research, 62*(2), 81-93. https://doi.org/10.1037/a0019835

Zhou, S., Zhou, A., Feng, J., Jiangs, S. (2019). Dynamic capabilities and organizational performance: The mediating role of innovation, *Journal of Management & Organization*, 2(5) 731–747.

Zulfqar, A., Valcke, M., Quraishi, U., Devos, G. (2021). Developing academic leaders: evaluation of a leadership development intervention in higher education. *SAGE Open, (11)*11-15. https://doi.org/10.1177/2158244021991815