The Role HR Analytics, Performance Pay and HR Involvement in influencing Job Satisfaction and Firm Performance

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Abstract
The present study is pioneer in examining the combined effects of HR Involvement, Performance Pay practices and HR Analytics in determining job satisfaction (JOS). Given the vitality of JOS in raising firm's performance growth, the current study further investigates the influence of HR analytics, job satisfaction and HR involvement in driving organizational performance. Given the limited empirical work in this regard, the current study would add greater value to the existing literature in identifying the critical association of HR, IT and Performance nexus. The results of partial least square structural equation modelling confirm that HR analytics, performance pay practices and HR involvement have positively and significantly impact on job satisfaction. Moreover, the results of partial least square equation modelling displaying likewise demonstrate that HR analytics, HR involvement and Job satisfaction have a positive and significant impact on firm performance in multinational firms of Malaysia. Technical speaking, the results of partial least square modelling affirm that the three components, i.e., HR analytics, performance pay, and HR involvement are significantly and positively impact on firm performance in different multinational firms in Malaysia. Finally, the results suggested that HR analytics, HR involvement and job satisfaction are positive and significant contributors to enhance the performance of multinational firms in Malaysia.

Keywords: *HR Analytics, HR Involvement, Performance pay practices, Malaysia.*

INTRODUCTION

Since the beginning of twenty first century, advancements in information technology(IT) have made human life easier, resourceful and competitive. In the field of commerce, IT developments has played eminent role in bringing operational efficiency with reduced human errors and cost of production. The inclusion of technology not only enhance firm's competence in terms of improved expertise and market share but also aids in augmentingoverall business performance (Thong, Yap, & Raman, 1996).

Growing trends of IT utilization is generally accompanied with increase in returns to IT investments (Devaraj, & Kohli 2003; Melville, Kraemer, &Gurbaxani,2004)along with the usefulness of incentive compensation plans across firms (Ichniowski, &Shaw, 2003). The role of administrative expertise is crucial in driving the use of information systems towards firm's competence. In this regard, Aral, Brynjolfsson, & Wu (2012) established that utilization of people analytic or HR-Analytics, along withperformance pay systems are vital in determining business performance. The usefulness of information systemsdepends on the capacity of management to administer and control workers performance correctly to suitably reward employees who outshine their abilities (Sharma, & Sharma, 2017).

In similar context, the higher involvement of management in supporting HR functions can helps to increase employee's satisfaction towards job and support organizational goal of performance growth (Kooij, Jansen, Dikkers, & De-Lange, 2010). Firm that have increased organizational commitment for HR performance tends to give major attention to HR functions by adopting efficient information systems. With higher HR involvement, the useful applications of HR-analytics, could be efficiently utilized by managers in capturing internal and external trends through data analytics and thus enhanced organizational performance by improving firm's response, speed & efficacy (Roberts, & Grover, 2012).

HR-Analytics is not merely a function of human resource department but require multi-level departmental integrations. It serves the greater organizational purpose by assimilating HR functional data with internal and external informational analytics by collecting, analyzing and reporting data to support manager's people-related decision making. The collaborative efforts of the firm's management have always proved to be vital for the execution of corporate aims. The deliberation of IT and HR in reaching organizational efficiency in organizational and market trends along with proper performance pay practices can motivate employees to work progressively for attaining positive recognition and thus, improve job satisfaction. In the existing literature, many studies analyzed the importance of HR-analytics in supporting HR practices (Falletta, 2014; Jones, 2014; Lawler III, Levenson, & Boudreau, 2004). However, very few studies have empirically tested the association of HR-Analytics (HRA) with organizational performance (Marler, & Boudreau, 2017). With the exception of Aral, et al., (2012) that analyzed the empirical examinations of HRA on performance; the studies in the prevailingliterature generally focus on the mechanics (Bassi, 2011; Lawler, et al. 2004) and variations in HRA practices (Harris, Craig, & Light, 2011). In addition, the majority of the studies adopted non-empirical methods in investigating the efficiency, effectiveness or impact of HRA (Marler, & Boudreau, 2017).

Filling the gap of the literature, the current study is motivated to analyze the empirical relationship of HRA with performance of Malaysian Multinational Corporations (MNCs). Moreover, the present study is pioneer in examining the combined effects of HR Involvement (HRI), Performance Pay practices (PRP) and HRA in determining job satisfaction (JOS). Given the vitality of JOS in raising firm's performance growth, the current study further investigates the influence of HRA, JOS and HRI in driving organizational performance. Given the limited empirical work in this regard, the current study would add greater value to the existing literature in identifying the critical association of HR, IT and Performance nexus.

The above introduction is followed by Section-2 that analyses the current literature and theoreticlink among the utilized variables followed by projected hypotheses. Moreover, Section-3 of the study explains the methodological information regarding sampling method and constructs adaption.Later in Section-4, the authors have reported the empirical outcomes and their interpretations. In the last, Section-5 offers study conclusion and conceivable recommendations.

LITERATURE REVIEW AND HYPOTHESES

Theoretical basis of Resource Based View highlighted the importance of organizational resources in driving firm's competitive advantages that can enhance organizational performance. However, the theory also perceived that resources are unable to provide augment firm's competence by themselves (El-Kassar, & Singh, 2018).In this regard, Sirmon et al. (2007) stressed that organizations required managerial expertise to enhance organization and employees' capabilities and resource portfolio with improved talent management and skills enhancements strategies. Different examinations researched the significance of administrative choices in resource procurement and organization (Grewal, &Slotegraaf, 2007), thus managers are required to efficiently administer firms resource building process to gain higher productivity and improved performance (Chadwick et al., 2015).

Given the importance of information systems, the organizations at present are striving to blend resource acquisition and organizational practices with improved technologies and analytical assessment of firm's processes. Recently, Ghasemaghaei, Hassanein, &Turel, (2017) analyzed the dynamic abilities inside firms to recognize and successfully react to external market conditions with speed i.e. Agility. For this, the authors analyzed the contribution of data analytics in driving firm's agility. The findings of the study revealed that efficient utilization of data analytics significantly improves firm's operational and market capitalization agilities.

Very few examinations have analyzed the combined effects of business resources, firm's capacities and information systems on firm performance (Brandon-Jones et al., 2014; Ravichandran and Lertwongsatien, 2005; Rungtusanatham et al., 2003). In this regard, Wamba, et al., (2017) examined the relationship between Big data analytics, firm's dynamics capabilities and organizational performance. The findings of the study reported that big data's business analytical capabilities are significant to bring positive impact on firm's performance. Linking data mining with Human Resource, Ranjan, Goyal, &Ahson, (2008) analyzed the impact of data mining inassisting HR functions. The study concluded that Organization's ability to bring efficiency in data mining strengthen managerial decision making, support HR systems usefulness and thus, augments firm's performance and competencies.

Connecting HR systems with satisfaction, Fabi, Lacoursière, & Raymond, (2015) examined the role of High performance work systems (HWS) in driving job satisfaction and higher commitment. Using the data of 730 employees, the results of the study concluded that HWS in terms of skills developing, motivating and opportunities building HR practices led to bring positive impact on job satisfaction. The results however, failed to find the significance of HWS on employees' commitment and turnover intention. Focusing exclusively on Human Resource Analytics, Aral, et al., (2012), investigated the nexus of human capital management (HCM) system, HR-Analytics and performance pay in driving performance. Collecting the sample from 189 organizations, the empirical results of the study revealed that usefulness of HCM system is higher in organizations that alternatively implemented performance pay and HR-Analytics methods that subsequently impact performance.

Emphasizing on performance pay (PRP) practices, many investigations reported positive net impact of PPR practices on job satisfaction while discussing ambiguities in findings (Cornelissen, Heywood, &Jirjahn, 2011; McCausland, Pouliakas, &Theodossiou, 2005; Money, & Graham, 1999).In particular, Artz, (2008) analyzed the critical role of PRP in connection to job satisfaction (JOS). Using the data of 2466 employees in UK, the results of the study concluded that PRP is significant to influence employees' productivity. The results reported that PPR association with JOS is overall significant but varies in disaggregation. The results concluded that PPR brought positive impact on JOS with augmentation in earning but declined JOS with rise in risk and effort. Similar results were reported in the study of Green, & Heywood, (2008); establishing the significance of PRP in driving JOS. The study also established the positive net impact of PRP on JOS, however, negative with satisfaction related to work.

The association of job satisfaction with organizational performance is well established in the literature (Platis, Reklitis, &Zimeras, 2015; Koys, 2001; Harter, Schmidt, & Keyes, 2003). Firms that have satisfied employees tend to have greater employees' loyalty and higher organizational commitment that further improves performance (Tsai, Cheng, & Chang, 2010).Linking job satisfaction with business performance, Bakotić (2016) analyzed the empirical association among the variables in Croatia. the results of the study established that job satisfaction is a critical indicator of firm's performance in terms of resource, Revenue per employee, labor costs per employee and earning before taxes per employee. Similarly, Chan, Gee, &, Steiner (2000) also reported the significance of workforce happiness in enhancing business monetary performance. For public sector organizations, Chandrasekar, (2011) empirically tested the importance of workplace environment

including employee related satisfaction with firm's performance. The study stated the positive impact of workplace environment on satisfaction and performance.

Linking HR-practices with business performance, Gould-Williams, (2003) assessed the relationship between HR functions, job satisfaction and organizational performance. The results of the examination revealed the significance of HR-practices in strengthening employee's attitude such as job satisfaction and commitment that further improves firm performance. Identifying the mediating role of job satisfaction in influencing the relationship of HR-practices and operational performance, Mohammad, Miah, Rahman, &Rahaman, (2017) reported the significant association of HR-practices in enhancing job satisfaction. The study also found that job satisfaction significantly mediated the effects of HR-practices on improved operational performance.

Assessing the importance of HR-involvement in driving job and workplace features along with satisfaction and firm performance, Diamantidis, &Chatzoglou, found high HR-involvement to be positively linked with defining job and employees' characteristics which further improves satisfaction and organizational performance. Similarly, Guthrie, (2001) alsoestablished the positive relationship of high HR involvement with firm's productivity. In another study, Mustafa, Caspersz, Ramos, &Siew, (2018) studied the impact of high involvement of HR in driving satisfaction. Focusing on Small and Medium Enterprises (SMEs) of Malaysia, the results of the investigation reported the significant role of High HR-involvement in enhancing non-family employees' satisfaction.

Moreover, for the organizations in France, Guerrero, & Barraud-Didier, (2004) examined the relationship between HR and performance by empirically analyzing the data from 180 HR managers of French organizations. The results of the analysis found the significant association of HR involvement in influencing financial and social performance that enhance firm's overall performance. Therefore, in the light of the prevailing literature, the current study formulates the following hypotheses.

Hypothesis-1: HR Analytics (HRA) is significant to influence Job Satisfaction (JOS).
Hypothesis-2: Performance Pay (PRP) is significant to influence Job Satisfaction (JOS).
Hypothesis-3: HR-Involvement(HRI) is significant to influence Job Satisfaction (JOS).
Hypothesis-4: HR Analytics (HRA) is significant to influence Firm Performance (FPR).
Hypothesis-5: HR Involvement (HRI) is significant to influence Firm Performance (FPR).
Hypothesis-6: Job Satisfaction (JOS) is significant to influence Firm Performance (FPR).
Following figure-1 represents the hypothesized model of the current investigation
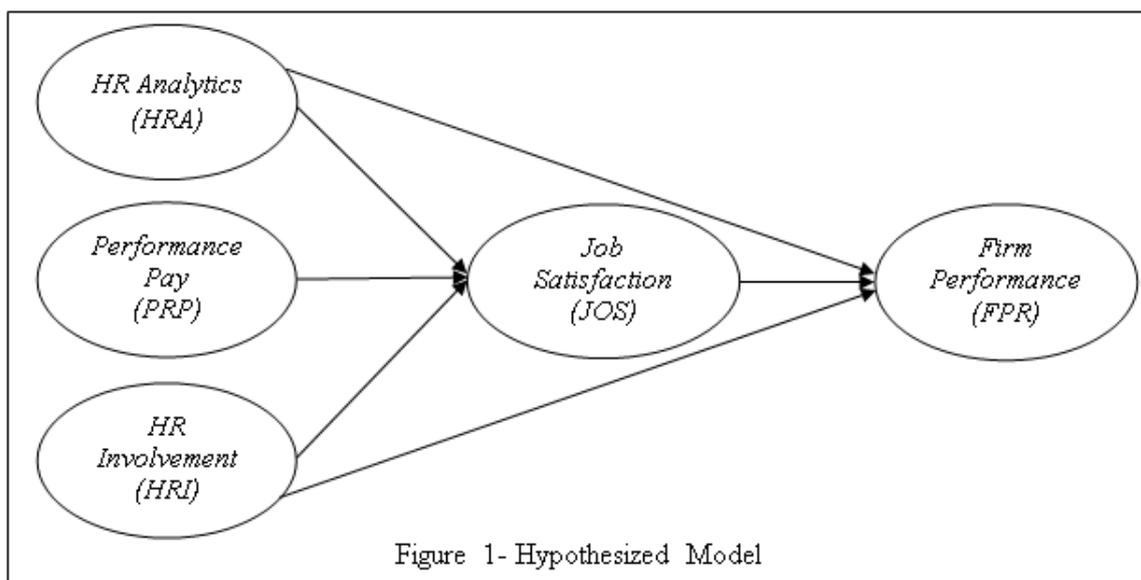

Figure 1- Hypothesized Model

METHODOLOGY

The technique for data collection in the present research is finished by collecting information from the multinational firms of Malaysia. Besides, we opt27different multinational firms from a several sectors of Malaysia. For the rapid and smooth information collection methodology, we make a comprehension of our instrument into the English language and send to the selected multinational firms of Malaysia. Therefore, a sum of 331survey instrument was disseminateusing both printed version and soft version of the survey instrument. The method for data gathering obtained the time period of basically a half year, one week and two days and got 317 reactions with the response rate of 95.78%.

The present examination looks at the role of HR analytics, performance pay and HR involvement on job satisfaction and firm performance in different multinational firms of Malaysia. In doing as such, we investigate the research framework dependent on past studies, and the model is displayed in Figure-1. The main highlights of the chose factor are cleared up by utilizing the Likert scale system from 1 (Strongly Disagree) to 5 (Strongly Agree). Additionally, the present examination uses five unique variables. The components used into this examination are the HR Analytics (HRA), Performance Pay (PRP), HR Involvement (HRI), Job Satisfaction (JOS) and Firm Performance (FPR). The items for the current studyareadopted from various past studies; the items of HRA and PPR are adapted from the examination of Aral, et al., (2012). Furthermore, the present examination utilizes four items of (HRI) which from the investigations of Wright et al. (1998) and Siddique (2004). In addition, the items for JOS are utilized from the study of Raziq, and Maulabakhsh, (2015). Lastly, the present investigation utilizes four items (FPR) from the prior investigation of Siddique (2004). So as to explore the impact of HR analytics, Performance pay, HR involvement and Job satisfaction on firm performance in various multinational firms of Malaysia, the present examination applies partial least square structural equation modelling to investigate the conceivable relationship among these factors.

DATA ANALYSIS AND DISCUSSION

In the presentresearch, the information estimation is completed by using two statistical software which is the SmartPLS Version 3.2.7 (Ringle et al. 2015) and Statistical Package for Social Sciences (Version-21). The final data utilized for the present investigation is 303 after removing of univariate outliers and multivariate outliers. The steps for detecting of univariate and multivariate outliers are Z-test score and Mahalanobis Distance (D2) by utilizing SPSS (V-23) and remaining of the data analysis is completed by using SmartPLS. Indicated Table-1 is the structure and composition of the final valid responses of the collected data used in this examination. Also, Table-2 clarify the mean and Pearson's Correlation of the factors used in the present examination. Additionally, to handle the issue of multicollinearity, the study of Hair et al. (2010) initiate that by a wide edge in Pearson's Correlation examination ought to underneath 0.90. Subsequently, affirm the absence of multicollinearity among the variables (Hair et al., 2013; Frooghi et al. 2015; Sharif and Raza, 2017; Afshan et al. 2018).

Table-1: Descriptive Statistics			
Gender			
		Frequency	Percent
Valid	Female	88	29%
	Male	215	71%
	Total	303	100%
Age			
		Frequency	Percent

	20-30 years	65	21%
	31-40 years	179	59%
Valid	41-50 years	38	13%
	51 and above	21	7%
	Total	303	100%

Working Experience			
		Frequency	Percent
	1-5 years	38	13%
	6-10 years	198	65%
Valid	11-15 years	45	15%
	More than 15 years	22	7%
	Total	303	100%

Education			
		Frequency	Percent
	Undergraduate	66	22%
	Graduate	178	59%
Valid	Post Graduate	20	7%
	Others	39	13%
	Total	303	100%
Source: Authors Estimation			

Table-2: Means and Pearson Correlations						
Variables	MEAN	HRA	PRP	HRI	JOS	FPR
HRA	4.535	-				
PRP	4.039	0.437**	-			
HRI	4.223	0.301**	0.332**	-		
JOS	3.975	0.347**	0.364**	0.324**	-	
FPR	3.894	0.287**	0.391**	0.306**	0.408**	-
N=303						
** Correlation is significant at the 0.01 level (2-tailed).						

Moreover, at first we clarify the content validity, it is established that if the items using in the data examination load with explicit value in their final factor in comparison with various items showed up in the model, while inner consistency is affirmed if the estimation of Cronbach's alpha and composite reliability values found more prominent than 0.7 (Afshan and Sharif, 2016; Hair et al. 2013; Waseem et al. 2013). Factor loadings and composite reliability values appeared in Table-3 which show that a gigantic estimation of the items factor loading is more noticeable than 0.7. Also, these loadings show up in their individual parts which guaranteeing the inner consistency of the chose construct.

Table-3: Measurement Model Results					
Variable	Items	Factor Loadings	Cronbach's Alpha	Composite Reliability	AVE
HR Analytics	HRA1	0.940	0.945	0.882	0.616
	HRA2	0.908			
	HRA3	0.894			
	HRA4	0.931			
Performance Pay	PRP1	0.918	0.931	0.895	0.638
	PRP2	0.881			
	PRP3	0.893			

	PRP4	0.886			
HR Involvement	HRI1	0.888	0.895	0.853	0.589
	HRI2	0.865			
	HRI3	0.923			
	HRI4	0.835			
Job Satisfaction	JOS1	0.900	0.953	0.811	0.604
	JOS2	0.856			
	JOS3	0.805			
	JOS4	0.856			
Firm Performance	FPR1	0.876	0.937	0.853	0.592
	FPR2	0.866			
	FPR3	0.836			
	FPR4	0.815			
Source: Authors Estimation					

Similarly, convergent legitimacy discloses that to what degree an item as for a specific factor developed and loaded to a latent variable where they expected to be loaded (Mehmood and Najmi, 2017). In this investigation, convergent legitimacy is presented by using an Average Variance Extracted (AVE) for each factor (Fornell and Larcker, 1981). They gave the benchmark of more essential than and showed up individually in association with 0.5 for ensuring up to the convergent legitimacy. The consequences of AVE in Table-3 is affirming the fundamental parameters.

Table-4: Discriminant validity Fornell-Larcker criterion

	HRA	PRP	HRI	JOS	FPR
HRA	*0.785*				
PRP	0.335	*0.799*			
HRI	0.392	0.285	*0.767*		
JOS	0.411	0.372	0.327	*0.777*	
FPR	0.365	0.407	0.275	0.426	*0.769*
Source: Authors Estimation					

Table-5: Results of Loadings and Cross Loadings

Variables	HRA	PRP	HRI	JOS	FPR
HR Analytics	**0.940**	0.324	0.452	0.220	0.459
	0.908	0.530	0.345	0.322	0.389
	0.894	0.135	0.253	0.291	0.436
	0.931	0.449	0.435	0.348	0.474
Performance Pay	0.528	**0.918**	0.591	0.271	0.358
	0.321	**0.881**	0.359	0.553	0.304
	0.234	**0.893**	0.262	0.485	0.340
	0.266	**0.886**	0.297	0.361	0.439
HR Involvement	0.215	0.333	**0.888**	0.234	0.324
	0.138	0.213	**0.865**	0.256	0.416
	0.138	0.213	**0.923**	0.236	0.366
	0.328	0.509	**0.835**	0.163	0.318
Job Satisfaction	0.275	0.358	0.223	**0.900**	0.376
	0.349	0.454	0.450	**0.856**	0.531
	0.426	0.555	0.419	**0.805**	0.375
	0.318	0.414	0.347	**0.856**	0.324

Firm Performance	0.210	0.277	0.235	0.322	**0.876**
	0.171	0.226	0.342	0.400	**0.866**
	0.251	0.332	0.513	0.371	**0.836**
	0.395	0.521	0.243	0.423	**0.815**
Source: Authors Estimation					

In further step, discriminant legitimacy is revealed as how much an item of a factor is discriminant and novel from different factor (Frooghi et al., 2015). As indicated by Fornell and Larcker (1981), the discriminant legitimacy is said to be expressed if the AVE square root is greater than the pair-wise relationship of the latent variable. The results appeared in table-4, italic and bold qualities are the square root of AVE which is more than the off-diagonal which are the pair-wise connection of each variable. Furthermore, Table-5 shows the factor loadings of a various and individual factor, along these lines, articulating the cut-off value. So additionally, the discriminant legitimacy is likewise affirmed if the Hetro Trait and Mono Trait parameter are lower than 0.85 as recommended by Henseler et al. (2015). The outcomes in Table-6 uncovered that all components have Discriminant legitimacy.

Table-6: Results of HTMT Ratio of Correlations					
Variable	**HRA**	**PRP**	**HRI**	**JOS**	**FPR**
HRA					
PRP	0.583				
HRI	0.482	0.603			
JOS	0.524	0.562	0.612		
FPR	0.556	0.531	0.456	0.593	
Source: Authors Estimation					

In the last stage, we connected a partial least square structural equation modelling with exploring the model and hypothesis testing which showing path coefficients, t-stats, and probability values. As showed up by Chin (1998) proposition, a bootstrapping procedure utilizing 1000 sub-test was related with insisting the quantifiable fundamental assessments of the significant number of factors. Table-7 uncovers beta coefficients, t-stats, and their likelihood value with the comments about the hypothesis testing.

Table-7: Results of Path Coefficients				
Hypothesized Path	**Path Coefficient**	**t-statistics**	**P-Value**	**Remarks**
JOS ← HRA	0.274	4.256	0.000	Supported
JOS ← PRP	0.216	3.989	0.000	Supported
JOS ← HRI	0.302	5.451	0.000	Supported
FPR ← HRA	0.328	4.384	0.000	Supported
FPR ← HRI	0.374	14.366	0.000	Supported
FPR ← JOS	0.339	5.093	0.000	Supported
Note: Level of Significance (5% i.e. 0.050)				
Source: Authors' Estimation				

The outcomes of the partial least square structural equation modelling are shown in Table-7. In general, the outcomes suggested that all selected variable have a significant effect on firm performance in different multinational firms in Malaysia. In addition, the results of the PLS-SEM affirm that HR analytics (β= 0.274, p<0.000), performance pay (β= 0.216, p<0.000) and HR involvement (β= 0.302, p<0.000) have positively and significantly impact onjob satisfaction asserting **H1, H2,** and **H3**. The results of partial least square equation modelling displaying likewise demonstrate that HR analytics (β= 0.328, p<0.000), HR involvement (β= 0.374, p<0.000) and Job

satisfaction (β= 0.339, p<0.000) have a positive and significant impact on firm performance in multinational firms of Malaysia; therefore, confirming **H4, H5** and **H6**. Generally speaking, the results of partial least square modelling affirm that the three components, i.e., HR analytics, performance pay, and HR involvement are significantly and positively impact on firm performance in different multinational firms in Malaysia. Finally, the results suggested that HR analytics, HR involvement and job satisfaction are positive and significant contributors to enhance the performance of multinational firms in Malaysia.

CONCLUSION

During the last two decades, growing trends of IT utilization is generally accompanied with increase in returns to IT investments along with the usefulness of incentive compensation plans across firms. The role of administrative expertise is crucial in driving the use of information systems towards firm's competence. It is also established that utilization of people analytic or HR-Analytics, along with performance pay systems are vital in determining business performance. The usefulness of information systems depends on the capacity of management to administer and control workers performance correctly to suitably reward employees who outshine their abilities. In addition, the majority of the studies adopted non-empirical methods in investigating the efficiency, effectiveness or impact of HRA.

Filling the gap of the literature, the current study is motivated to analyze the empirical relationship of HRA with performance of Malaysian Multinational Corporations (MNCs). Moreover, the present study is pioneer in examining the combined effects of HR Involvement (HRI), Performance Pay practices (PRP) and HRA in determining job satisfaction (JOS). Given the vitality of JOS in raising firm's performance growth, the current study further investigates the influence of HRA, JOS and HRI in driving organizational performance. Given the limited empirical work in this regard, the current study would add greater value to the existing literature in identifying the critical association of HR, IT and Performance nexus. The results of partial least square structural equation modelling confirm that HR analytics, performance pay practices and HR involvement have positively and significantly impact on job satisfaction. Moreover, the results of partial least square equation modelling displaying likewise demonstrate that HR analytics, HR involvement and Job satisfaction have a positive and significant impact on firm performance in multinational firms of Malaysia.

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