

Gul Bahar*

Shazia Akhtar†

Ambidexterity as a New Research Paradigm: Examining the Mediating Role of Employees' Goal Orientation, Exploitation and Exploration

Abstract

The aim of this study was to empirically validate the impact of ability-enhancing HR bundles on organizational ambidexterity through mediation of employees' cognitive factors and employees' exploration and exploitation. The multi-level data was collected from 600 employees of the software companies and analyzed through MEDTHREE analysis and SEM using AMOS software. Data was collected in two-time waves and results revealed positive relationship between ability-enhancing HR bundles and organizational ambidexterity. This study contributes to literature by providing new insights and by investigating links of ability-enhancing HR bundles with organizational ambidexterity directly and indirectly.

Key Words: Ability-Enhancing HR Bundles, Employees' Learning Orientation, Employees' Learning Orientation and Organizational Ambidexterity.

Introduction

Today's complex and unpredictable business environment demands organizations to become ambidextrous for their prosperity and long-term survival ([Mom, Chang, Cholakova & Jansen, 2018](#)). It has become imperative for organization to constantly engage in employees' exploration and employees' exploitation ([Nowacki & Monk, 2020](#)). This turbulence forced firms to engage in both activities leading towards organizational ambidexterity (Shujaat, Navaz & Tariq, 2019). However, simultaneous emergence of these two innovative activities brings tension in the internal environment due to their opposing logics ([Venugopal, Krishan, Kumar & Upadhyayula, 2019](#); [Brix, 2019](#); Tushman & O'Reilly, 1996; March, 1991). Owing to this trend, large academic literature focused on how to concurrently execute and maintain balance between both processes in organizational structure and systems (Kang & Kim, 2019).

The term ambidexterity was first time proposed by Robert [Duncan \(1976\)](#), he argued that two conflicting nature of innovation competes for scarce resources. Later on, James March (1991) suggested that the big challenge for companies is to protect the current capabilities through exploitation, while implementing adequate explorative activities to ensure the future changes. [Gibson and Birkinshaw \(2004\)](#) claimed that a firm can become ambidextrous by building a set of processes that permit employees to make decisions by themselves regarding division of time between exploration and exploitation. In a result, organizational contextual ambidexterity can be achieved through culture, processes and overall context of the organization.

Ambidexterity is basically trade-off between ability of the firm to do two things having conflicting demands ([Vallina, Moreno-Luzon & Ferrer-Franco, 2019](#)). Nowadays, it has become subject of eternal interest to management scholars ([Koryak et al. 2018](#)). There are three forms of ambidexterity i.e., sequential, structural and contextual. This study will analyze the impact of HR bundles on contextual ambidexterity leading towards organizational ambidexterity.

Research to date is mainly based on influence of HR bundles on organizational ambidexterity (Ahammad & Junni, 2019; Kaupila, 2018; [Lee & Meyer-Doyle, 2017](#)). Whereas, the conflict of employees' exploration and employees' exploitation has been explored by very few studies (Zimmermann, Raisch & Cardinal, 2018; [Birkinshaw & Gupta, 2013](#)). There is a notable dearth of theorizing regarding employees' ambidexterity and role of HR bundles in its development (Mom et

*PhD Scholar, Department of Management Sciences, SZABIST Islamabad, Pakistan.

Email: 1431186@szabist.edu.pk

†Associate Professor, Department of Management Sciences, SZABIST Islamabad, Pakistan.

al.2018; Birkinshaw & Gupta, 2013; [Patel et al., 2013](#)). Moreover, a few studies have been carried out to explore the direct link of the HR bundles as an antecedent of employees' exploration and employees' exploitation ([Swart, Turner, Rossenberg & Kinnie, 2019](#); Lopez-Cabrales et al. 2017; [Junni et al. 2015](#)). Veld and Caniels (2019; 2017) also supported above argument and stated that very few studies explored specialization of exploitation and exploration at employee level. Because traditional research focused only on organizational ambidexterity (Zimmermann, Raisch & Cardinal, 2018).

Besides knowing that research on ambidexterity is on its nascent stages, there are few more appealing theoretical gaps regarding mediation analysis. Previous studies directly investigated the mediating role of self-breadth self-efficacy (Gibson, 2004; Patel et al. 2013; Mom, Chang, Cholakova & Jansen, 2018), goal orientation ([Hoeksema, 2017](#)), intrinsic motivation (Mom, Chang, Cholakova & Jansen, 2018; Junni et al.2015; [Yu, 2010](#)), entrepreneurial orientation (Alghmdi, 2018; Mehrabi, Coviello & Ranveera, 2018) linking ability-enhancing HR bundles with employees' ambidexterity and organizational ambidexterity without considering exploration and exploitation separately. These studies didn't propose a sequential mediated model based on theory of ambidexterity because these employees are more adoptive to challenging tasks and put efforts to modify their strategies (Buckley, 2011, p. 684). Whereas, performance-oriented employees are more motivated to outperform from their co-workers and avoid failure and looking incompetent from them (Jansen & Yperen, 2004). Therefore, it is concluded employees' learning goal orientation is connected to exploration and employees' performance orientation is related to exploitation. Existing literature highlighted that future studies should explore other cognitive factors as mediator between HR bundles and ambidexterity (Mom, Chang, Cholakova & Jansen, 2018; Kaupila, 2018; Lee & Meyer-Doyle, 2017; [Smith & Tushman, 2005](#)). It has been seen that effective implementation of the strategic human resource bundles increases cognitive skills of employees especially at front level leading to ambidexterity ([Shin, Jeong & Bae, 2018](#); Pillai, 2008).

Owing to this, the first input of present research is to investigate the mediation of learning orientation linking ability-enhancing HR bundles and employees' exploration. The second contribution of the research is to measure the mediation of employees' performance orientation between ability-enhancing HR bundles and employees' exploitation. Current literature of ambidexterity emphasized more on top-management and there is a strong need to investigate this phenomenon at employee level ([Caniels & Veld, 2016](#); Haversman, Hartog, Keegan & [Uhl-bien, 2018](#)). Therefore, third contribution of the study is to explore ambidexterity at employee level. In addition, there is a strong call to empirically validate ambidexterity because previous literature is not sufficient to guide practitioners ([Zimmermann, Raisch & Cardinal, 2018](#)). The current literature of ambidexterity is not sufficient to guide practitioners.

The previous studies focused only on ambidexterity at higher-level of organization but still research on antecedents of organizational ambidexterity is at embryonic stage (Venugopal, Krishnan, Kumar & Upadhyayula, 2019). Therefore, fourth contribution of the study is to investigate the direct relationship of ability-enhancing HR bundles with organizational ambidexterity.

Therefore, we exclusively focus on HR bundles and their impact on employees' exploration and exploitation in the present study. Because, growing literature of ambidexterity explored role of HR bundles in very few studies (Kaupila, 2018; Junni et al., 2015). Therefore, the present study will examine the role of HR bundles directly and indirectly with organizational ambidexterity. Last contribution is related with top-down multi-level model used in the study. Previous literature suggested that future studies should examine top-down effect of studies factors ([Wright & Ulrich, 2017](#); Patel, & Lepak, 2011; Patel et al., 2013). In response to these famous scholars, present study will follow multi-level model.

Regarding contextual gap, there is almost death of innovation in Pakistan. However, according to Global Innovation index (GII) 2018, 2019 and 2020, Software companies of Pakistan are comparatively better as compare to other sectors and ranked highest position in innovation. But, these companies should focus on exploiting current resources and exploring new ideas to gain good place in world ranking. They face a big challenge of maintaining balance between this dichotomy having opposing natures. Moreover, there is no model available in literature for effective implementation of ambidexterity in real world. The current study will be very fruitful in terms of effective execution of

employees and organizational ambidexterity for the practitioners of the software companies in Pakistan.

Theoretical Support and Hypothesis

Ability-Enhancing HR Bundles and Organizational Ambidexterity

The ability-enhancing HR bundles developed employees' skills and abilities leading toward organizational performance (Becker & Huselid, 2006). It would be more fruitful to convert HR bundles into different units based on their area of inspiration (Mom et al. 2018; Wright & Ulrich, 2017). This study used only one unit i.e., ability-enhancing HR bundles which includes high commitment work systems connected to work satisfaction and organizational productivity and innovation (Pfeffer 2006; Shaw & Prensushi, 2010). The typology including selective hiring, comprehensive training and job enlargement, used by this study was already used by previous studies (Mom, Chang, Cholokova & Jansen, 2018; [Sabwami, 2015](#)). Existing literature found a very a strong association of these HR bundles with organizational ambidexterity (Patel et al., 2013; [Veld & Caniels, 2016](#)). The study (Ahammad & Junni, 2019; Kaupila, 2018; Mom, Chang, Chalokova & Jansen, 2018; Lee & Meyer-Doyle, 2017;) also found direct positive relationship between ability-enhancing HR bundles and organizational. Consequently, we concluded that when organizational ambidexterity can be achieved through effective implementation of ability-enhancing HR bundles. This leads to the following hypothesis:

Hypothesis 1: Ability-enhancing HR bundles have direct positive relationship with organizational ambidexterity.

Mediation of Employees' Learning Goal Orientation

Previous studies of ambidexterity ignored the indirect role of learning goal orientation linking ability-enhancing HR bundles with employees' exploration and exploitation separately. The literature studied them collectively and considered employees' learning orientation a very important antecedent of the employees' ambidexterity (Junni et al., 2015). These employees are change oriented and accepted challenges of ambidexterity (Hoeksma, 2017). Moreover, mediation of employees' learning goal orientation between ability-enhancing HR bundles and ambidexterity was also empirically investigated (Yu, 2010). In support of these arguments, it was found that high learning-oriented employees adopt explorative behaviors and are less motivated towards exploitation (VandeWalle, 2001). Moreover, the study of Pillali (2008) found positive relationship of the human resource bundles only with employees' learning orientation.

March (1991), the one who gave the concept of ambidexterity also proposed this relationship but not tested. Moreover, there is a literature gap to measure mediation of employees' learning goal orientation linking ability-enhancing HR bundles with organizational ambidexterity. This literature guides us to develop the following hypothesis:

Hypothesis 2: Employees' learning goal orientation mediates association of ability-enhancing HR bundles with organizational ambidexterity.

Mediation of Employees' Performance Goal Orientation

Previous literature focused on measuring employees' performance orientation as an important originator of the employees' ambidexterity (Junni et al. 2015). The connection between employees' goal orientation and employees' ambidexterity was found positive (Hoeksma, 2017). Employees' learning orientation and performance orientation are two dimensions of goal orientation ([Button, Mathieu, & Zajac, 1996](#); [Eccles & Wigfield, 2002](#)). The ability-enhancing HR bundles namely selective hiring, training and job enlargement are positive contributors in both dimensions of goal-orientation (Bouwman, Runhaar, Wesselink & Mulder, 2017). Moreover, mediation of performance goal oriented employees between ability-enhancing HR bundles and employees' ambidexterity was also empirically investigated (Yu, 2010). In order to fill the theoretical gap, this study will measure the mediation of

employees' performance goal orientation between relationship of ability-enhancing HR bundles and organizational ambidexterity. This leads to the following hypothesis:

Hypothesis 3: Employees' performance goal orientation mediates the relationship of ability-enhancing HR bundles with organizational ambidexterity.

Mediating Role of Employees' Exploration and Exploitation

Employees' ambidexterity is a multidimensional concept refers to the extent employees involved in both explorative and exploitative behaviors simultaneously (Bledow et al. 2009). The imbalance between these two processes created tension in the organization. HR bundles have been considered important indicators of the organizational ambidexterity (Kaupila, 2018). The study (Mom, Chang, Cholakova & Jansen, 2018) investigated the positive association between ability-enhancing HR bundles with organizational ambidexterity directly and indirectly through employees' ambidexterity. In support of this relationship, previous studies also measured the influence of HR bundles only on organizational ambidexterity (Ahammad & Junni, 2019; Kaupila, 2018; Lee & Meyer-Doyle, 2017). A little research has been carried out to explore the indirect link of the HR bundles and organizational ambidexterity through mediation of employees' ambidexterity (Swart, Turner, Rossenberg & Kinnie, 2019; Mom, Chang, Cholakova & Jansen, 2018). Therefore, we develop the following hypothesis:

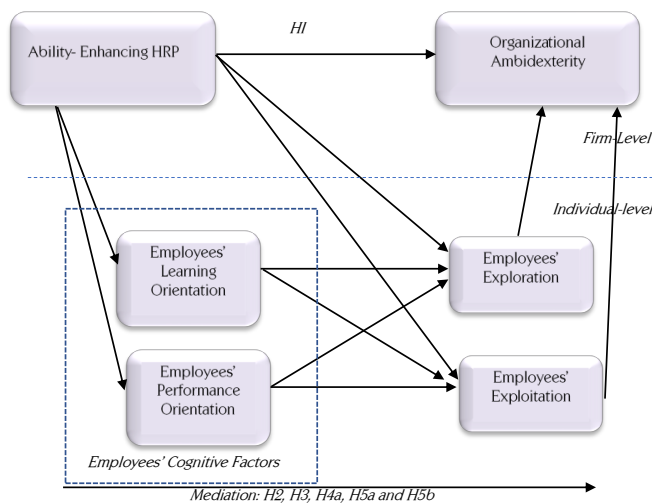
Hypothesis 4a: Employees' exploration mediates the relationship of ability-enhancing HR bundles and organizational ambidexterity.

Hypothesis 4b: Employees' exploitation mediates the association of ability-enhancing HR bundles and organizational ambidexterity.

The discussion of hypothesis 4a and 4b, we can derive another two hypotheses (serial mediation):

Hypothesis 5a: Employees' exploration and learning orientation mediates the association of ability-enhancing HR bundles and organizational ambidexterity.

Hypothesis 5b: Employees' exploitation and performance orientation mediate the association of ability-enhancing HR bundles and organizational ambidexterity.



Research Methodology

The target population was software companies of Pakistan registered with Pakistan's Ministry of Science and Technology. The companies selected for the sample of current study are located in four

cities, i.e., Islamabad, Lahore, Peshawar and Rawalpindi. A standardized questionnaire was used to investigate the multi-level model of ability-enhancing HR bundles, employees' exploration, and exploitation and organizational ambidexterity. Researcher distributed questionnaire to 10 employees and two senior managers from each software house. Employees like software engineers are most suitable for our research because they face conflicting demands of the exploitation and exploration. While, senior managers are typically involving in the planning and implementing HR bundles and organizational ambidexterity.

Moreover, data were collected in two time-waves. At first stage, researcher collected data from employees regarding ability-enhancing HR bundles, employees' exploration, and exploitation. After 4 weeks, researcher again approached respondents to participate in survey and collected data of organizational ambidexterity, employees learning and performance orientations. The data regarding firm-level variables ability-enhancing HR bundles and organizational ambidexterity were collected from senior managers. Whereas, data related to employees' learning, employees' performance orientations, employees' exploration, and exploitation were collected from lower level employees. In total, researcher distributed 800 questionnaires and only 600 were returned (response rate of 75%). The demographic variables are in Table 1.

Table 1. Demographic Analysis

Gender	Frequency
Male	68%
Female	32%
Age	
21-30 yrs.	39%
31-40	36%
41-50	19%
50 and above	06%
Experience	
1-5 yrs.	15%
6-10	28%
11-15	25%
16-20	19%
20 and above	06%

Measuring Instrument

Organizational ambidexterity was measured through scale developed by Gibson and Birkinshaw (2004). This measurement ($\alpha = 0.81$) was generally accepted by the literature (Popadic, Cerne & Milohnic, 2015; Cao et al., 2009). Similarly, selective hiring questionnaire was developed by [Boxall \(2007\)](#) and [Wright \(2003\)](#). It has total of 7 items and reliability of the scale of ($\alpha = .81$). In order to collect data on comprehensive training, a modified questionnaire ($\alpha = .69$) by Sun et al. (2007) was used. Whereas, job enlargement scale was adopted from Hackman and [Oldham \(1976\)](#) with reliability of ($\alpha = .83$). The scale of the employees' goal orientation was developed by Van Yperen (2002). There were 11 items ($\alpha = .91$) of learning orientation and 8 items ($\alpha = .90$) of performance orientation. The scale of the employees' exploration and exploitation was developed by Jansen et al, in 2006. Total seven-items for exploratory innovation ($\alpha = 0.86$) and seven-items for exploitative innovation ($\alpha = 0.80$) was developed.

Data Analysis

Both direct hypotheses and indirect hypotheses were tested in the current study. Initially, basic descriptive statistics and frequencies analysis were analyzed. Regression analysis and correlation were used to check the direct hypotheses. Whereas process by [Hayes \(2013\)](#) was used to measure indirect hypothesis (both simple and serial mediations). The MEDTHREE analysis (model 6) by Hayes (2013) is considered as the best method for serial mediation. The present study has used it for analyzing serial

mediation. The multi-level mediation was tested through SEM using AMOS. Therefore, both analyses are used to assess the simple and serial mediation to find out the answers to research questions used in the study.

Data Analysis and Results

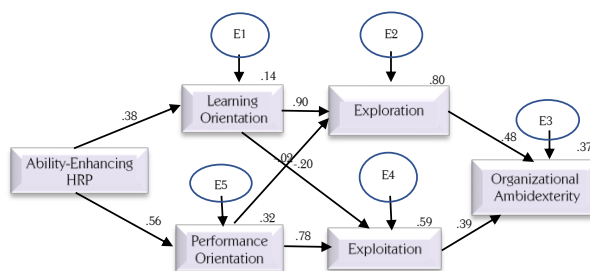
The table 2 explained descriptive and correlational analysis of the study. The descriptive analysis shows mean and standard deviation of the studied variables. The value for ability enhancing HR bundles (M= 5.58, SD= 0.32), learning orientation (M= 5.51, SD= 0.37), performance orientation (M= 5.23, SD= 0.36), employees' exploration (M = 5.56, SD= 0.32), employees' exploitation (M = 5.12, SD= 0.43) and organizational ambidexterity (M = 5.25, SD= 0.70).

Table 2. Descriptive Statistics and Correlation

Descriptive Statistics	Mean		Correlation						
	Mean	SD	1	2	3	4	5	6	
1. Ability-enhancing HRP	5.58	.32	1						
2. Learning orientation	5.51	.37	.404**	1					
3. Performance orientation	5.23	.36	.697**	.248**	1				
4. Employees' exploration	5.56	.32	.623**	.893**	.641**	1			
5. Employees' exploitation	5.12	.43	.346**	.404**	.671**	.447**	1		
6. Organizational ambidexterity	5.25	.70	.660**	.576**	.748**	.597**	.597**	1	

The correlation analysis measures the direction and power of the association among various variables of the study. The ability-enhancing HR bundles and employees' learning orientation have positive correlation ($r = 0.404$, $p = 0.00$), showing their positive relationships. The ability-enhancing HR bundles and employees' performance orientation have a strong positive correlation ($r = .697$, $p = 0.00$). Whereas, the network of connection of the ability-enhancing HR bundles and employees' exploration has a strong positive correlation ($r = 0.893$, $p = 0.00$). The connection of ability-enhancing HR bundles with employees' exploitation has weak positive correlation ($r = 0.346$, $p = 0.00$). The correlation result of ability-enhancing HR bundles (independent variable) and organizational ambidexterity is also positive ($r = 0.66$, $p = 0.00$). This depicts that enriched ability-enhancing HR bundles leads to organizational ambidexterity.

Structural equation modeling (SEM) was done using IBM SPSS Amos. It is prevailing graphical software that can make more realistic model than multiple regression models etc. We ran CFA to check the model fitness of the data and result shows model fit to data: $\chi^2 (504) = 138.675$, $p < 0.004$; RMSEA = 0.05; CFI = .937; and SRMR = .052. The reliability of the measures was greater than 0.7 reliable and showed CR score is acceptable for all the variables. Similarly, convergent validity was checked through factor loadings of all variables and results showed all values were greater than standard 0.7.



The structural model shows the relationship among all the variables. The result of the hypothesis 1 shows that 63% variation in organizational ambidexterity is due to ability-enhancing HR bundles. It is concluded that there is a strong positive relationship ($\beta = 0.63$, $p = 0.000$) between these two variables. The results of hypothesis 2, shows that there is a 14% variation ($R^2 = 0.14$, $F = 99$, $p = 0.00$) in learning orientation because of ability-enhancing HR bundles. The indirect hypothesis $\beta = 0.28$, SE

= .091, CI [.14, .15] showed the mediation of learning orientation between the ability-enhancing HR bundles and organizational ambidexterity. The result (table 3) of hypothesis 5a indicates that learning orientation and exploration mediates the relationship of ability-enhancing HR bundles and organizational ambidexterity. The result indicates that there is 42% variation ($R^2 = 0.57$, $F = 131$, $p = 0.000$) in employees' exploration is due to exploration, learning orientation and ability-enhancing HR bundles. The indirect hypothesis $\beta = 0.17$, $SE = .009$, $CI [.05, .47]$ shows the mediation of learning orientation and exploration between the relationship of ability-enhancing HR bundles and organizational ambidexterity (serial mediation).

Table 3. Direct Hypotheses Testing

Model 1 (Outcome =LO)							
	R	R ²	MSE	F	df1	df2	P
	.377	.142	.332	99.44	1.0000	598.0000	.0000
	B	SE	t	P	LLCI	ULCI	
AHRP	.318	.0320	9.597	.0000	.255	.381	
Model 1 (Outcome = EXPR)							
	R	R ²	MSE	F	df1	df2	P
	.649	.421	.338	217.71	2.000	597.000	.000
	B	SE	T	P	LLCI	ULCI	
LO	.240	.0413	5.840	.000	.1599	.3220	
AHRP	.568	.0348	16.34	.0000	.5005	.6372	
Model 1 (Outcome = OA)							
	R	R ²	MSE	F	df1	df2	P
	.7563	.5720	.7169	131.4371	3.0000	295.0000	.0000
	B	SE	T	P	LLCI	ULCI	
LO	.395	.0341	11.597	.000	.3282	.4621	
EXPR	.100	.0329	3.0418	.002	.0354	.1646	
AHRP	.439	.0336	13.063	.000	.3734	.5056	

Table 4. Medthree Analysis for Indirect Hypotheses Testing

(Total, Direct and Indirect Effects)				
	Effect (β)	Boot (SE)	LLCI	ULCI
Total indirect effects	.433	.125	.246	.746
M1 (LO)	.286	.091	.148	.504
M1&M2 (LO & EXPR)	.017	.009	.005	.047
M2 (EXPR)	.129	.068	.018	.304

The results of hypothesis 3, show that there is a 31% variation ($R^2 = 0.31$, $F = 277$, $p = 0.00$) in performance orientation because of ability-enhancing HR bundles. The indirect hypothesis $\beta = 0.65$, $SE = .038$, $CI [.38, 1.01]$ showed the mediation of performance orientation between ability-enhancing HR bundles and organizational ambidexterity. The result (table 3) of hypothesis 5b indicates that performance orientation and exploitation indirectly linked to the link of ability-enhancing HR practices and organizational ambidexterity. The result indicates that there is 69% variation ($R^2 = 0.69$, $F = 402$, $p = 0.000$) in organizational ambidexterity is due to exploitation, performance orientation and ability-enhancing HR bundles. The serial mediation hypothesis $\beta = 0.21$, $SE = .028$, $CI [.12, .36]$ showed mediation of learning orientation and exploitation between the relationship of ability-enhancing HR bundles and organizational ambidexterity (serial mediation).

Table 5. Direct Hypotheses Testing

Model 1 (Outcome =PO)							
	R	R2	MSE	F	df1	df2	P
	.377	.316	.358	277.43	1.0000	598.0000	.0000
	B	SE	t	P	LLCI	ULCI	
AHRP	.552	.0332	16.656	.0000	.487	.617	
Model 1 (Outcome = EXPL)							
	R	R2	MSE	F	df1	df2	P
	.649	.421	.338	217.71	2.000	597.000	.000
	B	SE	T	P	LLCI	ULCI	
PO	.545	.038	17.840	.000	.4830	.6078	
AHRP	.018	.031	11.34	.000	.5321	.6472	
Model 1 (Outcome = OA)							
	R	R2	MSE	F	df1	df2	P
	.8183	.6997	.1642	402.7515	3.0000	596.0000	.0000
	B	SE	T	P	LLCI	ULCI	
PO	.400	.0338	11.829	.000	.3338	.4668	
EXPL	.247	.0357	6.928	.000	.1771	.3171	
AHRP	.338	.0272	12.459	.000	.2852	.3920	

Table 6. Medthree Analysis for Indirect Hypotheses Testing

Total, Direct and Indirect Effects				
	Effect (β)	Boot (SE)	LLCI	ULCI
Total indirect effects	.860	.185	.246	1.302
M1 (PO)	.653	.038	.387	1.012
M1&M2 (PO & EXPL)	.219	.028	.128	.368
M2 (EXPL)	.013	.068	.067	.562

To test hypothesis 4a and 4b, mediation analysis was used and result shows $\beta = 0.21$, $SE = .028$, $CI [.12, .36]$ exploration is partially mediated in the relationship of ability-enhancing HR bundles and organizational ambidexterity. The mediating role of exploitation $\beta = 0.13$, $SE = .068$, $CI [.67, .56]$ was also supported partially.

Discussion

The basic result of current study provides inclusive provision to the theoretical model. It has been concluded that ability-enhancing HR bundles are positively connected to organizational ambidexterity in the presence of learning, and performance orientation and both exploration and exploitation. All the result of the present study is consistent with the previous literature (March, 1991; Duncan, 1976; Gibson & Birkinshaw, 2004).

The first hypothesis of current study accepted the positive association of ability-enhancing HR bundles and organizational ambidexterity. Previous literature also reported positive relationship between these two variables. The study also found that employees' learning orientation and performance orientation showed mediation between the relationship of ability-enhancing human resource bundles and organizational ambidexterity. This result of hypothesis 2 and 3 portrays the network of association illustrated in previous literature. The study supported that employees' learning and performance orientation are mediating the relationship of ability-enhancing HR bundles and organizational ambidexterity (Hoeksema, 2017; Yu, Gudergan & Chen, 2018). Few more studies also empirically validated and found partially mediation of learning orientation between these two variables (Kauppila & Tempelaar, 2016; Mom et al. 2018; Bouwmans, Runhaar, Wesselink & Mulder, 2017).

The hypothesis regarding mediating roles of exploration and exploitation between HR bundles and dependent variable organizational ambidexterity are accepted, and align with the findings of the

previous literature. But previous literature analyzed combined effects of these two variables as employees' ambidexterity (Mom et al., 2018). The serial mediation of learning orientation and exploration is accepted in the relationship of ability-enhancing HR bundles and organizational ambidexterity is also accepted and consisted with previous literature (Zhang, Cao, Shen & Qian, 2019). The second serial mediation of both performance orientation and exploitation existed in the relationship of the ability-enhancing HR bundles and organizational ambidexterity is also accepted and consisted with previous literature (Ahammad & Junni, 2019; Kaupila, 2018; Lee & Meyer-Doyle, 2017).

Implications

The most important challenge faced by the developing countries is innovation. In today's changing world, there is almost death of innovation in Pakistan due to scarce recourses and bad economic condition. Moreover, the trends in almost all the organizations of Pakistan are towards exploitation rather than exploration because of its high risk-oriented nature. This study will be helpful for the practitioners of the software companies regarding balanced implementation of employees' exploitation and exploration innovation through intangible assets. The study emphasized the role of human resource bundles leading to the organizational ambidexterity. This study suggested that strategists of software companies should focus on building employees' cognitive skills (learning orientation and performance orientation) through selective hiring, training and job enlargement. Consequently, employees will become more explorative and exploitative that leads to organizational ambidexterity.

Limitations and Recommendations

This study has important theoretical and practical contribution but it also has the following limitations. The data were collected from only IT industry. However, results of employees' ambidexterity may vary across industries in order to increase the generalizability of the result. Future researchers should examine ambidexterity at individual level in different industries. Future studies may examine mediation of other cognitive and motivational factors. This study has not explored the role of ambidextrous leaders. Future studies may address the ambidextrous role of manager as a moderator.

Conclusion

Emergence of ambidexterity in organizational context leads to success of the business in today's dynamic world. Employees should make their own decision in balancing opposing nature of exploitation and exploration. When HR managers paid attention towards building employees' learning orientation then their exploration innovation will be increased. In the same way, when HR experts focused on increasing employees' learning orientation then their exploitation will be enhanced automatically. This study empirically examined and suggested ability-enhancing HR bundles increased organizational ambidexterity directly and also through mediation of employees' learning orientation, performance orientation, exploration and exploitation.

References

- Ahmmad, M. F., Glaister, K. W., & Junni, P. (2019). Organizational ambidexterity and human resource practices.
- Alghamdi, F. (2018). Ambidextrous leadership, ambidextrous employee, and the interaction between ambidextrous leadership and employee innovative performance. *Journal of Innovation and Entrepreneurship*, 7(1), 1.
- Becker, B. E., & Huselid, M. A. (2006). Strategic human resources management: where do we go from here? *Journal of management*, 32(6), 898-925.
- Birkinshaw, J., & Gupta, K. (2013). Clarifying the distinctive contribution of ambidexterity to the field of organization studies. *Academy of Management Perspectives*, 27(4), 287-298.
- Bledow, R., Frese, M., Anderson, N., Erez, M., & Farr, J. (2009). A dialectic perspective on innovation: Conflicting demands, multiple pathways, and ambidexterity. *Industrial and Organizational Psychology*, 2(3), 305-337.
- Bouwman, M., Runhaar, P., Wesselink, R., & Mulder, M. (2017). Fostering teachers' team learning: An interplay between transformational leadership and participative decision-making? *Teaching and Teacher Education*, 65, 71-80.
- Boxall, P., & Macky, K. (2007). High-performance work systems and organisational performance: Bridging theory and practice. *Asia Pacific Journal of Human Resources*, 45(3), 261-270.
- Brix, J. (2019). Ambidexterity and organizational learning: revisiting and reconnecting the literatures. *The Learning Organization*.
- Button, S. B., Mathieu, J. E., & Zajac, D. M. (1996). Goal orientation in organizational research: A conceptual and empirical foundation. *Organizational behavior and human decision processes*, 67(1), 26-48.
- Caniëls, M. C., & Veld, M. (2019). Employee ambidexterity, high performance work systems and innovative work behaviour: How much balance do we need? *The international journal of human resource management*, 30(4), 565-585.
- Caniëls, M. C., Neghina, C., & Schaetsaert, N. (2017). Ambidexterity of employees: the role of empowerment and knowledge sharing. *Journal of Knowledge Management*.
- Chandrasekaran, A., Linderman, K., & Schroeder, R. (2012). Antecedents to ambidexterity competency in high technology organizations. *Journal of operations management*, 30(1-2), 134-151.
- Diaz-Fernandez, M., Pasamar-Reyes, S., & Valle-Cabrera, R. (2017). Human capital and human resource management to achieve ambidextrous learning: A structural perspective. *BRQ Business Research Quarterly*, 20(1), 63-77.
- Duncan, B. L. (1976). Differential social perception and attribution of intergroup violence: Testing the lower limits of stereotyping of blacks. *Journal of personality and social psychology*, 34(4), 590.
- Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual review of psychology*, 53(1), 109-132.
- Gerbing, D. W., & Anderson, J. C. (1988). An updated paradigm for scale development incorporating unidimensionality and its assessment. *Journal of marketing research*, 25(2), 186-192.
- Gibson, C. B., & Birkinshaw, J. (2004). The antecedents, consequences, and mediating role of organizational ambidexterity. *Academy of management Journal*, 47(2), 209-226.
- Hayes, A. F., & Scharkow, M. (2013). The relative trustworthiness of inferential tests of the indirect effect in statistical mediation analysis: Does method really matter? *Psychological science*, 24(10), 1918-1927.
- Hoeksema, M. (2017). Individual Ambidexterity.
- Janssen, O., & Van Yperen, N. W. (2004). Employees' goal orientations, the quality of leader-member exchange, and the outcomes of job performance and job satisfaction. *Academy of management journal*, 47(3), 368-384.
- Junni, P., Sarala, R. M., Tarba, S. Y., Liu, Y., & Cooper, C. L. (2015). Guest editors' introduction: The role of human resources and organizational factors in ambidexterity. *Human Resource Management*, 54(S1), s1-s28.

- Kassotaki, O., Paroutis, S., & Morrell, K. (2019). Ambidexterity penetration across multiple organizational levels in an aerospace and defense organization. *Long Range Planning*, *52*(3), 366-385.
- Kauppila, O. P., & Tempelaar, M. P. (2016). The social-cognitive underpinnings of employees' ambidextrous behaviour and the supportive role of group managers' leadership. *Journal of Management Studies*, *53*(6), 1019-1044.
- Koryak, O., Lockett, A., Hayton, J., Nicolaou, N., & Mole, K. (2018). Disentangling the antecedents of ambidexterity: Exploration and exploitation. *Research Policy*, *47*(2), 413-427.
- Lavie, D., Stettner, U., & Tushman, M. L. (2010). Exploration and exploitation within and across organizations. *The Academy of Management Annals*, *4*(1), 109-155.
- Lê Cao, K. A., González, I., & Déjean, S. (2009). integrOmics: An R package to unravel relationships between two omics datasets. *Bioinformatics*, *25*(21), 2855-2856.
- Lee, S., & Meyer-Doyle, P. (2017). How performance incentives shape individual exploration and exploitation: Evidence from microdata. *Organization Science*, *28*(1), 19-38.
- Lee, S., & Meyer-Doyle, P. (2017). How performance incentives shape individual exploration and exploitation: Evidence from microdata. *Organization Science*, *28*(1), 19-38.
- Littell, J. H., Corcoran, J., & Pillai, V. (2008). *Systematic reviews and meta-analysis*. Oxford University Press.
- Messersmith, J. G., Patel, P. C., Lepak, D. P., & Gould-Williams, J. S. (2011). Unlocking the black box: Exploring the link between high-performance work systems and performance. *Journal of applied psychology*, *96*(6), 1105.
- Mom, T. J., Chang, Y. Y., Cholakova, M., & Jansen, J. J. (2018). A multilevel integrated framework of firm HR practices, individual ambidexterity, and organizational ambidexterity. *Journal of Management*, 0149206318776775.
- Mubarik, M. S., Naghavi, N., & Mahmood, R. T. (2019). Intellectual capital, competitive advantage and the ambidexterity liaison. *Human Systems Management*, *38*(3), 267-277.
- Nowacki, C., & Monk, A. (2020). Ambidexterity in government: The influence of different types of legitimacy on innovation. *Research Policy*, *49*(1), 103840.
- Oldham, G. R., Hackman, J. R., & Pearce, J. L. (1976). Conditions under which employees respond positively to enriched work. *Journal of applied psychology*, *61*(4), 395.
- O'Reilly III, C. A., & Tushman, M. L. (2013). Organizational ambidexterity: Past, present, and future. *Academy of management Perspectives*, *27*(4), 324-338.
- Patel, P. C., Messersmith, J. G., & Lepak, D. P. (2013). Walking the tightrope: An assessment of the relationship between high-performance work systems and organizational ambidexterity. *Academy of Management Journal*, *56*(5), 1420-1442.
- Patel, P. C., Messersmith, J. G., & Lepak, D. P. (2013). Walking the tightrope: An assessment of the relationship between high-performance work systems and organizational ambidexterity. *Academy of Management Journal*, *56*(5), 1420-1442.
- Popadić, M., Černe, M., & Milohnić, I. (2015). Organizational ambidexterity, exploration, exploitation and firm's innovation performance. *Organizacija*, *48*(2), 112-119.
- Raisch, S., & Birkinshaw, J. (2008). Organizational ambidexterity: Antecedents, outcomes, and moderators. *Journal of management*, *34*(3), 375-409.
- Sabwami, P. B. (2015). *Role of high-performance work practices on organizational performance. A survey of listed state corporations in the Nairobi stock exchange in Kenya* (Doctoral dissertation, Human Resource Management, JKUAT).
- Satyanarayana, T., Johri, B. N., & Das, S. K. (Eds.). (2019). *Microbial Diversity in Ecosystem Sustainability and Biotechnological Applications: Volume 1. Microbial Diversity in Normal & Extreme Environments*. Springer.
- Shin, J. E., Jung, K., Kim, M., Hwang, K., Lee, H., Kim, I. S., ... & Park, K. I. (2018). Brain and spinal cord injury repair by implantation of human neural progenitor cells seeded onto polymer scaffolds. *Experimental & molecular medicine*, *50*(4), 1-18.
- Simsek, Z., Heavey, C., Veiga, J. F., & Souder, D. (2009). A typology for aligning organizational ambidexterity's conceptualizations, antecedents, and outcomes. *Journal of Management Studies*, *46*(5), 864-894.

- Smith, W. K., & Tushman, M. L. (2005). Managing strategic contradictions: A top management model for managing innovation streams. *Organization science*, *16*(5), 522-536.
- Swart, J., Turner, N., Van Rossenberg, Y., & Kinnie, N. (2019). Who does what in enabling ambidexterity? Individual actions and HRM practices. *The International Journal of Human Resource Management*, *30*(4), 508-535.
- Swart, J., Turner, N., Van Rossenberg, Y., & Kinnie, N. (2019). Who does what in enabling ambidexterity? Individual actions and HRM practices. *The International Journal of Human Resource Management*, *30*(4), 508-535.
- Uhl-Bien, M., & Arena, M. (2018). Leadership for organizational adaptability: A theoretical synthesis and integrative framework. *The Leadership Quarterly*, *29*(1), 89-104.
- Vallina, A. S., Moreno-Luzon, M. D., & Ferrer-Franco, A. (2019). The individual side of ambidexterity. *Employee Relations: The International Journal*.
- Veld, M. F. A., Caniels, M. C. J., & Gijzel, A. (2016). Team learning in health care: the role of job demands, resources and engagement. In *International workshop on Teamworking*.
- Venugopal, A., Krishnan, T. N., Kumar, M., & Upadhyayula, R. S. (2019). Strengthening organizational ambidexterity with top management team mechanisms and processes. *The International Journal of Human Resource Management*, *30*(4), 586-617.
- Wei, Y. C., Han, T. S., & Hsu, I. C. (2010). High-performance HR practices and OCB: A cross-level investigation of a causal path. *The International Journal of Human Resource Management*, *21*(10), 1631-1648.
- Wright, P. M., & Ulrich, M. D. (2017). A road well-traveled: The past, present, and future journey of strategic human resource management. *Annual Review of Organizational Psychology and Organizational Behavior*, *4*, 45-65.
- Wright, P. M., Gardner, T. M., & Moynihan, L. M. (2003). The impact of HR practices on the performance of business units. *Human resource management journal*, *13*(3), 21-36.
- Yu, Y. T. (2010). *Ambidexterity: The simultaneous pursuit of service and sales goals in retail banking* (Doctoral dissertation, The University of New South Wales Sydney, Australia).
- Yu, Y. T. (2010). *Ambidexterity: The simultaneous pursuit of service and sales goals in retail banking* (Doctoral dissertation, The University of New South Wales Sydney, Australia).
- Zimmermann, A., Raisch, S., & Cardinal, L. B. (2018). Managing persistent tensions on the frontline: A configurational perspective on ambidexterity. *Journal of Management Studies*, *55*(5), 739-769.