

# Mediating Role of Dynamic Capabilities on the Relationship between Human Resource Development and Organizational Effectiveness

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**Background and purpose:** The recent literature established that human resource development (HRD) is significantly related to organizational effectiveness (OE). In rapidly changing environments, the organizations should strive to address the shifts in the environment and cope with markets conditions through developing dynamic capabilities, in return, enhance organizational effectiveness. The main purpose of this study is to examine the mediating role of dynamic capabilities on the relationship between human resources development and organizational effectiveness in the Iraqi public universities context.

**Design/Methodology/Approach:** Data were collected through an online questionnaire survey from 215 employees executive and non-executive employees working in the selected public universities in Iraq. Structural equation modeling (SEM) was employed to test the proposed research model.

**Results:** The analyzed data supported all the hypothesized relationships of the study. This study finds that HRD practices have a significant influence on organizational effectiveness and dynamic capabilities. Further, dynamic capabilities significantly influence on organizational effectiveness. Also, the study empirically supports the mediating effect of dynamic capabilities on the relationship between HRD practices and organizational effectiveness.

**Conclusion:** In the literature, there is still a lack of how HRD practices impact on organizational effectiveness through the mechanisms of dynamic capabilities. Therefore, this research contributes to the literature by pointing out the mediating role of dynamic capabilities on the relationship between HRD and organizational effectiveness. Based on the existing literature and empirical results, the study provides the theoretical and practical implications which are further discussed in detail.

**Keywords:** *Human resource development, Dynamic capabilities, Organizational effectiveness*

## 1 Introduction

Business environments today, characterized by knowledge-based competition and rapidly changing markets, require organizations use effective strategies to invest and maximize knowledge and skills. Organizations continually attempt to leverage human resource to achieve

organizational success. The concept of human resource development (HRD) has emerged as a strategy to develop and improve employee's knowledge, skills, and abilities to enhance organizational effectiveness (Gberevbie, 2012). Developing HRD practices have the potential to improve organizational performance. Some empirical researches have proved that such as (Brockbank, 1999; Garavan, 2007; Clardy, 2008 and Han et al., 2006) emphasis that

HRD as a set of responsibilities, competencies, practices, programs, initiatives that have a potential influence on organizational effectiveness. Also, Several researchers (McCracken & Wallace.2000; Otoo et al. 2018; Shoo 2016; Alagaraja & et al. 2015; and Nilsson & Ellstrom 2012) established that there is a significant relationship between human resource development and organizational effectiveness. Nevertheless, in rapidly changing environments it is compulsory that organizations are prepared for change and have the human capital to meet and cope with the environmental turbulence. HRD plays a key role to maintain and develop human resources in accordance with the changing direction of corporate goals and objectives (Shanahan et al. 2012). Hence, in such an environment, superior organizational effectiveness based on organizations ability to integrate, build and reconfigure internal and external resource to address environmental changes, the process of which is termed as dynamic capabilities. Dynamic capabilities contribute to organizational effectiveness through an effective modification of existing operating routines, enabling the organization to adopt environmental changes by way of sensing environmental conditions, learning response patterns and reconfiguring operating routines. (Teece et al.,1997). Furthermore, many strategic management researchers (Lado and Wilson 1994; Lepak and Snell 1999; Wright et al. 2001) argue that dynamic capabilities can enhance and sustain organizational effectiveness over time when they are developed with complementary human resource development practices. Despite this progress, there is still a lack in the literature about an understanding of the mediating mechanisms of dynamic capabilities on the relationship between HRD practices and organizational effectiveness. More recently, studies such as (Wang et al. 2011; Wilhelm et al.,2015; and Helfat et al.,2007) focus on how developing dynamic capabilities by human resource. Based on the knowledge of the authors there were no studied investigated the alternative relationships except Lopez-Cabrales et al. (2017) investigate the relationship between dynamic capabilities and HRM considering the mediating role of leadership styles Hence, the purpose of this study is to investigate the mediating role of dynamic capabilities on the relationship between human resource development and organizational effectiveness in the selected public universities context. Consequently, this study tries to address this gap through proposing an empirical model that demonstrates dynamic capabilities constructs i.e. sensing capabilities, learning capabilities and reconfirmation capabilities mediate the relationship between HRD constructs i.e. talent development, training and development, organizational development, and career development and organizational effectiveness. In addition to, this study is novel which tries to meet the need of the higher education sector in Iraq to such studies, for its influential role in society.

The remainder of the article is organized as follows: the first section presents the introduction. The second section

describes the literature review. The third section presents the research methodology. The fourth section shows the data analysis and results. The last section presents a discussion of the findings including theoretical and practical implications, study limitations and future research.

According to the discussion above, the following questions guided the study design:

company B:

- Do HRD practices influence organizational effectiveness?
- Do HRD practices influence dynamic capabilities?
- Do dynamic capabilities influence organizational effectiveness?
- Do dynamic capabilities mediate the relationship between HRD practices and organizational effectiveness?

## 2 Literature review and hypotheses development

### 2.1 Human resource development contributions to organizational effectiveness and dynamic capabilities

This study argues that HRD practices have a direct impact on organizational effectiveness regardless of environmental changes. Several researchers such as (Mohammed 2006; Alagaraja et al., 2015; and Shoo 2016) have discussed this issue. Mohammed (2006) argues that the success and progress of an organization lie in its ability to explore and attract the talent and potentials of its workforce, and this is can be achieved through the HRD practices. Riordan et al (2005) argue that appropriate, ongoing training and development and career development enable employees to develop the skills, abilities, and knowledge required for effective performance, in turn, improve organizational effectiveness. Likewise, Adhikari, (2010) indicates that HRD supports and strengthening of an organization's human capital base by increasing the level of knowledge, skills, and capabilities of individuals in an organization and thus contributes to improved performance and competitive advantage. Sahoo (2016) argues that HRD practices training, career development, and performance management have an impact on the building of employee competencies which, in turn, enhance organizational effectiveness. Agwu & Ogiriki, (2014) argue that use of HRD practices training and development, organizational development and career development lead to improving organizational effectiveness through improvement in individual,

group knowledge, skills, attitudes, and behavior. Otoo et al., (2019) argue that HRD practices such as performance appraisal, career development, and training and development have a significant impact on organizational effectiveness through their impact on employee performance. Similarly, Swanson and Holton (2009) emphasize that HRD practices improve employee competence, in turn, enhance organizational effectiveness.

Alagaraja et al., (2015) state that there are five significant approaches for investigating the linkage of HRD and organizational performance and effectiveness: First, the best-fit approach which is an emphasis that HRD practices must convenient the characteristics of the organization. Second, the best-practice approach suggests HRD practices have a positive influence on performance and these practices can be adopted by other organizations for improving performance. Third, a combination of a best-fit approach and best-practice approach suggests that HRD contributions to the organizational effectiveness and performance through the combining of both the approaches. Fourth, the stake holder's perception approach indicates that investigating the impact HRD on organizational effectiveness and performance through the contribution of stakeholder perceptions. Fifth, focus on the aforementioned approaches.

Nevertheless, in the rapidly changing environment, the organizations need to address environmental shifts and changes through developing so-called dynamic capabilities. This study states that HRD practices have a significant impact on building dynamic capabilities. However, the relationship between HRD and dynamic capabilities is still under developing (Wright and Snell, 2009). Only a few studies address the linkage between HRD and dynamic capabilities (Teece et al., 1997; Eisenhardt and Martin, 2000; Zahra & George, 2002; Teece, 2007; Hsu and Wang, 2012) have confirmed that learning, sensing, integrating, and reconfiguration capabilities of the organization are highly lie on employee's knowledge, skills, abilities and experienced these are the outcome of human resources development practices. Likewise, Garavan et al. (2016) argue that HRD practices help employees to work effectively in different environmental conditions and improve knowledge, skill, behavioral, and attitudinal outcomes that provide employees with the flexibility to respond to shifts in the environment. When organizations use human resource development practices to develop and leverage human capital, in turn, may catch the benefits of complementarities and co-specialization to develop dynamic capabilities (Barney 1991; Grant 1996). Human resource development practices such as training and development performance evaluation and compensation systems have the potential to enhance the dynamic capability and maintain the sustainable competitive advantage of organizations (Yan and Gao, 2016). In changing environmental conditions HRD practices can increase the flexible organization, organizational learning, resources integration, and environmental perception (Chengcheng, 2010). Teece et al., (1997) de-

fine dynamic capabilities as the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments. Garavan (2007) argues that HRD supports the development of dynamic capabilities that are critical in developing and maintaining a sustained competitive advantage.

This study argues that HRD practices have a direct impact on dynamic capabilities. In order to explore in an integrated way, the linkage between HRD and dynamic capabilities, this study determined the dynamic capabilities in three measured dimensions: sensing capability, learning capability, and reconfiguration capability. Sensing capability is the firm's ability constantly to discover, explore and interpret opportunities in the environment (Pavlou and El Sawy 2011). Therefore, HRD helps organizations to make sense of shifts in the environment, set plans, and seize opportunities (Garavan et al., 2016). Eisenhardt & Martin, (2000) state that learning capability is the firm ability's acquiring or creating specific knowledge necessary to seize the identified opportunities. HRD practices improve learning mechanisms such as experience accumulation, knowledge creation, and sharing knowledge are critical to the formation of learning capability (Zollo and Winter (2002). Reconfiguration capability refers to the recombination and transformation of existing resources that enable firms to address the changes in market conditions (Teece, 2007). HRD enhances the creation of new capabilities, configure assets and organizational development to address the markets and technologies changes.

This study contributes to the theory and research on human resource development contribution to organizational effectiveness and dynamic capabilities by examining the direct impact of HRD practices on organizational effectiveness and dynamic capabilities. Based on the aforementioned contributions, this study hypothesizes

*H1: HRD practices have a significant impact on organizational effectiveness.*

*H2: HRD practices have a significant impact on dynamic capabilities.*

## 2.2 Dynamic capabilities and organizational effectiveness

The dynamic capabilities concept has emerged due to the changes in environments and market. Scholars (Hammer, 2001 and Zott, 2003) have stated that to sustain a competitive advantage in a rapidly changing environment, organizations need to develop dynamic capabilities for improving core competencies and enhance organizational effectiveness. This study argues that dynamic capabilities have a significant potential on organizational effectiveness. But, The association between dynamic capabilities and organizational effectiveness and performance is still unclear (Zhou & Zhou, 2017). However, some scholars (Teece et al. 1997; Eisenhardt & Martin, 2000; López, 2005 and Wilden et al, 2013) argue that dynamic capabilities enable organizations to link the resource base with environmental shifts, create market change, and facilitate resource access and resource development, in turn, enhance the organizational effectiveness. Teece (2007) argues that dynamic capabilities enable an organization to achieve competitive advantage in a changing business environment through developing specific capabilities and competencies which support organizational effectiveness and performance. Fainshmidt et al., (2016) argue that dynamic capabilities are significantly related to organizational effectiveness. The scholars (Rehman and Saeed, 2015; Takahashi et al., 2016 and Zhou and Zhou, 2017) emphasize that dynamic capabilities have an indirect impact on the organizational effectiveness through mediated by the development of operational capabilities. Based on the above discussion, the third hypothesis can be derived as follows:

*H3: Dynamic capabilities have a significant impact on organizational effectiveness.*

## 2.3 Human resource development, dynamic capabilities, and organizational effectiveness

The aforementioned literature have established that HRD practices significantly influence organizational effectiveness. But, in rapidly changing environments, HRD is often not enough to support organizational effectiveness (Teece et al., 1997 and Aminu and Mahmood, 2015). Thus, this study, argues that in such dynamic environment HRD practices have potential to influence organizational effectiveness indirectly through mediating of dynamic capabilities. Moreover, due to rapidly changing in the environment, the organizations should prepare for the change to address the shifts in the environment and cope with markets conditions. The organizations strive to develop capabilities to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments,

in return, support make decisions within the organization which has the potential to enhance organizational effectiveness and performance (Eisenhardt and Martin, 2000; Teece, 2007). HRD plays a key role to maintain and develop human resources in accordance with the changing direction of corporate goals and objectives (Shanahan et al. 2012). HRD contributes to the creation of new capabilities and the renewal and reconfigures of existing capabilities to cope with dynamic environments (Zollo and Winter 2002). Therefore, it is significant to study the mediating role of dynamic capabilities in the relationship between HRD and organizational effectiveness. However, due to limited studies in the literature, there is still confusion about how dynamic capabilities mediate the relationship between HRD and organizational effectiveness. Even though, there are few researchers (Lado and Wilson 1994, Tseng and Lee, 2014; Aminu and Mahmood, 2015; and Garavan et al, 2016) investigated this issue. Furthermore, (Lado and Wilson 1994; Wright et al. 2001) argue that dynamic capabilities can ensure sustainable organizational effectiveness when they are developed through HRD practices. Similarly, Garavan et al. (2016) argue that HRD practices, structures, and processes can, develop unique dynamic capabilities that enhance the organizational effectiveness in the environmental turbulence. Wang et al., (2012) argue that to maintaining dynamic capabilities requires organizations to develop the human resources that enable them to improve the organizational effectiveness and preference and in correspondence with the dynamic environment. As such, the present study hypothesized that dynamic capabilities mediate the relationship between human resources development practices and organizational effectiveness. The hypothesis is presented as follows:

*H4: Dynamic capabilities significantly mediate the relationship between human resources development practices and organizational effectiveness.*

Considering the above-mentioned hypothesizes, the study proposed the following model as a conceptual model of this paper (Figure 1).

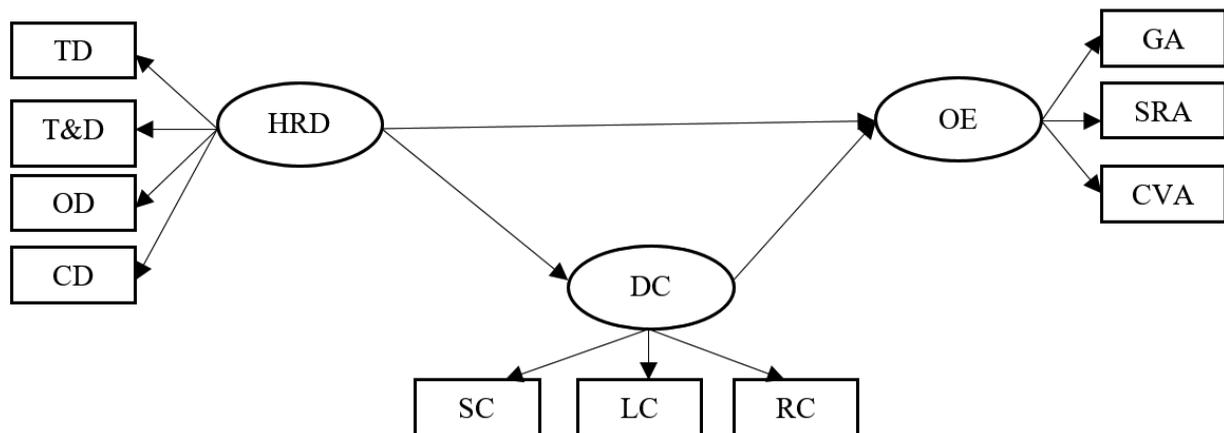


Figure 1: Conceptual model

HRD=Human Resource Development, DC=Dynamic Capabilities, OE=Organizational Effectiveness, TD=Talent Development, T&D=Training & Development, OD=Organizational Development, CD=Career Development SC=Sensing Capability, LC=learning Capability= Reconfiguring Capability, GA=Goal Approach, SRA=System Resource Approach, CVA=Competing Values Approach.

### 3 Research methodology

#### 3.1 Research design, sampling and data collection

To test the proposed model, this research employed a deductive approach based on a quantitative method. The purpose of this quantitative method is to examine the mediating role of dynamic capabilities on the relationship between human resource development and organizational effectiveness. According to Sekaran & Bougie, (2013) quantitative method is appropriate to use in hypotheses testing of the relationship between independent and dependent variables. The study took place in top ten Iraqi public universities. For collecting the primary data this research used the survey method because it is considered an economical and efficient method to gather quantitative data concerned to a given population for the purpose of generalizing the result. This study employed a web-based survey for collecting data from the sample of the study. An online questionnaire was developed based on the literature (see table 2 and appendix 1) to collect the primary data. The questionnaire was created by the google-forms tool, which is commonly used by researchers for collecting data. The web-based questionnaires were distributed through E-mail designed to collect the primary data from the selected universities. The sample is including a number of deans, heads of departments, faculty members, principals, and administrative staff which seems to provide a corresponding

sample for conducting data collecting and analyzing. The questionnaire was distributed to around 342 employees, out of which 215 completed questionnaires were obtained, with a response rate of 62.86 % of the respondents. The demographic data of the respondents are presented in Table 1. It shows that out of the 215 respondents, (76.74%) were males. The majority of the respondents (44.65%) were in the age category within 31-40 years. Most of the respondents at (61.86%) were non-executive designation and (38.13) were an executive designation. The majority of the respondents (47.44%) were holders Ph.D. degree while (40.46%) were holders master's degree and (12.93%) were holders bachelor's degree. A little lower than half of the respondent (41.39%) had work experience 11-20 years.

#### 3.2 Data analysis procedure

Data analysis was conducted to address the research questions, objectives and hypotheses. Statistical Package for Social Science (SPSS) version 23 and the Analysis of Moment Structures (AMOS) software version 24 were used for analyzing data. Before conducting data analysis, the data preparation was done on the completed questionnaires by editing, coding, entering and cleaning the data. Descriptive statistics such as the frequency and percentage, mean, standard deviation, were used to provided data summarization of demographic characteristics of respondents. Also, the Pearson correlation coefficient was used to describe the correlations among the variables. Confirmatory factor analysis (CFA) was carried out to assess the validity of the measurement model, fitting and modification.

Table 1: The demographic data of the respondents

Item		Frequency	Percentage
Gender of the respondent	Male	165	76.74
	Female	50	23.25
Age of the respondent	20-30 years	34	15.81
	31-40 years	96	44.65
	41-50 years	65	30.23
	51-60 years	14	6.51
	More than 61 years	6	2.79
Designation	Executive	82	38.13
	Non-Executive	133	61.86
Educational achievements	Bachelor's Degree	26	12.93
	Master's Degree	87	40.46
	Ph.D. Degree	102	47.44
Work Experience	Less than 5 years	31	14.41
	5-10 years	63	29.30
	11-20 years	89	41.39
	More than 21 years	32	14.88

Also, Cronbach's Alpha was used to examine the reliability of the scale items. The overall model fit was assessed using five goodness-of-fit indices, namely the chi-square/degree of freedom ( $\chi^2/df$ ) ratio, the comparative fit index (CFI), the Tucker-Lewis index (TLI), the goodness of fit index (GFI), the root means square error of approximation (RMSEA). In addition, squares structural equation modeling (SEM) was used to test empirically the proposed hypotheses. SEM is commonly used in the social sciences because of its ability to explain the relationships between unobserved constructs (latent variables) from observable variables (Henson & Roberts., 2006). SEM is comparable to common quantitative methods, such as correlation, multiple regression, and analysis of variance to estimate and test the relationships among constructs.

### 3.3 Instrumentation development and measures

The questionnaire was developed based on an extensive review of the literature related to the topic of the study. The questionnaire comprises of two sections. Section one collects participant & institutional background information of the respondents such as age, gender, a position held, educational attainment, work experience, and organization size. Section two includes questions are designed to measure the variables of the study by using a comparative seven-point Likert-type scale ranging from 1-7, in which (1 = strongly disagree, 7 = strongly agree). The variables

used in this study were assessed using multiple items from different studies in the extant literature.

*Human resource development:* was operationalized as a four-dimensional construct: talent development, training and development, organizational development, and career development. 20 items are designed to measure HRD constructs by employing five items for each construct respectively, these items were adopted from (Mahfoozi et al.,2018),( Asfaw et al.2015),( Spirina,2015), (Zadeha & Ghahremanib, 2016), (Xueling,2017), (Weng&McElroy, 2012).

*Dynamic capabilities:* dynamic capability was operationalized by three dimensions: sensing capability, learning capability, integrating capability. 15 items are designed to measure dynamic capabilities constructs by employing five items for each construct respectively. The items were adapted from (Teece et al., 1997), (Eisenhardt and Martin, 2000), (Nieves& Haller, 2014).

*Organizational effectiveness:* was measured by three approaches: goal approach, system resource approach, and competing values approach. 12 items were used to measure organizational effectiveness by employing four items for each construct respectively. The items were adapted from (Gold et al., 2001), (Rahman et al., 2013),( Banat,2002),( Abu el Khair,2016). Also, Cronbach 's alpha coefficient was used to evaluate the internal consistency of the scales where Cronbach 's alpha coefficient for all the constructs ranges between 0.874 and 0.962 and it is considered acceptable which indicates that all the items

are internally consistent. Table (2) shows detailed information regarding the variables, sources, number of the items and Cronbach's alpha.

Table 2: The study measures in regard to the variables, sources, and Cronbach's alpha

variables		Source	Number of items	Cronbach's alpha
Human Resource Development	Talent development	(Mahfoozi et al., 2018)	5	0.946
	Training and development	(Asfaw et al., 2015)	5	0.932
	Organizational development	(Rastgoo, 2016) and (Zadeha & Ghahremanib, 2016)	5	0.947
	Career development	(Weng & McElroy, 2012) and (Xueling, 2017)	5	0.953
Dynamic Capabilities	Sensing capability	Teece et al. ,1997);( Eisenhardt and Martin ,2000);( Nieves&Halller,2014)	5	0.924
	Learning capability		5	0.962
	Reconfiguring capability		5	0.938
Organizational Effectiveness	Goal approach	(Banat,2002)	4	0.931
	System resource approach	(Abu El Khair, 2016)	4	0.874
	Competing values approach	(Gold et al., 2001),(Rahman et al., 2013)	4	0.936

## 4 Results

### 4.1 Descriptive statistics

Table 3 shows a descriptive analysis (mean and standard deviation) of the data and the correlations matrix among variables. The means score for all the constructs is located between (3.29-3.80) and standard deviation (1.48-1.62) that indicates a good implementation of HRD practices and dynamic capabilities in enhancement organizational effectiveness in the selected public universities of Iraq. Also, the results show that each of the constructs is positively and significantly correlated with each other.

### 4.2 Measurement model

To assess the validity of the measurement model and to test the fitting of the data with the proposed model confirmatory factor analysis (CFA) was used to assess the fitness of a measurement model. This study used some indexes like CMIN/df, GFI, TLI, CFI, and RMSEA to investigate the goodness of fit of the model. Table 4 presents the results of the index of confirmatory factor analysis. The results indicate that the goodness-of-fit indicators of all three models are satisfied with the suggested threshold value by (Jacob et al., 2003) thus, indicated good model fitness.

Table 3: Descriptive and correlation results

	Mean	S. D	TD	T&D	OD	CD	SC	LC	RC	GA	SRA	CVA	HRD	DCs	OE
TD	3.29	1.59	1.0												
T&D	3.49	1.56	.77**	1.0											
OD	3.46	1.60	.77**	.82**	1.0										
CD	3.35	1.59	.75**	.79**	.83**	1.0									
SC	3.38	1.53	.79**	.79**	.84**	.80**	1.0**								
LC	3.41	1.54	.80**	.81**	.86**	.84**	.88**	1.0							
RC	3.53	1.56	.77**	.81**	.84**	.79**	.84**	.86**	1.0						
GA	3.80	1.62	.73**	.83**	.85**	.78**	.80**	.84**	.84**	1.0					
SRA	3.44	1.48	.70**	.79**	.76**	.71**	.77**	.85**	.82**	.85**	1.0				
CVA	3.80	1.53	.62**	.69**	.70**	.69**	.67**	.72**	.73**	.77**	.74**	1.0			
HRD	3.39	1.58	.90**	.92**	.93**	.92**	.87**	.90**	.87**	.87**	.80**	.74**	1.0		
DCs	3.44	1.54	.82**	.84**	.88**	.85**	.95**	.96**	.94**	.87**	.85**	.74**	.92**	1.0	
OE	3.68	1.54	.73**	.83**	.83**	.79**	.80**	.87**	.86**	.94**	.93**	.90**	.87**	.88**	1.0

\*\* Correlation is significant at the 0.01 level (2-tailed).

HRD=Human Resource Development, DCs=Dynamic Capabilities, OE=Organizational Effectiveness, TD=Talent Development, T&D=Training & Development, OD=Organizational Development, CD=Career Development SC=Sensing Capability, LC=learning Capability= Reconfiguring Capability, GA=Goal Approach, SRA=System Resource Approach, CVA=Competing Values Approach. Measurement Items used for calculation of the listed variables are explained in Appendix 1.

Table 4: Index of confirmatory factor analysis

	HRD model	DC model	OE model
CMIN/df	1.895	1.547	1.828
GFI	0.874	0.883	0.900
TLI	0.931	0.970	0.955
CFI	0.944	0.978	0.973
RMSEA	0.0721	0.073	0.070

### 4.3 Reliability and Validity

In this study and before testing the hypotheses reliability and validity of measurement scales were assessed by using confirmatory factor analysis (CFA), and AMOS 24 was used to estimate convergent validity and discriminant validity. The reliability of the scales was evaluated using Cronbach's alpha coefficient as it is seen in table 2, Cronbach's alpha coefficient for all constructs ranges between 0.874 and 0.962 and it is considered acceptable which indicates that all the items are internally consistent (Hair et al., 2010). In order to determine the convergent validity, there are three important indicators of convergent validity which are factor loadings (standardized estimates), Avere-

age Variance Extracted (AVE) and Composite Reliability (CR). Hair et al., (2006) suggests that the items with loadings in between .50 to .70 can be maintained. This study investigates that the item loadings all exceeded the threshold value and statistically significant ( $p < 0.05$ ) (see table 4). Composite reliability (CR) for all constructs ranges between 0.767 and 0.955 which are above 0.50 that indicates that all the constructs have a good level of composite reliability (CR) as recommended by (Hair et al., 2012). The average variance extracted (AVE) value for all the constructs are in the range between .632 to .827 which are above the threshold value .50 which is suggested by (Hair et al., 2010).

Table 5: Constructs evaluation

Constructs	Measurement Items	Factor Loading	CR	AVE	P.Value
Talent Development	TD5	0.852	0.947	0.780	.000
	TD4	0.884			.000
	TD3	0.896			.000
	TD2	0.898			.000
	TD1	0.852			.000
Training &Development	T_D5	0.807	0.932	0.732	.000
	T_D4	0.902			.000
	T_D3	0.886			.000
	T_D2	0.855			.000
	T_D1	0.827			.000
Organizational Deve- lopment	OD5	0.900	0.948	0.785	.000
	OD4	0.900			.000
	OD3	0.904			.000
	OD2	0.875			.000
	OD1	0.850			.000
Career Development	CD5	0.854	0.955	0.808	.000
	CD4	0.952			.000
	CD3	0.904			.000
	CD2	0.922			.000
	CD1	0.861			.000
Sensing Capability	SC1	0.769	0.767	0.709	.000
	SC2	Deleted			.000
	SC3	0.769			.000
	SC4	0.915			.000
	SC5	0.876			.000
Learning Capability	LC1	0.875	0.899	0.827	.000
	LC2	0.871			.000
	LC3	0.919			.000
	LC4	0.961			.000
	LC5	0.918			.000
Reconfiguration Ca- pability	RC1	0.818	0.837	0.762	.000
	RC2	0.783			.000
	RC3	0.938			.000
	RC4	0.951			.000
	RC5	0.863			.000

Table 5: Constructs evaluation (continued)

Goal Approach	GA4	0.901	0.932	0.789	.000
	GA3	0.837			.000
	GA2	0.904			.000
	GA1	0.910			.000
System Resource Approach	SRA4	0.883	0.872	0.632	.000
	SRA3	0.733			.000
	SRA2	0.722			.000
	SRA1	0.797			.000
Competing Values Approach	CVA4	0.904	0.936	0.772	.000
	CVA3	0.940			.000
	CVA2	0.824			.000
	CVA1	0.841			.000

CR =Composite Reliability and Average, AVE=Variance Extracted

Discriminant validity was assessed by using two methods: First,(Fornell & Larcker, 1981) method. He suggested that to support for discriminant validity if the square root of the AVE for a latent construct is greater than the correlation values among all the latent variables. Table (5) shows that the square root of the AVE values of all the constructs is greater than the inter-construct correlations which sup-

ports the discriminant validity of the constructs. Second, (Hair et al., 2010) he suggests if AVE for a latent construct is larger than the maximum shared variance with other latent constructs that indicates discriminant validity can be maintained Thus, the measurement model indicates a good construct validity and desirable psychometric properties.

Table 6: Discriminant validity of the constructs

	AVE	MSV	TD	T_D	OD	CD	SC	LC	RC	GA	SRA	CVA
TD	0.780	0.682	<b>0.883</b>									
T_D	0.732	0.706	0.823	<b>0.855</b>								
OD	0.785	0.749	0.816	0.817	<b>0.886</b>							
CD	0.808	0.664	0.785	0.827	0.866	<b>0.898</b>						
SC	0.709	0.697	0.532	0.721	0.781	0.421	<b>0.842</b>					
LC	0.827	0.807	0.621	0.608	0.801	0.305	0.723	<b>0.909</b>				
RC	0.762	0.714	0.712	0.512	0.601	0.541	0.801	0.621	<b>0.872</b>			
GA	0.789	0.701	0.798	0.836	0.821	0.850	0.721	0.653	0.812	<b>0.888</b>		
SRA	0.632	0.501	0.788	0.648	0.771	0.708	0.765	0.541	0.700	0.695	<b>0.795</b>	
CVA	0.772	0.727	0.068	0.744	0.754	0.737	0.321	0.652	0.756	0.691	0.609	<b>0.886</b>

Notes: Bold values in diagonal represent the squared root estimate of AVE. AVE= Average Variance Extracted, MSV= Maximum shared variance

4.5.1 The direct effects

4.4 Common method bias Checks

Due to this research is employed a cross-sectional with a self-report questionnaire, common method variance (CMV) may affect systematic measurement accuracy (Podsakoff and Organ, 1986). Harman’s single-factor test was used to address this issue by using exploratory factor analysis (EFA). The results show that the total variance for a single factor is less than 50% which means that common method bias does not confound the interpretations of the results.

Structured equation modeling (SEM) was used to test the hypothesized model. The results of the proposed structural model show the good fit (CMIN/df=1.418, GFI=0.925, TLI= 0.986, CFI=0.990, RMSEA=0.064). In order to verify the following hypotheses, H1, H2, H3 direct effects were assessed. The results, presented in (Figure 2 and Table 5) indicate that the three hypotheses are supported. In particular, HRD practices have a significant impact on organizational effectiveness ( $\beta=0.390$ ,  $p<0.001$ ) supporting H1. Similarly, the results revealed that HRD practices have a significant impact on the dynamic capabilities ( $\beta=0.982$ ,  $p<0.001$ ), therefore the hypothesis H2 is supported. Also, the results confirmed that dynamic capabilities significantly influence organizational effectiveness ( $\beta=0.568$ ,  $p<0.001$ ) which is supporting the hypothesis H3.

4.5 The structural model: test of hypotheses

Table 7: Results of direct effects

NO.	Hypotheses path	Beta Coefficient	P. Value	Result
H1	HRD→OE	0.390	0.001	Supported
H2	HRD → DC	0.982	0.001	Supported
H3	DC→ OE	0.568	0.001	Supported

Table 8: Results of mediating effect

NO.	Hypotheses path	Beta Coefficient	P. Value	95%LL	95%UL	Result
H4	HRD→ DC→ OE	0.558	0.001	0.073	0.533	Supported

Hypothesis is supported, when there is no zero between lower and upper limits, LL: Lower limit, UL: Upper

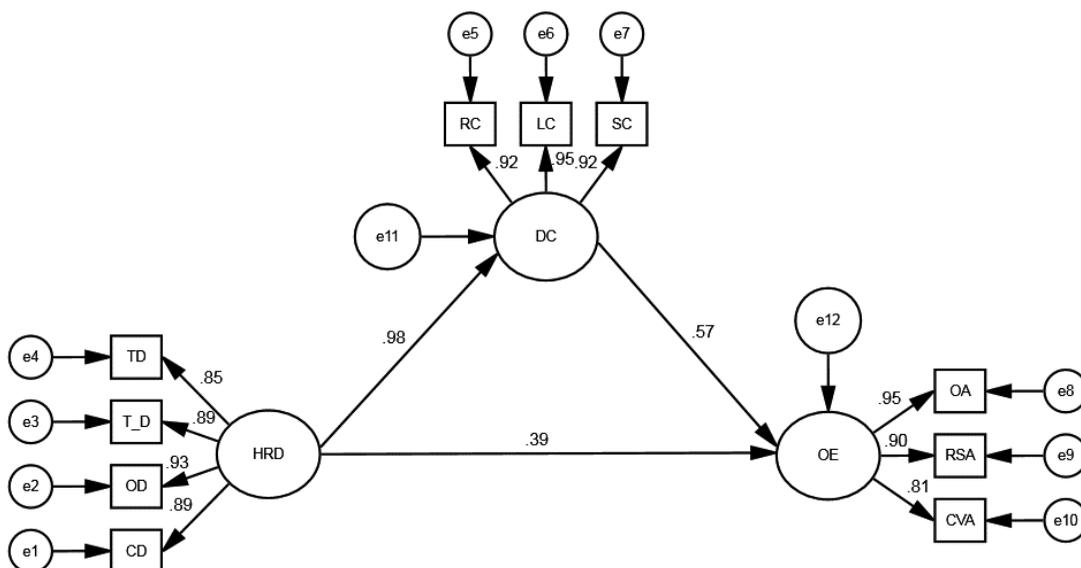


Figure 2: The SEM model analysis

#### 4.5.2 The mediating effects

In order to test hypothesis H4 indirect effect was assessed. The results showed in table 6 indicate that dynamic capabilities are significantly mediate the relationship between HRD practices and organizational effectiveness ( $\beta=0.558$ ,  $p<0.001$ ). Also, the bootstrapping was used in order to calculate the 95% confidence interval of the indirect. The results show there is no zero between lower and upper limits which is provided evidence that hypothesis H4 is supported.

### 5 Discussion and Conclusions

Due to limited studies in the literature, there is still confusion about how the impact of HRD practices on organizational effectiveness through the mechanisms of dynamic capabilities. The aim of this study is to investigate the mediating role of dynamic capabilities in the relationship between HRD practices and organizational effectiveness in the selected Iraqi public universities context. This study proposed a causal model that explains the relationship between HRD practices and organizational effectiveness through the role played by dynamic capabilities. The present study found out four key findings. First, HRD practices significantly influence organizational effectiveness which is in line with the suggestions of (Mohammed 2006; Alagaraja et al., 2015; and Shoo 2016). Second, HRD practices have a significant impact on dynamic capabilities which is in line with the opinions of (Garavan et al., 2016; Yan and Gao, 2016 and Teece, 2007). Third, dynamic capabilities significantly influence organizational effectiveness which is consistent with (Zhou, 2017; Fainshmidt et al., 2016 and Teece et al, 1997). Fourth, dynamic capabilities significantly mediate the relationship between HRD practices and organizational effectiveness which is in line with the opinions (Zollo and Winter 2002; Aminu and Mahmood, 2015). In conclusion, this study argues that the relationship between HRD practices and organizational effectiveness is not direct in changing business environments but through the mediating role of dynamic capabilities. Consequently, in such shifts and turbulences in business environments, organizations need to develop not only a human resource but also dynamic capabilities for sensing environmental conditions, learning response patterns and reconfiguring operating routines, in turn, organizations will be able to achieve superior organizational effectiveness.

#### 5.1 Theoretical contributions of the study

Regarding the theoretical contribution, this study provides a research model for empirical literature in the field of human resource development, dynamic capabilities, and

organizational effectiveness. Specifically, this study developed a model to investigate the direct relationship between HRD and organizational effectiveness and dynamic capabilities and the relationship between dynamic capabilities and organizational effectiveness as well as to examine the mediating role of dynamic capabilities on the relationship between HRD and organizational effectiveness. The results from a structural equation modeling approach have confirmed all the hypothesized relations. The results show that HRD practices significantly impact on organizational effectiveness and dynamic capabilities. The study shows that dynamic capabilities have a positive impact on organizational effectiveness. Also, the study empirically supports the mediating effect of dynamic capabilities on the relationship between HRD practices and organizational effectiveness. Despite of, that HRD, dynamic capabilities and organizational effectiveness have attracted considerable attention in the literature but, only very limited studies have highlighted the mediating role of HRD capabilities in the relationships between HRD and organizational effectiveness. Therefore, the empirical findings of this study have potential significant to fill the gap in the literature.

#### 5.2 Managerial implications of the study

Besides the theoretical implications, this study provides practical implications for universities management, the present study provides significant insight and demonstrates a good understanding of HRD practices, dynamic capabilities and organizational effectiveness in the selected Iraqi public universities context. The findings of this study have the potential to help decision-makers to design their HRD practices to contribute to enhance organizational effectiveness. The study brings universities management closer to understand the role of dynamic capabilities to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments, in turn, support make decisions within the organization which has the potential to enhance organizational effectiveness and performance. In such an environment, universities management should develop not only HRD practices but, also adopt dynamic capabilities mechanisms to improve organizational effectiveness.

#### 5.3 Limitations and future research

Despite of the theoretical and managerial contributions, this study has some limitations that need to be addressed in future research. First, this study focuses on the top ten Iraqi public universities context, which may not be exclusively generalizable to other sectors. Therefore; future research may investigate this phenomenon in other businesses and economic context. Second, the sample of the study somewhat is small because of the unsafe situation in Iraq the

authors couldn't get an appropriate sample. However, future research may conduct in big enough and appropriate sample. Third, this study adopts a cross-sectional research method for data collection, which does not allow the researcher to examine the causality of the relationships between the variables in greater depth. Thus, future research should aim to use longitudinal data which could explain the highlighted relationships more insights. Fourth, this study focuses on four dimensions of HRD, three dimensions of dynamic capabilities and three dimensions of organizational effectiveness, therefore, future research may include other potential dimensions. The findings of this study are limited to the selected Iraqi public universities context and cannot be generalized to other countries and other businesses context.

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## Vloga dinamičnih sposobnosti pri odnosu med razvojem človeških virov in organizacijsko učinkovitostjo

**Ozadje in namen:** Novejša literatura je pokazala, da je razvoj človeških virov (HRD) pomembno povezan z organizacijsko učinkovitostjo (OE). V hitro spreminjajočih se okoljih bi si morale organizacije prizadevati za reševanje sprememb v okolju in se spoprijeti s tržnimi razmerami z razvojem dinamičnih zmogljivosti, v zameno pa povečati organizacijsko učinkovitost. Glavni namen te študije je preučiti posredovalno vlogo dinamičnih zmogljivosti pri povezavi med razvojem človeških virov in uspešnostjo organizacije na iraških javnih univerzah.

**Zasnova / metodologija / pristop:** Podatki so bili zbrani s spletno anketo med 215 zaposlenimi na izbranih javnih univerzah v Iraku. Za testiranje predlaganega raziskovalnega modela je bilo uporabljeno modeliranje strukturnih enačb (Structural Equation Modelling - SEM).

**Rezultati:** analiza podatkov je podprla vsa predpostavljena razmerja študije. Pokazalo se je, da HRD prakse pomembno vplivajo na organizacijsko učinkovitost in dinamične sposobnosti. Nadalje dinamične zmogljivosti pomembno vplivajo na učinkovitost organizacije. Študija tudi empirično podpira posredovalni učinek dinamičnih sposobnosti na odnos med praksami HRD in organizacijsko učinkovitostjo.

**Zaključek:** Literatura še ni v celoti pojasnila, kako HRD prakse vplivajo na učinkovitost organizacije s pomočjo mehanizmov dinamičnih sposobnosti. Naša raziskava ugotavlja posredniško vlogo dinamičnih sposobnosti na povezavi med HRD in organizacijsko učinkovitostjo. Na podlagi obstoječe literature in empiričnih rezultatov študija ponuja teoretične in praktične posledice, ki so podrobneje predstavljene v članku.

**Ključne besede:** razvoj človeških virov, dinamične sposobnosti, organizacijska učinkovitost

## Appendix: List of Measurement Items

### HRD practices:

#### 1.Talent Development

- TD1. Our university\institute attracts and recruit the right talent
- TD2. Our university\institute identifies existing talent
- TD3. Our university\institute nurtures and develop talent
- TD4. Our university\institute ensures the talent engagement
- TD5. Our university\institute ensures the talent retention

#### 2.Training and Development

- T&D1. Our university\institute has effective training and development programs
- T&D2. The activities of training development programs provided enable to improve skills, knowledge, attitude change, new capability of the employee.
- T&D3. The activities of training programs provided help to increase job satisfaction and work efficiency.
- T&D4. Our university\institute uses a modern training and development methods and tools.
- T&D5. Evaluate the trainees' overall satisfaction with the training program.

#### 3.Organizational Development

- GD1. Our university\institute makes efforts to development of human resources according to organizational change
- GD2. Our university\institute encourages the change management
- GD3. Our university\institute ensures the organizational restructuring
- GD4. Our university\institute encourages the teamwork
- GD5. Our university\institute encourages the problem-solving culture

#### 4.Career Development

- CD1. The organizational structure of the university\institute facilities the career planning and development
- CD2. Our university\institute offers career counseling.
- CD3. Our university\institute gives training to help develop my career
- CD4. Our university\institute has a fair promotion
- CD5. Our university\institute ensures the growth of remuneration.

### Organizational effectiveness:

#### 1.Competing Values Approach

- CVA1. Our university\institute makes efforts to improve the productivity
- CVA2. Our university\institute adapts to the changing environment
- CVA3. Our university\institute makes efforts to the optimization of resources
- CVA4. Our university\institute makes efforts to the stability

## 2.Goal Approach

- GA1. Our university\institute ensures goal achievement
- GA2. Our university\institute has an effective strategic planning
- GA3. Our university\institute encourages the innovation
- GA4. Our university\institute makes efforts improve the quality

## 3.System Resource Approach

- SRA1. Our university\institute has the ability to acquire resource
- SRA2. Our university\institute has good physical infrastructures and equipment
- SRA3. Our university\institute ensure the accreditation
- SRA4. Our university\institute encourages the organizational health

## **Dynamic capabilities**

### 1.Sensing capability

- SC1. Our university\institute conducts environmental assessment to identify new job opportunities
- SC2. Our university\institute ensures the performance assessment
- SC3. our university/institute dedicates much time to applying ideas for new educational programs and improving existing educational programs
- SC4. Our university\institute encourages the collaboration readiness
- SC5. Our university\institute encourages the changing and renewal

### 2.Learning Capabilities

- LC1.Our university\institute has effective routines to identify, value, and import new information and knowledge.
- LC2.Our university\institute has appropriate routines to assimilate new information and knowledge.
- LC3.Our university\institute has effective in transforming existing information into new knowledge.
- LC4.Our university\institute has effective in utilizing knowledge in new services.
- LC5.Our university\institute has effective in developing new knowledge that has the potential to influence service

### 3.Reconfiguration Capabilities

- RC1. Our university\institute has a clear human resource re-allocation procedure
- RC2. Our university\institute makes efforts to organizational response to environmental changes.
- RC3. Our university\institute fasts response to competitor's actions.
- RC4. Our university\institute has an effective communication with cooperative organization.
- RC5. Our university\institute fasts response to changes in the needs of its clients.