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Fostering Employee Ambidexterity: The Role of High-Performance Work System and Ambidextrous Leadership

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Abstract

Objective: This study aims to empirically investigate the moderating effect of ambidextrous leadership in the relationship between high-performance work systems (HPWS) and employee ambidexterity.

Design/Methods/Approach: By integrating social exchange theory and the abilities, motivation, and opportunity (AMO model of human resource management), using a sample of 387 non-supervisory sales representative employees of Ethio-Telecom in Addis Ababa, Ethiopia. The proposed hypotheses were examined using structural equation modeling, SPSS plus AMOS software.

Findings: The study reveals that HPWS has a positive and significant effect on employee ambidexterity. In addition, ambidextrous leadership moderates the relationship between a high-performance work system and employee ambidexterity. Furthermore, at the high level of ambidextrous leadership, the effect of a high-performance work system on employee ambidexterity is stronger.

Originality: This study adds ambidextrous leadership as a moderator in the relationship between HPWS and employee ambidexterity, creating a new theoretical framework. Similarly, in stressing an evident gap in the relationship between HPWS and employee ambidexterity, this paper attempts to explain further how ambidextrous leadership moderates the effect of HPWS on employee ambidexterity.

Practical/Policy implication: The study result reveals that the supervisors' high ambidextrous leadership behaviors and well-crafted HPWS enhance the sales representative's desire to engage in exploitative and exploration activities. In light of this, it makes sense that ambidextrous leadership is necessary to greatly affect HPWS and employee ambidexterity, enabling the organization to guide its leadership selection and development.

Keywords: Ambidextrous Leadership, Employee Ambidexterity, Ethio-Telecom, High-Performance Work System

JEL Classification: D23, M12, M54

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1. Introduction

A high-performance work system is a set of HR procedures intended to improve employees' abilities, dedication, and output so that they become a source of long-term competitive advantage. (Patel et al., 2013). Selective hiring, in-depth training and development, mentorship, performance monitoring, remuneration, and participation are all used in HPWS (Fu et al..,2015). Conversely, Kumar (2018) claimed that high-performance work practices encourage organizational performance by enhancing the work-related abilities of employees, increasing employees' motivation at work, and creating opportunities for employees to contribute positively to organizational processes.

There is a great deal of debate surrounding the components of high-performance work systems (Boxall, 2012). The question remains whether organizations should focus on identifying a single overarching HR system or multiple distinct HR systems that are oriented toward distinct strategic objectives (Lepak et al., 2006). On the other hand, there is confusion in the literature about both the positive versus the negative contribution of HPWS and the systems versus bundling approach to the HR system (Kloutsiniotis & Mihail, 2020; White & Bryson, 2019). Nonetheless, there remains considerable overlap between the practices associated with each approach. AMO-based HR practices (as a system and individual dimension) impacted employee behavioral outcomes (Edgar et al., 2020). Likewise, based on social exchange theoretical perspectives, employees began to reciprocate the positive and negative behavioral outcomes of implementing HR practices (Nadeem et al., 2019). Hence, social exchange theory arguably insists that employees would likely develop a commitment to the organizations once their perceptions are valuable (Garg & Punia, 2017). In particular, from a social exchange theory point of view, when implementing HR practices as a matter of exchange, it is essential to understand the subjective perceptions of the employees. In return, their willingness to engage in both exploitative and exploration activities also materialized (Marin-garcia & Tomas, 2016).

Similarly, unlike other theoretical perspectives, the AMO model emphasizes individual-level employees and insists that core HR practices directly affect employee work outcomes (Marathe & Pathak, 2013). In general, the bulk of existing work on high-performance work systems and employee behavioral outcomes is based on social exchange theory and the AMO model that shed some light on the connection between HPWS-employee behavioral outcomes (Diogo & Costa, 2019). Therefore, based on this study's purpose, social exchange theory and the AMO model were used as a theoretical base in explaining the link between perceived HPWS and employee ambidexterity. In terms of practical contributions, management can improve the efficiency of HPWS in businesses by following the conclusions of this study as a guideline. Likewise, by fostering a culture of learning where employees are encouraged to share their expertise and learn new skills, HPWS can help employees become more ambidextrous and increase their ability to produce the appropriate results. Hence, to increase employee ambidexterity, AMO should be deployed concurrently.

One of organization science's more persistent concepts is that a company's long-term success depends on its capacity to maximize its existing strengths while simultaneously developing fundamentally new talents (Raisch et al., 2009). Simsek (2009) presented a two-by-two typology of organizational ambidexterity. These are; harmonic or contextual ambidexterity, cyclical ambidexterity, partitional ambidexterity, and reciprocal ambidexterity. Contextual ambidexterity is grounded in the literature on organizational context and culture. It is the behavioral potential to concurrently exhibit alignment and adaptability across an entirely commercial enterprise unit (Gibson & Birkinshaw, 2004). Thus, at the employees' level, ambidexterity is a multidimensional notion that refers to an employee's behavioral orientation to combine tasks related to exploitation and exploration throughout a specific time (Caniels et al., 2017). From a leadership point of view, ambidextrous leadership refers to a leader who possesses the opening and closing behavioral orientation during interaction with employees (Alghamdi, 2018).

The high-performance work system is an important determinant of ambidexterity (Fu, Ma, et al., 2015). Meanwhile, researchers have called for more studies to investigate how high-performance work systems affect ambidexterity, using various moderators such as the organizational context (Gibson & Birkinshaw, 2004). More recently, scholars have called for more research to investigate how HPWS affects ambidexterity through various mediators (Turner et al., 2012) and across multiple levels (Raisch & Birkinshaw, 2008). Subsequently, Reilly and Tushman (2013) found that little is known about the moderating role of leadership in regulating the relationship between high-performance work systems and organizational ambidexterity, and one of the antecedents to organizational ambidexterity is leadership and its actions/activities (Simsek et al., 2009). Besides, it is essential to add other elements to test the relationships of interest between HR systems and contextual ambidexterity (Patel et al., 2013). Thus, this study unveils a new theoretical framework that adds ambidextrous leadership as a new moderating construct in the relationship between HPWS and employee ambidexterity. In fact, from a methodological perspective, the existing HRM literature emphasized management–centric approach rather than dealing with employee outcomes such as employee work performance (Diogo & Costa, 2019).

Unlike public or state enterprises, privately owned business firms have been the object of various studies in the last two decades (Mostafa, 2015). For instance, a meta-analysis conducted by Combs et al. (2006) evidenced that high-

performance work practices are essential for manufacturing firms. Also, White & Bryson (2019) found that no finding shows whether high-performance work systems positively or negatively affect public sector employees. These lead the researchers to uncover ambidextrous leadership's roles in ensuring exploration and exploitation in government-owned enterprises. Moreover, what has been missing so far is the lack of research into ambidexterity at the individual level of analysis Raisch and Birkinshaw (2008) and the need to use combined and balanced organizational ambidexterity as Junni et al. (2013), and Caniels et al., (2017) suggested.

Furthermore, the behavioral aspects of ambidexterity, where individuals based on their units demonstrate behaviors of alignment and exploitation and/or behaviors of adaptation and exploration, this study focuses on sales representatives employees, as it fills the research gap (Gibson & Birkinshaw, 2004). In the context of Ethio-Telecom in Ethiopia, this study explains and explores the conceptual effects of HPWS on employee ambidexterity given the moderating effect of ambidextrous leadership. The conceptual framework discussion can be expanded into article hypotheses. This article goes on to detail the research methods used to produce the research findings in the following sections. The final portion, includes the study's conclusions, implications, and limitations.

2. Literature Review and Hypothesis Development

2.1. Theoretical Background

Social exchange theory proposes that in the norm of reciprocity, there is a social form of exchange where employees perceive HPWS as benefits received from the organization. Thus, in return, employees possess outstanding performance (J. Zhang, Bal, et al., 2018). Similarly, the AMO model is routed from the notion of social exchange theory (Diogo & Costa, 2019). The underlying principles of abilities, motivation, and opportunity (AMO model of HRM) argued that every HR system works through its impacts on the skills and knowledge of individual employees, their willingness to exert effort, and their opportunities to express their talents in their work (Boxall & Macky, 2009). Extant research on HPWS and employee behavioral outcomes, including employee ambidexterity, is grounded on social exchange theory and the AMO model. According to a study conducted by (2010), social exchange theory provides an appropriate lens for understanding employee responses to the organization. Likewise, a meta-analysis by Diogo and Costa (2019) revealed social exchange theory as one of the most appropriate theoretical lenses exploring the impact of HPWS on employee outcomes. Therefore, to wrap up, from the above theoretical discussions, both social exchange theory and AMO theory are the two main grand theoretical underpinnings that enable the study to achieve the research purpose.

2.2. High-Performance Work System and Employee Ambidexterity

HPWS refers to the ability, motivation, and opportunity-related human resource management practices provided simultaneously to improve employee performance (Jyoti & Dev, 2016). Likewise, HPWS implies separate but interconnected HRM practices designed to achieve business objectives (Boxall & Macky, 2009). However, employee ambidexterity denotes an employee's exploitive and explorative behavioral orientation to perform a specific task (Alghamdi, 2018). In other words, the concept of employee ambidexterity is rooted in micro-foundations of organizational ambidexterity that imply a multidimensional construct that refers to employees' behavioral orientation to syndicate exploitation and exploration-related activities in a particular duration of time (Caniëls & Veld, 2019).

Prior research has identified little about the antecedents of harmonic or contextual ambidexterity (Reilly & Tushman, 2013). The high-performance work system is an important determinant of ambidexterity (Fu et al., 2015). Ambidexterity involves two competing demands; exploitation and exploration (O'Reilly III & Tushman, 2013; Raisch & Birkinshaw, 2008). Prior studies widely explored at the organizational level and organizational outcome of ambidexterity were the top research agenda by most scholars (Caniels et al., 2017). Similarly, Academics have underlined how strategic HR systems may encourage ambidexterity in both individuals and organizations. (Mom et al., 2018). In particular, High-performance work systems are a significant predictor of organizational ambidexterity (Gürlek, 2020).

The study conducted in Spain found that high-involvement HR systems support ambidextrous learning, generating ambidextrous employees (Prieto-Pastor & Martin-Perez, 2015). Also, the simultaneous pursuit of exploration and exploitation is enhanced through the present HRM practices (Swart et al., 2016). To create contextual ambidexterity in the case organizations, sets of high-involvement HRM practices for exploring new ideas and efficiency-driven HRM practices are used. (Malik, Boyle, et al., 2017). As a result, HPWS is viewed as a systematic tool for enhancing organizational ambidexterity (Patel et al., 2013). This stream of discussion leads to the following hypothesis:

Hypothesis 1: High-performance work systems have a positive and significant effect on employee ambidexterity.

2.3. Moderating Effect of Ambidextrous Leadership

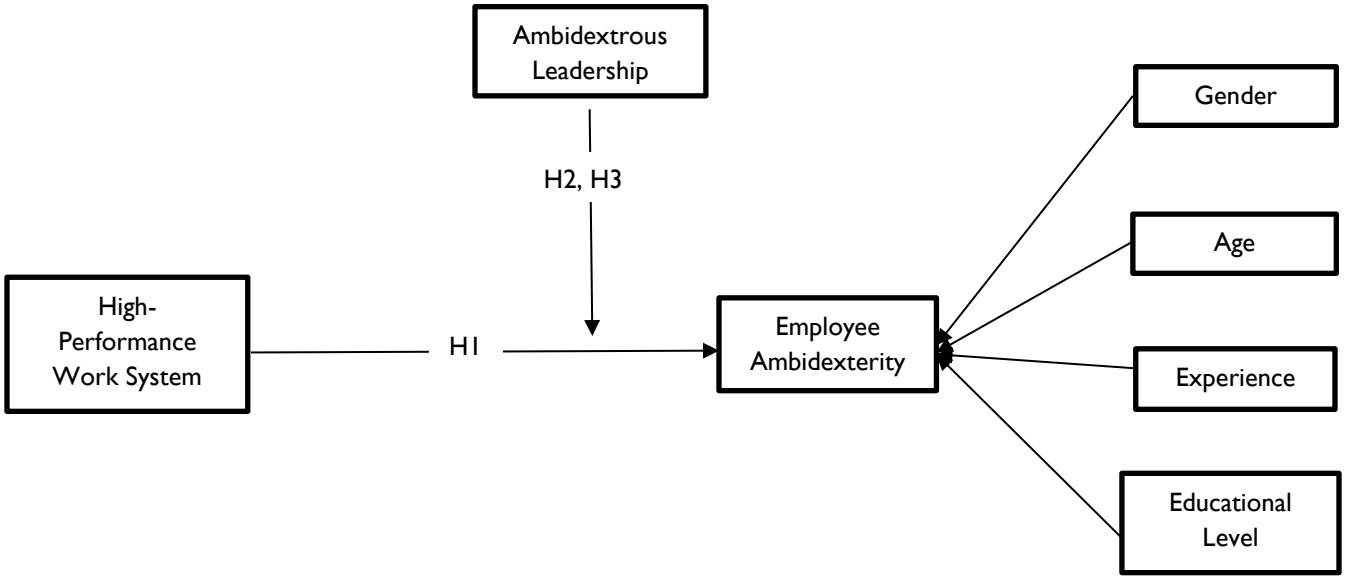
Ambidextrous Leadership refers to a leader who possesses the opening and closing behavioral orientation during interaction with employees (Alghamdi, 2018). Extant research confirmed that ambidextrous theories of leadership support innovation, and the results revealed that leader opening and closing behaviors positively predicted employee exploration and exploitation behaviors (Alghamdi, 2018; Zacher & Rosing, 2015). The reform of public organizations is facilitated by ambidextrous leadership (Trong Tuan, 2016). Furthermore, a meta-review conducted by Mueller et al. (2018) indicated that ambidextrous leadership is a multilevel concept that involves micro and macro levels that meets the idea of leader opening and closing behaviors. It is generally agreed that leadership is important in ensuring employee ambidexterity in organizations. Zacher, Robinson, and Rosing (2016) insisted that ambidextrous leadership has two collections of behavior: leader opening and closing behavior. Hence, among all other leadership behaviors, the combination of both ambidextrous leadership behaviors predicted employee ambidextrous innovation behaviors (Oluwafemi et al., 2019). A review by Raisch & Birkinshaw (2008) revealed a comprehensive model of understanding organizational ambidexterity research. Accordingly, environmental dynamism and competitive dynamics are the main moderators that explain the relationship between organizational ambidexterity and performance. Indeed, some scholars, such as Günsel et al. (2017), indicated that the association between exploitation capacity and business performance is larger the more networking there is. Finally, a study conducted by Alghamdi (2018) showed that employee inventive performance is most highly performed when both opening and closing leadership behaviors are high due to the interaction between leaders' opening and closing behaviors. The following hypothesis is presented in light of the discussion and the material referenced above.

Hypothesis 2: The relationship between a high-performance work system and employee ambidexterity is moderated by ambidextrous leadership.

Furthermore, a more complex theoretical model can be shown by examining high or low levels of the moderation effect. In particular, a study conducted in the largest express delivery company in China revealed that the perceived HPWS on work well-being through employee emotional exhaustion was significantly moderated by work overload (Su et al., 2019). That is, perceived HPWS can improve worker well-being by reducing employee emotional exhaustion when the work overload is low and vice versa (Su et al., 2019). Indeed, employees' proximal perception plays a mediation role regarding the interaction of high-performance work systems (HPWS) and employees' voices and helping. In turn, trust in the supervisor positively moderated the mediated effect in a study conducted on two companies in Taiwan (Wang et al., 2019). This stream of discussion leads to the following hypothesis:

Hypothesis 3: Ambidextrous leadership moderates the direct impact of high-performance work systems on employee ambidexterity, as the direct effect is greater when ambidextrous leadership is present than when it is absent.

Thus, from the above theoretical and empirical review, the researchers argue that based on theoretical social exchange perspectives, employees began to reciprocate the positive and negative behavioral outcomes based on implementing HR practices (Nadeem et al., 2019). To sum up, social exchange theory arguably insists that employees would likely become committed to the organizations once their perceptions are valuable (Garg & Punia, 2017). From a social exchange theory point of view, when implementing human resource practices (AMO-based human resource practices) as a matter of exchange, it is essential to understand the subjective perceptions of the employees (Marin-garcia & Tomas, 2016). The reason for developing a research model is to enable researchers to integrate different ideas from different theories and then integrate them with research questions (Adams et al., 2014). Indeed, the research model is derived from the theoretical framework and relates to specific research problems (R. Kumar, 2011). Furthermore, the research model clarifies relationships among variables (McGaghie et al., 2001). Thus, this hypothesized research model is developed based on the theoretical underpinnings explained before.



Source: The authors' suggestion

Figure 1. Research Model

3. Method

3.1. Research Setting and Sample Procedures

Ethio telecom is state-owned and the only telecom operator in Ethiopia. Currently, the company provides various telecom services to customers. Ethio telecom has a large number of telecom subscribers in Addis Ababa city. As per the data obtained from the human resource division of the company, as of the year 2022, the total number of employees currently working in Ethio telecom in Addis Ababa city is estimated to be more than 20,000. Therefore, this study was focused on non-managerial permanent employees currently working in Ethio telecom in Addis Ababa city. The positivist research paradigm best suits the researchers. It enables them to meet the research purpose as the study is the variable-based approach that is intended to investigate the causal relationship between employee ambidexterity plays a mediating role between the high-performance work system and employee work performance. In other words, to avoid subjectivism, this study relies on empirical arguments to investigate the causal relationships among study variables (Chirkov & Anderson, 2018). Explanatory research was adopted to examine and investigate how and why HPWS influences employee work performance through employee ambidexterity (Babbie, 2016; Saunders et al., 2016). The study participants were non-supervisory permanent sales representative employees working in Addis Ababa city. Sales representatives' employees engage in sales and offer Ethio-Telecom's products and services to several customers. After gaining consent or acceptance from Ethio telecom, a list of employees and other related information were obtained, and then orientation was given about the purpose of the study orally. Their consent was also requested without coercion. In total, 412 employees responded to the self-administered survey (85.12%). After excluding invalid responses, 387 responses were included in the final analysis.

3.2. Scale and Measures

Drawing on the AMO model, a high-performance work system (HPWS) was assessed using a seven-point Likert-type scale adapted from Jensen, Patel, and Messersmith (2013); Jeevan Jyoti and Rani (2017); Jeeven Jyoti and Dev, (2016), respectively. In addition, to examine the perceived level of employees' ambidexterity, an 11– item scale was adapted from Zhang et al. (2020). Moreover, employee ambidexterity is reflected through both employee exploration and exploitation activities. Finally, ambidextrous leadership was assessed using a seven-point Likert-type scale ranging from 1(strongly disagree) to 7 (strongly agree) that was adapted from Rosing et al. (2011); Tuan Luu (2017); Zacher and Rosing (2015) respectively.

Table 1. Research Instrument

Variable Name	Label	Items	Source (s)
High-Performance Work System	HPWS1	I am provided with sufficient opportunities for training and development*	Jensen, Patel, and Messersmith (2013); Jeevan Jyoti and Rani (2017); Jeeven Jyoti and Dev (2016)
	HPWS2	Need-based training is provided to employees*	
	HPWS3	The organization keeps me informed about business issues and about how well it's doing*	
	HPWS4	There is a clear status difference between management and staff in the organization*	
	HPWS5	Team working is strongly encouraged in our organization*	
	HPWS6	A rigorous selection process is used to select new recruits*	
	HPWS7	Employees are involved in decision-making*	
	HPWS8	Communication within the department is good	
	HPWS9	Communication between departments is good	
	HPWS10	I feel my job is secure*	
	HPWS11	The rewards I receive are directly related to my performance at work	
	HPWS12	Career management is given a high priority in my organization*	
	HPWS13	I have the opportunities I want to be promoted	
	HPWS14	The appraisal system provides me with an accurate assessment of my strengths and weaknesses	
	HPWS15	I am given meaningful feedback regarding my performance at least once a year*	
Employee Ambidexterity	EXPR1	Searching for new possibilities concerning products/services, processes, or markets	Zhang et al. (2020)
	EXPR2	Focusing on strong renewal of products/services or processes	
	EXPR3	Activities of which the associated fields or costs are currently unclear*	
	EXPR4	Activities requiring quite some adaptability*	
	EXPR5	Activities requiring me to learn new skills or knowledge*	
	EXPR6	Activities that have not been stipulated explicitly in existing company policy*	
	EXPL1	Activities in which a lot of experience has been accumulated by yourself	
	EXPL2	Activities which you carry out as if it were routine*	

	EXPL3	Activities that serve existing (internal) customers with existing services/products	
	EXPL4	Activities of which it is clear to me how to conduct them	
	EXPL5	Activities primarily focused on achieving short-term goals*	
	LOB1	Allows different ways of accomplishing a task	
	LOB2	Encourages experimentation with different ideas	Rosing et al. (2011); Tuan Luu (201); Zacher and Rosing (2015)
Ambidextrous Leadership	LOB3	Motivates to take risks*	
	LOB4	Gives possibilities for independent thinking and acting	
	LOB5	Gives room for own ideas*	
	LOB6	Allows errors*	
	LOB7	Encourages error learning*	
	LCB1	Monitors and controls goal attainment*	
	LCB2	Establishes routines*	
	LCB3	Takes corrective action	
	LCB4	Controls adherence to rules	
	LCB5	Pays attention to uniform task accomplishment*	
	LCB6	Sanctions errors*	
	LCB7	Sticks to plans*	

Source: Authors' Compilation
Note: * Items Deleted

3.3. Control Variables

Prior studies confirmed that variables such as gender, age, education level, and tenure affect the constructs of employee ambidexterity based on immediate contexts in which employees operate. Therefore, we controlled for gender, age, educational level, and organizational tenure during the present study.

3.4. Common Method Bias Test (CMB)

Common method bias is the inflation of true correlation among observable variables in a study (Podsakoff et al., 2003). To mitigate this problem, Harman's one-factor test was performed with confirmatory factor analysis, where all indicators are purposely loaded on one factor to determine model fit. Accordingly, 17.1% of the variance was explained by the first factor, which, at less than 50%, demonstrated that bias was not a problem. This aligns with notions expounded by (Podsakoff et al., 2003), and Thus, it was confirmed that the data could be used for further statistical analysis.

4. Results

4.1. Descriptive Analyses

The demographic characteristics of respondents consisted of 238 men (61.50%) and 149 females (38.50%). The most dominant age group was between 26 and 35 (60.72%). More than half of the respondents possessed a bachelor's degree (n = 272, 70.3%), followed by respondents who had a master's degree (n = 91, 23.5%) and diploma holders (n = 24, 6.2%), respectively. Lastly, the highest percentage of the respondents have been in service for 1 to 3 years in the present organization (n = 181, 46.8%), whereas respondents whose length of service is of 8 to 10 years are small in number (n = 32, 8.3%), respectively. Table 2 presents the descriptive statistics and correlations. As seen in Table 2, Employee ambidexterity and ambidextrous leadership were both positively correlated with high-performance work systems ($r = 0.255$, $p < 0.01$) and each other ($r = 0.315$, $p < 0.01$). Furthermore, Employee ambidexterity and ambidextrous leadership were positively correlated ($r = 0.579$, $p < 0.01$).

4.2. Measurement Model

There are various statistical tools to analyze the collected data. This study used Statistical Package for Social Science (SPSS) plus AMOS software Version 23. Once the appropriate sample data is gathered by checking missing data and response rate, the collected data was analyzed using descriptive and inferential statistics. In particular, covariance-based structural equation modeling (CB-SEM) has been widely applied in the field of social science during the past several decades and is still the preferred data analysis method today for confirming or rejecting theories through testing of hypotheses, particularly when the sample size is large, the data is normally distributed, and most importantly, the model is correctly specified. That is, the appropriate variables are chosen and linked together to convert a theory into a structural equation model (Hair Jr. et al., 2014). AMOS is one of the statistical packages widely used for covariance-based structural equation modeling (Asyraf & Afthanorhan, 2013). Thus, considering these assumptions, all study constructs are latent variables with a reasonable number of indicators within each construct. This suggests using CB-SEM to analyze and present data.

Table 2. Mean, Standard Deviation, and Correlations among the Study Variables

	Variables	Mean	SD	1	2	3	4	5	6	7
1	High-Performance Work Systems	5.5655	0.88803	1						
2	Employee Ambidexterity	5.9243	0.73198	0.255**	1					
3	Ambidextrous Leadership	5.6456	0.79354	0.315**	0.579**	1				
4	Gender	1.39	0.487	0.155**	0.059	0.034	1			
5	Age	1.99	0.681	-0.133**	-0.065	-0.130**	-0.155**	1		
6	Educational Level	2.17	0.518	-0.107*	-0.082	-0.006	-0.152**	0.026	1	
7	Experience	2.02	1.166	-0.236**	-0.030	-0.142	-0.135**	0.711**	-0.001	1

**. Correlation is significant at the 0.01 level (1-tailed).

*. Correlation is significant at the 0.05 level (1-tailed).

Note: N = 387. Gender (1 = Male, 2 = Female); Age (1 = 18-25, 2 = 26-35, 3 = 36-45, 4 = Above 45); Educational Level (1 = Diploma, 2 = BA/BSc Degree, 3 = MA/MSc Degree, 4 = Ph.D. Degree); Experience (1 = 1-3 years, 2 = 4-7 years, 3 = 8-10 years, 4 = Above 10 years).

Source: The authors' calculation

4.2.1. Exploratory Factor Analysis

Principal component analysis and varimax rotation were used to perform an exploratory factor analysis (EFA). The required minimum factor loading was set at 0.50. To guarantee a sufficient level of explanation, the commonalities of the scale—which depict the degree of variance in each dimension—were also evaluated. Also, in factor analysis, the sum of the variance explained by all the factors is shown by the Eigenvalue. Factors with Eigenvalues greater than one (1) are chosen for additional research (Hair et al., 2014). The outcome reveals the sample adequacy score calculated by Kaiser-Meyer-Olkin (KMO) was 0.896. In this regard, the data with KMO values above 0.800 are considered appropriate for factor analysis (Hair et al., 2014). The study construct could explain a total of 64.493 percent of the variance in the research's items. The results of Bartlett's Test of Sphericity were significant, and all commonalities exceeded the necessary thresholds of 0.500. The elements of this EFA that were detected matched the research's theoretical hypothesis. Thus, EFA is used to check the construct validity, which implies the extent to which a set of measured variables represents the latent theoretical construct those variables are designed to measure (Byrne, 2016; Hair et al., 2014).

4.2.2. Confirmatory Factor Analysis (CFA)

Many key concepts of importance in traditional social science and management research cannot be measured directly; instead, they can only be evaluated by speculating on how a hidden variable might relate to other factors (item or manifest variable) (Afthanorhan et al., 2020).

Confirmatory factor analysis (CFA) is widely used in organizational research to test the hypothesis of the associations among variables (Collis & Hussey, 2021). Running separate CFA for the various models is a prerequisite before evaluating the structural model. According to Schumacker and Lomax, (2010), CFA does not inform us how to specify the model but instead estimates the parameters of the model once the model has been specified a priori through the researchers on the groundwork of theoretical and research primarily based on knowledge. Hence, the CFA was done to ensure the model fit.

Table 3. Model Fit Assessment (HPWS and EA)

Fit Indices	Recommended Value	Source (s)	Obtained Value
P-Value	Insignificant	(Bagozzi & Yi, 1988)	0.000
CMIN (Chi-Square/df)	3 – 5	(Schumacker & Lomax, 2010)	2.582
CFI	> 0.90	(Bentler, 1990)	0.959
TLI	> 0.90	(Bentler, 1990)	0.946
SRMR	< 0.80	(L. Hu & Bentler, 1998)	0.050
RMSEA	< 0.80	(L. Hu & Bentler, 1998)	0.064

Source: The authors' calculation

The model fit measures were used to assess the model's overall goodness of fit; Model Chi-Square Test (CMIN/df), Comparative Fit Index (CFI), Tucker Lewis Index (TLI), Standardized Root Mean Square Residual (SRMR), and Root Mean Square Error of Approximation (RMSEA) and all values were within their respective common acceptance levels (Bentler, 1990; Hu &Bentler, 1998; Schumacker & Lomax, 2004). The three-factor model (high-performance work system, employee ambidexterity, and ambidextrous leadership) yielded a good fit (Table 3) for data; CMIN/df = 2.582, CFI = 0.959, TLI = 0.946, SRMR = 0.050, and RMSEA = 0.064.

4.2.3. Discussion of Instrument Validation and Reporting Measurement Model

The validity and reliability of the scales utilized are crucial components for the research to produce useful results. Understanding how researchers accurately measure the validity and reliability of the scales is so important. The purpose of this study is to provide resources for future research and information on how the researchers assess the validity and reliability of the scales used in their empirical studies. The concepts of validity and reliability are introduced for this purpose, and thorough explanations of the primary methodologies used in evaluating validity and reliability with examples from the literature have been provided (Surucu & Maslakci, 2020).

The study's findings revealed that Cronbach's Alpha for each construct was found over the required limit of 0.70 (Hinton et al., 2014). Composite reliability ranged from 0.799 to 0.854, above the 0.70 benchmarks (Hair et al., 2014). Hence, construct reliability was established for each construct in the study (Table 4). The convergent validity of scale items was estimated using Average Variance Extracted (AVE) (Fornell & Larcker, 1981). The average variance extracted was above the required threshold value of 0.50 (Fornell & Larcker, 1981). Therefore, the scales used for the present study have required convergent validity (Table 4).

Table 4. Loadings, Reliability, and Convergent Validity

Items	Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
High-performance work system		**0.860**	**0.853**	**0.539**
HPWS14	0.842			
HPWS13	0.726			
HPWS11	0.746			
HPWS9	0.712			
HPWS8	0.638			
Employee ambidexterity		**0.845**	**0.794**	**0.661**
EXPR1	0.815			
EXPR2	0.892			
EXPL1	0.726			
EXPL3	0.886			
EXPL4	0.755			
Ambidextrous leadership		**0.858**	**0.851**	**0.743**
LOB1	0.816			
LOB2	0.880			
LOB4	0.715			
LCB3	0.889			
LCB4	0.807			

Source: The authors' calculation

The study's discriminant validity was evaluated using the Fornell and Larcker criteria. Therefore, discriminant validity is proven when a construct's square root of AVE is greater than its correlation with other constructs in the study (Fornell & Larcker, 1981). Discriminant validity was established in the current investigation.

Table 5. Discriminant Validity of HPWS and EA

	HPWSF	ALF	EAF
HPWSF	**0.734**		
ALF	0.355***	**0.862**	
EAF	0.214**	0.657***	**0.813**

Note: HPWSF – High-performance work system; EAF– Employee ambidexterity, Significance of correlations: **P < 0.010; ***P < 0.001
Source: The authors' calculation

4.3. Structural Model Assessment

A structural equation model (SEM) produced by AMOS was utilized to test the correlations. If the CMIN/df is less than 5, the model is considered to fit the data well. (Schumacker & Lomax, 2010); the goodness of fit indices (GFI), the Tucker and Lewis Index (TLI), Comparative Fit Index (CFI) are> 0.90 (Bentler, 1990). In addition, an adequate fitting model was accepted if the AMOS computed value of Standardized Root Mean Square Residual (SRMR) and Root Mean Error Approximation (RMSEA) is < 0.08 (L. T. Hu & Bentler, 1999). The fit indices for the model shown revealed that all fell within the acceptable range: CMIN/df = 2.582, CFI = 0.959, TLI = 0.946, SRMR = 0.050, and RMSEA = 0.064.

Table 6. Structural Model Assessment (HPWS and EA)

Hypothesized Relationship	Standardized Estimates	t-values	p-values	Decision
HPWSF → EAF	0.216	2.736	0.006	Accepted
Gender → EAF	-0.030	-0.376	0.707	
Age → EAF	-0.128	-1.619	0.105	
Education → EAF	-0.110	-1.475	0.140	
Experience → EAF	0.068	1.1449	0.147	
R – square	0.05			
Model fit				
CMIN/df = 2.582, CFI = 0.959, TLI = 0.946, SRMR = 0.050, and RMSEA = 0.064.				

Note: HPWSF– High-performance work system; EAF – Employee ambidexterity.
*** - p < 0.01
Source: The authors' calculation

As mentioned in Table 6, gender, age, education, and experience do not have a significant relationship with employee ambidexterity. In other words, the control variables for this study have an inconsequential influence on the model. Therefore, the demographic variables for this study are excluded from further analysis, as it is suggested by Collier (2020).

4.4. Hypothesis Testing

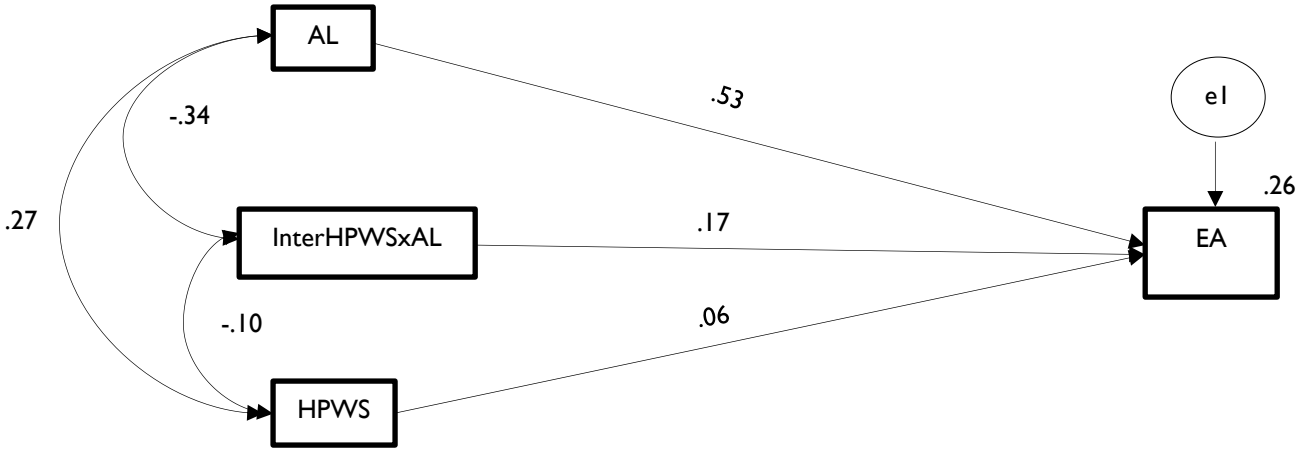
In AMOS graphics, to test for moderation, it is worthwhile to include a path from the moderator and interaction variable to the dependent variable, which is employee ambidexterity. In this case, there are three paths leading to employee ambidexterity: the path from the independent variable (i.e., HPWS), the moderator (i.e., AL), and the mean-centered interaction term of those two constructs. In testing the moderation with a continuous variable, it is essential to form a mean-centered interaction term that is a product of the moderator (i.e., AL) and independent variable (i.e., HPWS) as it is suggested by (Collier, 2020). The moderation analysis summary is presented in Table 7.

Table 7. Moderation Analysis Summary

Hypothesized Relationship	Estimate	C.R.	P
HPWS→ EA	.043	1.382	.167
InterHPWSxAL → EA	.109	3.649	***
AL→ EA	.452	10.960	***

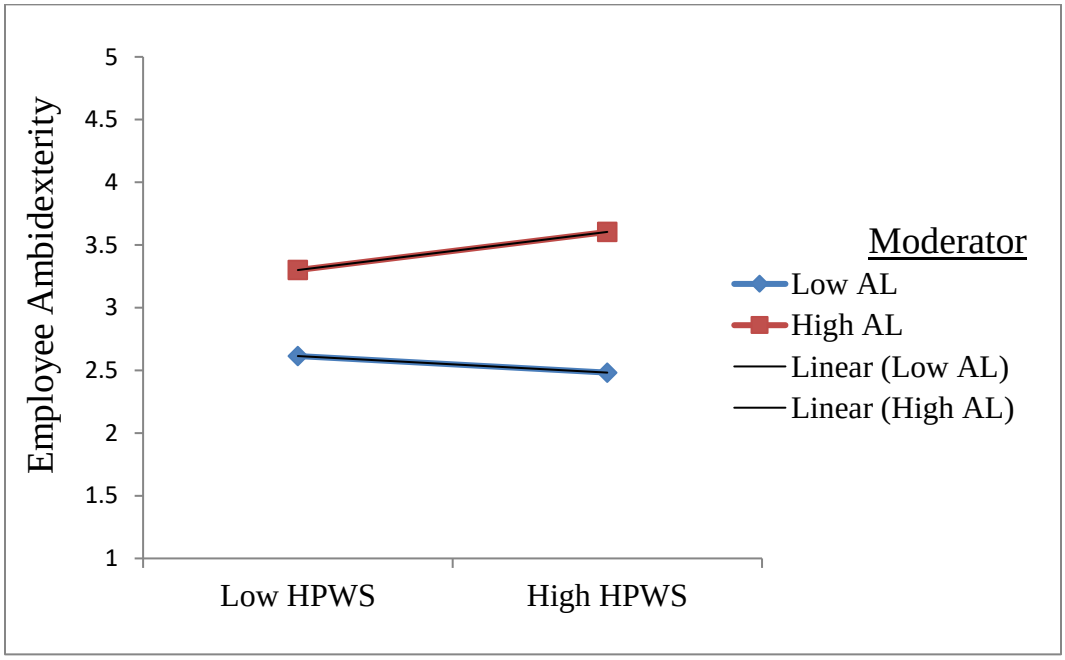
Note HPWS – High-performance work system; EA – Employee ambidexterity; AL – Ambidextrous leadership.
Source: The authors' calculation

From Table 7, it is noted that the interaction term is positive and significant. This means that ambidextrous leadership strengthens the relationship between high-performance work systems and employee ambidexterity. In particular, the moderator (i.e., ambidextrous leadership) has a significant direct relationship with employee ambidexterity. Thus, the study confirmed that ambidextrous leadership moderates the relationship between a high-performance work system and employee ambidexterity.



Note: Factor loadings are standardized and significant at p < 0.01. High-performance work system (HPWS); Employee ambidexterity (EA); Ambidextrous leadership (AL).
Source: The authors' calculation

Figure 2. Structural Equation Model



Note: HPWS – High-performance work system; AL – Ambidextrous leadership
Source: The authors' calculation

Figure 3. Moderating Effect of Ambidextrous Leadership

5. Discussion

The purpose of this study is to explore the moderating effect of ambidextrous leadership in the relationship between HPWS and employee ambidexterity. Thus, the analysis results showed that the squared multiple correlations were 0.05 for employee ambidexterity. This indicates that a 5% variance in employee ambidexterity is accounted for by a high-performance

work system. The study assessed the effect of a high-performance work system on employee ambidexterity, given the moderating effect of ambidextrous leadership. Hence, at the initial stage, the result indicated that the effect of a high-performance work system on employee ambidexterity was positive and significant ($\beta = 0.216$, $t = 2.736$, $p < 0.05$), supporting *Hypothesis 1*. This finding is compatible with prior studies (Huang & Kim, 2013; Malik, Pereira, et al., 2017; Zheng et al., 2020). Model fit indices and hypothesis results are presented in Table 3 and Table 7. In particular, a study conducted in industrial parks in China revealed that HPWS positively and significantly influenced external learning and searching for enhancing innovation openness (Zheng et al., 2020).

Moreover, a similar study discovered evidence of the usage of high-involvement HRM practices for the generation of contextual ambidexterity and efficiency-driven HRM practices (Malik, Boyle, et al., 2017). Our findings show that employee ambidexterity is favorably and significantly associated with AMO-based HPWS. Thus, it has been observed that employees' exploration and exploitation behavior is the result of ability, motivation, and opportunities enhanced by human resource management practices provided at the workplace.

The study examined the moderation role of ambidextrous leadership in the relationship between a high-performance work system and employee ambidexterity. The study findings revealed a 26% variance in employee ambidexterity is accounted for by high-performance work systems, ambidextrous leadership, and the interaction of these two constructs. The study result revealed a positive and significant moderating effect of ambidextrous leadership between high-performance work systems and employee ambidexterity ($\beta = 0.109$, $t = 3.649$, $p < 0.000$), supporting *Hypothesis 2*. This finding was compatible with the study conducted in Saudi Arabia revealed that innovative employee performance is high when both the leader's opening and closing behavior is high (Alghamdi, 2018). Likewise, the relationship between idea generation and idea realization is strengthened by leader-closing behaviors (Mascareño et al., 2021).

Likewise, the impact of the governance mechanism on the social sustainability of the firm is strengthened by the high level of ambidextrous leadership (Awan et al., 2018). Therefore, it is confirmed that the existence of ambidextrous leadership strengthens the positive relationship between AMO-based HPWS and employee ambidexterity.

Moreover, as can be seen in figure .3., the line is much steeper for high ambidextrous leadership (high AL). This shows that with a high level of ambidextrous leadership, the effect of a high-performance work system on employee ambidexterity is much stronger in comparison to low level of ambidextrous leadership, supporting *Hypothesis 3*. These study findings are in line with previous studies. In particular, when the interaction between leaders' daily opening and closing behaviors was high, the predicted employees' daily self-reported innovative performance was high (Zacher & Wilden, 2014). Likewise, team innovation is predicted by the relationship between opening and closing leadership behaviors, which is highest when both are strong (Zacher & Rosing, 2015). Moreover, the strength of the mediated association between opening leader behaviors and employee idea realization through employee idea production would be moderated by leader closing leadership behaviors, making the relationship greater when closing behaviors are high (Mascareño et al., 2021). Ambidextrous leadership strengthens the positive relationship between a high-performance work system and employee ambidexterity.

6. Conclusion

This study examined how ambidextrous leadership affected the relationship between high-performance work environments and employee ambidexterity. As a result, ambidexterity among employees was positively and considerably impacted by high-performance work systems. Additionally, ambidextrous leadership enhances the link between an environment that fosters high performance and employee ambidexterity. In particular, the study's findings revealed that the excessive stage of ambidextrous leadership had a fantastically better effect on the relation with employee ambidexterity compared to the impact of a low degree of ambidextrous leadership (Alghamdi, 2018). Therefore, a high-performance work system's substantial role should be considered to encourage the employee to engage in exploitative and explorative activities. These behavioral aspects of employees can be well enhanced by ensuring ambidextrous leadership in the organizations.

This study makes theoretical contributions in various ways. In the initial stage, this study was done in a state-owned enterprise that filled the research gap in public organizations (White & Bryson 2019). In addition, the study's finding extended our understanding of how AMO-based high-performance work systems influence employee ambidexterity with the moderating effect of ambidextrous leadership. So, we feel that our research contributes to and advances the study of the AMO-based HPWS development process in strategic human resource management (Huselid, 1995; Jyoti & Dev, 2016; J. Zhang et al.,2018). Finally, the results of this study were congruent and consistent with related research done in western countries, as this study was done in the Ethiopian context (Tensay & Singh, 2020). In particular, the study sheds light within the context of social exchange theory, the employees' positive perceptions towards AMO-based HPWS lead to the desire to engage in both exploitative and explorative behavior, given the existence of ambidextrous leadership. Thus, due to the individual level exchange and response, employees are likely to reciprocate with their behaviors and attitudes valued by the organization.

This study has important management implications for Ethio Telecom. First, this study has identified that HPWS positively and significantly influences employee ambidexterity. Thus, it shows that HPWS is a useful tool to strengthen employee ambidexterity. Second, the study's results revealed that ambidextrous leadership plays an essential role in regulating the interaction between HPWS and employee ambidexterity. Therefore, practitioners should be aware that enhancing employee ambidexterity depends heavily on HPWS, which is improved by ambidextrous leadership.

This study has several limitations that should be explored by future research. First, we collected information from workers in Addis Ababa, which could also impact how accurately Ethio-Telecom employees are judged nationally. Additionally, the study only counts employees as participants, which could impact how generalizable the results are. Second, this study was purely quantitative by nature which may threaten the study's findings. Specifically, the study failed to incorporate qualitative data that could have been collected from supervisors and other stakeholders, which might help to reveal inclusive research findings (Onwuegbuzie & Leech, 2005; Taguchi, 2018). Third, the study was cross-sectional, where data was collected once from sales representatives that may affect the research output. In particular, because our data was collected from one source, it may raise concerns about common method variance (Podsakoff et al., 2003). Therefore, considering these limitations, we call future researchers to undertake a study in one of the following future research directions. First, explore the effect of HPWS on employee ambidexterity at the various level of analysis, such as a team and/or organizational level by taking into account the System Theory and Paradox and Ambidexterity theory to further confirm the findings of the study. Second, a longitudinal research design is better to figure out employee work performance by collecting data over time. Third, future research should incorporate qualitative data that allow triangulating with quantitative information. Forth, future researchers may take non-public firms as a case organization to enable the study greater representative. To better comprehend the indirect and interaction effects on the link between HPWS and employee work performance, potential researchers may identify another pertinent mediator and moderating variable.

Author Contribution

Author 1: conceptualization, writing original draft, data curation, formal analysis, investigation, methodology.
Author 2: review and editing, writing review and editing, supervision, validation, visualization.
Author 3: review and editing, writing review and editing, supervision, validation, visualization.

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None

Conflict of Interest

The author(s) affirmed no potential conflicts of interest related to the research, authorship, and publication of this article.

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