

# Navigating global HR challenges and safeguarding long-term sustainability: Examining the influence of IHRM practices and IT-based challenges on MNCs' competitiveness during the COVID-19 pandemic

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## Abstract

This research delves into the dynamic shifts in human resource management strategies prompted by the COVID-19 pandemic. It investigates the mediating influence of information technology (IT) challenges on the connection between pandemic-induced international human resource management (IHRM) practices and the competitiveness of multinational corporations (MNCs) in Malaysia with focusing on sustainable development. Through the analysis of data collected from 172 respondents via self-administered questionnaires in Malaysian MNCs across various sectors including education, general services, ICT, property, construction, and healthcare, the study employs partial least squares structural equation modeling (PLS-SEM) to validate the proposed hypotheses. The findings highlight the substantial impact of compensation and staffing practices on technology transfer challenges within MNCs. Furthermore, the study reveals that the implementation of remote work, particularly during and post-lockdowns, is associated with elevated compensation and enhances overall company competitiveness. These outcomes offer theoretical and practical insights, furnishing human resource managers, especially in multinational corporations, with valuable guidance for maintaining competitiveness amidst the disruptions of a pandemic and promoting sustainability in HR practices. By highlighting the potential benefits of working from home in terms of both IHRM outcomes and competitiveness, the study contributes to ongoing discussions about the future of work and the role of technology-enabled practices in driving organizational success and sustainable development.

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**Keywords:** International human resource management (IHRM), Multinational corporations (MNCs), Competitiveness, IT Challenges, COVID-19

## 1. Introduction

In the contemporary discourse on global business practices, sustainability has emerged, and it has been more articulated, as a focal theme, in the wake of the COVID-19 pandemic. This concept challenges

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multinational corporations (MNCs) to reassess and realign their operational and strategic frameworks. As organizations navigate through the intense changes induced by the pandemic, the emphasis on sustainability offers a lens through which the adaptation and transformation of international human resource management (IHRM) practices can be critically examined. The integration of sustainability into the core operations of MNCs not only addresses immediate challenges but also sets the foundation for long-term organizational health and competitiveness. In this context, this study delves into the significant impact of the pandemic on MNCs' performance and competitiveness, highlighting the evolution of IHRM practices in response to unprecedented global challenges. The shift towards more IT-based support and remote working arrangements underscores a broader trend toward sustainable business models that prioritize adaptability, employee well-being, and reduced environmental impact. As this study explores the intricate dynamics between the pandemic's challenges and the strategic responses of HR departments within MNCs, it underscores the critical role of sustainability in shaping the future landscape of international business and HR practices.

Since December 2019, amidst the COVID-19 global pandemic, which has brought about economic crises and significant human costs, including mental and physical health concerns, the world has been on high alert. It is crucial to overlook how dramatically the world has changed due to the pandemic. The COVID-19 pandemic has influenced every sphere of business globally and caused unexpected changes, especially in the workplace. The recent COVID-19 pandemic has also introduced new norms, novel policies, and innovative strategies adopted by human resource management (HRM) [1]. Due to all the existing disruptions and huge worries caused by the COVID-19 pandemic, HR managers tried to describe more flexible policies, practices, and systems. Most companies and their HRM were going forward to handle the current situation and adjust employees' retention, recruitment, job security, and compensation (reward-based policy), besides their training and development program (T&D) [2]. Therefore, the importance of IHRM practices adjustment and effectively managing employees are pointed out as priorities in IHRM criteria that contribute to the MNCs' performance and remain competitive [3-7].

MNCs' performance can be challenging, especially in crisis events because of the various standards including profitability, competitiveness and sustainability, and willingness to deal with economic and environmental changes [8]. With the new COVID-19 outbreak, MNCs' performance has been affected in effectiveness and competitiveness [9]. The pandemic effects have been presented in all social and business circumstances as important issues and noticeable concerns to remain competitive and effective [10]. Findings explained the necessity of early decisions, which are made by the IHRM department before the full crisis comes [11]. Simply put, HR managers are required to act smartly besides working to tackle the situation. Therefore, HRM criteria must include the perfect practices in job design [12] and any interrelated activities [13]. However, to maintain the competitive advantages of MNCs in markets, IHRM is required to adjust and standardize its practices and policies to stay competitive with a strong capacity for dealing with any changes [14].

Thus, the recent pandemic can be blamed for the largest transformations in the workplace after the year 2020 [11]. For instance, Information technology (IT) in a broader range of workplace policies and job design has been critically implemented by international HR managers during the pandemic [15]. Simply put, the technological functions that manage employees' tasks, and attendances, secure online meeting platforms to shape the organization's needs [16]. Virtual HRM [17, 18], web-based HRM systems, and e-HRM [19-22] are all considerable technology-based roles appointed in the HRM departments and their practices that may have a great impact on MNCs' performance and competitiveness in the global business environment. This study found that understanding the impact of the COVID-19 pandemic on workplace policies and HRM systems is essential to investigate. The challenges in HRM have significantly increased during the pandemic, necessitating detailed exploration, particularly in developing countries and the ASEAN region, such as Malaysia where MNCs have experienced rapid growth across various industries [23].

This research contributes to finding out the IT-based challenges due to the pandemic, which will influence the IHRM in MNCs to maintain competitiveness in productivity to control employee turnover [24]. By specifically

focusing on the impact of these challenges on IHRM practices, the study offers valuable insights into how MNCs navigate the unprecedented disruptions caused by the pandemic while striving to maintain competitiveness and productivity levels. This study determines the technology-based challenges that IHRM may face due to external factors such as the COVID-19 pandemic. The level of transformation in HRM systems regarding IT and internet usage has also been discussed based on the MNC managers from different industries. The following sections in this research reviewed and discussed the institutional theory, hypothesis development, and conceptual framework. In order, research methodology has been described along with focusing on sampling design, data collection, and data analysis. Finally, the study has been wrapped up with results and findings, theoretical and practical implications, and limitations for future studies.

### **1.1. Underpinning theory**

This research conceptualized the IHRM function at the MNC level as comprising global HRM practices during the COVID-19 pandemic. According to the existing literature [25], MNCs are under pressure to align with their institutional environment and strive for recognition by adopting practices and structures perceived as appropriate within their current context. Institutional theory is generally concerned with both external and internal pressure and force factors that organizations face [26, 27]. Findings suggest that the institutional environments can be barriers to successful transfers of IHRM practices, thus, raising various challenges for the MNCs with their complexity [28]. This theme of institutional has been built on the fundamental idea that MNCs respond to the forces of the new environment. Researchers [29] have developed a conceptual model to evaluate the COVID-19 impact on institutional theory and explained how service firms and organizations make the transition to effective crisis management [30], specifically with constructive resilience strategies in HRM practices. Previous IHRM studies have made various references to institutional theory and discussed that institutionalization ideas can help understand the determinants of international HRM practices in MNCs [25, 27, 31, 32]. This study offers institutional theory to address how and why HRM practices and policies are required to be effective in this kind of pressure, such as a pandemic.

### **1.2. International human resource management (IHRM)**

IHRM practices are essential for multinational corporations (MNCs) to manage their global workforce and achieve organizational objectives effectively [33]. The rapid growth of global competition has increased the number and significance of MNCs operating around the globe in recent years. In the current environment, the extent to which IHRM strategy can be effective across MNCs in multinational countries like Malaysia depends on HRM practices regarding the importance of perceived value [34]. To achieve the MNCs' goals, IHRM practices help to enhance the implementation of management strategy [35]. Adaptability requires HR managers to anticipate even worst-case scenarios such as economic crises or pandemics, thus, leading HRM to make a quick decision to respond to unpredictable conditions [36]. While belonging to the current pandemic situation, IHRM practices might have changed [37].

Research in the field of IHRM has identified various practices that are crucial for MNCs operating across borders [38]. For instance, strategic staffing [39-41], rewards-based policies such as compensation [42, 43], cross-cultural training [44, 45], job security, and performance management are among the key IHRM practices emphasized in the literature [46]. According to [47], effective IHRM practices are critical for ensuring the alignment between global business strategies and human resource strategies. They highlight the importance of strategic staffing, which involves the deployment of employees to international assignments based on their skills and competencies to meet organizational needs in different markets. Therefore, These practices help MNCs overcome the challenges of managing a diverse and geographically dispersed workforce while maximizing performance and competitiveness [48].

### **1.3. COVID-19 and MNCs competitiveness**

Multinational corporations (MNCs) have been defined as vehicles to transport HRM practices and policies from their home country across national boundaries globally [49]. MNCs continue to grow in terms of foreign direct

investment (FDI), conducting services and products across borders, and the value of trade between countries even during the pandemic. MNCs must consider how to be sensitive to the competitive business environment and also how to balance competing pressures for integration and differentiation, which is typically facilitated by HRM activities [50]. In the context of MNCs typically refers to the impressment of the surplus value produced by employees in the form of intensification. As such, global competition has already forced many MNCs to improve their quality and innovation while keeping low cost [51]. Competitiveness is a marketing and industry-level source of competitive advantage [52] and should be the key concern to the MNCs and their HR managers, as their performance is ultimately related to them [53], especially during unforeseen situations such as the COVID-19 pandemic.

The majority of researchers such as [54], discussed the negative impact of the pandemic on firm's performance. However, the main problem addressed by this study is to identify how both positive and negative impacts of a pandemic could be more considerable to oversee and cope in MNCs in Malaysian industries and what could be the suggestion given for foundation for sustainable businesses in this current situation. From the lens of MNCs' competitiveness and in a term of existing academic evidence from COVID-19 impact [55-57], and consistent with previous findings [24, 54, 58] the following hypothesis is proposed:

*H1: The COVID-19 pandemic has a direct effect on MNCs' competitiveness.*

#### **1.4. COVID-19 and IHRM practices**

Generally, international HRM is considered from a global perspective referring to the management processes in the international context [59], which is related to the competitive enterprises and strategic goals in the global environment in which effective practices and policies play a crucial role in organization performance [60]. The success of IHRM practices depends on how the employees make sense of their working status and cope with the current workplace environment [61].

With the most recent pandemic, HR departments in MNCs have to navigate a situation that was never known to have happened before, thereby finding instant solutions across any changes in different areas of their operations [62]. Researchers [63] argued that HRM releases the statement and inquiries followed regarding the obligations, new policies, and recruitment and staffing design associated with the workplace and pandemic. Researchers [61] also explained that managing the COVID-19 crisis with insights into IHRM practices has been recognized when MNCs and their employees are uncertain and experiencing stress. The majority of recent studies demonstrated that the COVID-19 pandemic can propose different responses and work support, which may trigger changes in HRM functions [37, 56-58, 64]. The reward-based policies or compensation are controversial in IHRM practice during the pandemic since the company goals are still the same while job design and workplace environment faced noticeable changes [65, 66]. Based on the above findings the following hypotheses are developed:

*H2: The COVID-19 pandemic has a direct effect on staffing practices.*

*H3: The COVID-19 pandemic has a direct effect on compensation.*

#### **1.5. IHRM practice and IT challenges**

Information technology plays a pivotal role in facilitating global business operations and enabling communication and collaboration within multinational corporations. However, along with its benefits, IT also presents various challenges for organizations, particularly in the context of international operations [67, 68]. These challenges encompass issues related to infrastructure, cybersecurity, data management, and digital transformation [69]. On the other hand, dimensions of IT challenges include cybersecurity risks, technological infrastructure, digital skills, and IT governance mechanisms [70]. The existing literature emphasizes the role of digital skills and IT governance mechanisms in leveraging IT capabilities for competitive advantage, stressing the need for MNCs to invest in training and development programs to enhance employees' digital literacy and ensure effective governance of IT resources [71, 72]. The sudden shift to virtual work environments has

highlighted the importance of effective E-HRM systems and practices in supporting remote workforce management including recruitment [67]. Thus, the top management and HR are the key people who have a dealing role in implementing new practices due to any external or internal changes [73]. Although 100% security is not achievable and the IHRM system cannot be fully equipped with IT and internet-based management practices, adopting technology and its challenges are some of the key factors that influence IHRM practices in the global business environment. The desire to establish online networks of teamwork and remote work to fight against COVID-19 conditions can teach HR managers how to care for and modify their staffing practices and workplace policies. The rapid technological advancement such as IT in the globalized environment in Malaysia has been increasing the digitalization changes in all aspects as a buzzword, even as a new HRM trend [74]. At the beginning of the 21st century with exploring the HRM trends, digital HR is a noticeable part of the changes, which means the transformation of the HR function from paper-based and F2F to the digital and electronic system (E-HRM) [75]. According to [14], before the pandemic only a few departments were leading remotely or through IT activities but due to COVID-19 most sectors in different companies are rushing to employ technology and build work from home strategy, which may not be easy for HR managers in some sectors to manage remote work effectively. The workers who are employed under performance-based IHRM practices are significantly more involved in working remotely [76]. The role of IT infrastructure capabilities in the relationship between digital transformation initiatives during the pandemic and organizational agility, suggests that effective IT infrastructure is essential for enabling organizational responsiveness and adaptability to changing business environments [77]. Moreover, the mediating role of E-HRM systems in enhancing HRM effectiveness and organizational performance, emphasizes the transformative potential of digital HRM technologies in supporting strategic HRM initiatives and driving organizational competitiveness [78]. E-HRM has the potential to significantly contribute to sustainable development in MNCs by global sustainability objectives, even post-pandemic. By leveraging digital technologies and platforms to enhance HRM effectiveness, efficiency, and strategic alignment, MNCs can create value for their employees, stakeholders, and society as a whole while simultaneously advancing sustainable development goals and principles [79]. Therefore, more practices arise, such as staff well-being, and organizations become more conscious of ensuring that all employees are in good health conditions. Findings confirmed that higher pay and compensation are significantly related to remote work [80]. Consistent with previous findings the following hypotheses are to be assessed in this study:

**H4:** *Staffing has a direct effect on working from home.*

**H5:** *Staffing has a direct effect on E-HRM.*

**H6:** *Compensation has a direct effect on working from home.*

**H7:** *Compensation has a direct effect on E-HRM.*

#### **1.6. Direct effect of IT-based challenges on MNCs' competitiveness**

Most businesses and MNCs globally experienced the mass implementation of working from home and telecommuting during the isolation caused by the COVID-19 pandemic [81]. Working from home can increase the productivity and efficiency of workers based on random control of MNCs' performance in a competitive business environment [82]. However, some previous findings explained that working from home negatively influences competitiveness in the productivity of dull jobs or positive implications on creative tasks [83]. In addition, technology implementation has become one of the current managerial practices, particularly in HRM and the entire multinational company. Several researchers and HR practitioners attempt to define the concept of E-HRM as a new trend. Simply put, E-HRM is defined as the form of technologies that allow employees to have direct access to HRM services while supporting the administrative activities and strategies of HRM [84, 85]. Findings showed that E-HRM can truly offer MNCs a competitive advantage and presents an actual competitive necessity [86]. Based on the above literature, the following hypotheses have been proposed to evaluate the direct effect of IT-based challenges and trends on MNCs' competitiveness:

**H8:** *Work from home has a direct effect on MNCs' competitiveness.*

**H9:** *E-HRM has a direct effect on MNCs' competitiveness.*

### 1.7. IT challenges during COVID-19

Nevertheless, IT has been very active in educating staff on security importance such as cybercrime training, password management how to keep licenses active, and how to avoid malware functions [81]. Information technology comes with a policy; data protection is more emphasized on system security and how to keep documentation safe. IT has a challenging time to make sure all staff can work remotely well [87] like educating staff on new tools like web cameras, new Microsoft introductions, and many more [23]. Remote work and work from home (WFH) as a new dimension, gradually developed during the pandemic, is a flexible task supported by IT technology and information communication systems [11]. With understanding the importance of IT-based tools, HR managers are required to focus more on their practices on the implementation of internet-based communications [82]. Moreover, HRM must deal with various confidential information and ensure that all employees are working from a secure system remotely [2]. Therefore, among the existing research, work from home is probably the best-suited method to work with minimizing or avoiding any physical contact with a higher level of efficiency, and staff well-being based on the HRM practices, and tasks description within MNCs in Malaysia during the pandemic [88-90]. Simply put, since employees are able to work from home, companies should consider creating opportunities that will encourage them even with a shared platform where employees can interact with other team members [91]. The following hypotheses are proposed to assess the indirect effect of work-from-home E-HRM between IHRM practices and MNCs' competitiveness:

**H10:** *Work from home mediates the relationship between staffing and MNCs' competitiveness.*

**H11:** *Work from home mediates the relationship between compensation and MNCs' competitiveness.*

**H12:** *E-HRM mediates the relationship between staffing and MNCs' competitiveness.*

**H13:** *E-HRM mediates the relationship between compensation and MNCs' competitiveness.*

## 2. Research method

This study is framed based on a quantitative research method to assess the relationship between selected variables. The population for this research is the companies that are restricted to multinational corporations (MNCs) that invest and work in the service and manufacturing sectors in Malaysia. The cross-sectional survey method was adopted [92] to provide important insights into how the immediate shift to working from home may affect organizational performance, such as remaining competitive during the pandemic. According to the [93], to fulfill research objectives, primary data were collected as the most appropriate and suitable method when the structural equation model (SEM) was employed for analysis. The selected MNCs in Malaysia in this present study range in size from small to medium enterprises. The size of these MNCs can vary significantly, with employee counts ranging from a minimum of five employees to a hundred. Some of the larger MNCs may have extensive networks of subsidiaries and affiliates across the country, employing a substantial workforce in various roles and functions. Some of these MNCs may be engaged in manufacturing, education, property, general services, hospitality, ICT, and healthcare. Additionally, financial services MNCs, including banking and insurance institutions, play a crucial role in Malaysia's financial sector. According to the MIDA [94], the investment and annual turnover of these MNCs can also vary widely depending on their industry and market positioning.

The stratified random sampling method is employed to ensure that the collected information from the respondents as a sample should roughly show the same results as if the whole population had been surveyed [95]. This method involves dividing the MNCs' population in Malaysia into distinct groups based on specific characteristics, such as HRM positions, number of employees, and sectors. Some MNCs only have one person as an HR manager in an HR position, while others may have more than one level of HR professionals such as executive, non-executive, junior, or senior HR managers. According to the sampling method employed in this study, the stratum has been collected from various levels of HR professionals in HR departments. Once 250 MNCs had been identified from the population, the questionnaire was sent to the HR departments. Although

documented data and empirical evidence on active MNCs in Malaysia are limited, the MNCs have been identified from available official government sources such as [96], [94], and [97]. Each MNC was given a set of questionnaires based on the number of HRM positions, which were classified at various levels from senior management and above to the non-executive. A 5-point Likert-scale questionnaire was utilized to measure responses. A total of 172 responses were collected to analyze. Based on the research hypotheses and following the institutional theory, the research model for this study is developed, as shown in Figure 1.

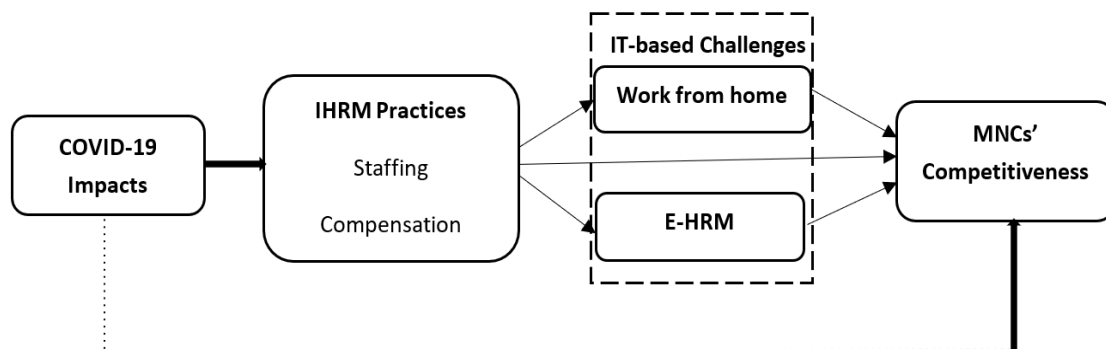


Figure 1. Research framework

### 3. Results and discussion

#### 3.1.1. Demographic profile of respondents and descriptive analysis

Analyzing the characteristics and demographic information of respondents is provided in Table 1 to confirm the credibility of the collected data in his research.

Table 1. Respondents' demographic information

Demographic		Frequency	Percentage
Gender	Female	105	61.0%
	Male	64	37.2%
	Prefer not to answer	3	1.7%
Level of Education	Diploma/ College degree	11	6.4%
	Bachelor/ Master's degree	157	91.3%
	Doctorate	3	1.7%
	Not formal education	1	0.6%
Position	Non-Executive	8	4.7%
	Executive	38	22.1%
	Senior Executive	54	31.4%
	Assistant Manager	34	19.8%
	Manager	17	9.9%
	Senior manager & above	21	12.2%
Job Experience	Less than one year	7	4.1%
	1 to 3	30	17.4%
	4 to 6	46	26.7%
	7 to 9	53	30.8%
	10 years & Above	36	20.9%
	Back to the position	0	0.0%
Employee No.	1 to 5	72	41.9%
	6 to 10	33	19.2%
	More than ten	67	39.0%
MNCs' Sector	Manufacturing	33	19.2%
	Services & other sectors	139	80.8%

According to the collected data, the majority of multinational companies in this study were from the service sector (80.0%). This includes sectors such as banking (16.9%), education (13.4%), hospitality and tourism,

which encompasses hotels, food, and beverage (F&B) establishments, and airlines (13.4%), as well as general services such as telecommunications and ICT services (12.8%). Additionally, other sectors represented in the study include property and construction, healthcare, retail, legal, and engineering. Despite the prevalence of service sector companies, the manufacturing sector still constitutes the largest group, accounting for 19.2% of the total respondents in this survey. Moreover, the background of respondents presents that many international managers in MNCs in Malaysia are female (61.0%) Malaysian citizens. Of the total of 172 respondents, 54 (31.4%) were senior executives, 22.1% executives, 19.8% assistant managers, 9.9% managers, and 21 (12.2%) of the respondents were senior managers & above. The sample of this research also indicated that most of the HR managers have more than three years of work experience in their positions. Most of them have 1 to 5 employees under their supervision (41.9%), which is followed by 39.0% of HR managers who supervise more than ten employees, and 19.2% who supervise 6 to 10 employees.

### 3.1.2. Testing and measurement model

The partial least structural (PLS) is performed in this study by assessing the convergent validity of constructs in accordance with [98] guidelines in order to examine the causal relationship among key variables. This research performed SEM analysis to evaluate direct and indirect effects among all variables and relevant dimensions. PLS-SEM is employed over covariance-based technique [99]. Therefore, SEM-PLS is used over the covariance-based technique due to the minimum requirements of the assumptions such as sample size, distribution, measurement scales, and normality assumptions of data [100]. Testing measurement model has been done by using factor loading, reliability, and average variance extracted (AVE).

The loadings for all reflective items, except two items each from staffing and work-from-home had been deleted, exceeding the recommended value of 0.5. Composite reliability values (see Table 2) that displayed the degree to which the items indicated the latent construct ranged between 0.737 and 0.962 and exceeded the recommended value of 0.7. The average variance extracted ranged between 0.522 and 0.737, which exceeded the recommended value of 0.5 [101, 102].

Table 2. Factor loading and reliability for first-order construct

Construct	Item	Scale type	Loading	AVE	CR	Cronbach's $\alpha$
COVID-19 impacts	COV1	Reflective	0.680	0.522	0.837	0.846
	COV2		0.780			
	COV3		0.737			
	COV4		0.653			
	COV5		0.783			
	COV6		0.692			
E-HRM	EHRM1		0.920	0.792	0.868	0.881
	EHRM2		0.855			
	EHRM3		0.893			
MNCs Competitiveness	MNC1		0.839	0.629	0.901	0.921
	MNC2		0.802			
	MNC3		0.812			
	MNC4		0.808			
	MNC5		0.730			
	MNC6		0.728			
	MNC7		0.823			
Compensation	RP1		0.842	0.673	0.903	0.910
	RP2		0.804			
	RP3		0.863			
	RP4		0.816			



Construct	Item	Scale type	Loading	AVE	CR	Cronbach's $\alpha$
	RP5		0.808			
	RP6		0.785			
Staffing	ST1		0.803	0.611	0.842	0.868
	ST3		0.817			
	ST4		0.713			
	ST5		0.793			
	ST7		0.779			
Work from home	WFH1		0.837	0.609	0.870	0.882
	WFH2		0.829			
	WFH3		0.813			
	WFH4		0.654			
	WFH5		0.799			
	WFH8		0.735			

Table 3 presents the inter-construct correlations (below the diagonal) and the square roots of the average variance extracted (on the diagonal) of the constructs. The table shows that the square root of the average variance extracted for all factors was higher than their shared variances. Based on the criterion outlined by [103], this result reaffirmed the discriminant validity of the model constructs. All variables in this study meet the criterion as each square root of the average variance extracted (AVE) exceeds the respective inter-correlations on the construct correlation matrix. This indicates sufficient discriminant validity across all constructs.

Table 3. Inter-construct correlation for first-order constructs

Construct	Compensation	COVID-19	EHRM	MNCs' competitiveness	Staffing	Work from home
Compensation	0.820					
COVID-19	0.482	0.723				
EHRM	0.652	0.387	0.890			
MNCs' competitiveness	0.710	0.453	0.626	0.793		
Staffing	0.722	0.327	0.561	0.629	0.782	
Work from home	0.766	0.558	0.608	0.695	0.664	0.781

### 3.1.3. Assessing the structural model

The PLS analysis is performed to determine a significant level of level and path coefficient and allowed to estimate the relationship between IHRM practices, MNCs' competitiveness, and IT-based challenges during the COVID-19 pandemic. As shown in Table IV the following direct effect has been illustrated: (1) the predictor COVID-19 didn't display a positive influence on MNCs' competitiveness, (2) COVID-19 exhibited a significantly positive influence on staffing ( $\beta = 0.327$ ), (3) COVID-19 exhibited a significantly positive influence on compensation ( $\beta = 0.482$ ), (4) Staffing showed a significantly positive influence on work from home ( $\beta = 0.664$ ), (5) Staffing showed a significantly positive influence on E-HRM ( $\beta = 0.194$ ), (6) The predictor compensation displayed a significantly positive influence on work from home (0.605), (7) Compensation displayed a significantly positive influence on E-HRM (0.605).

Second, the indirect effect of staffing on MNCs' competitiveness and compensation and MNCs' competitiveness was determined by using the bootstrap approach, as prescribed by [104], which appeared to be

more suitable than the Sobel test and the causal steps [105]. The p-value was applied, which was significant at  $p \leq 0.05$ . Table 4 showcases the significance of both the positive and indirect impact of staffing on the competitiveness of multinational corporations (MNCs) through work from home. Additionally, it highlights the importance of the positive and indirect influence of compensation on MNCs' competitiveness through work from home. Moreover, Table 4 underscores the significance of the positive and indirect effects of compensation on MNCs' competitiveness through E-HRM.

Table 4. The results of the assessment of the structural model (Direct effect and indirect effect)

Direct t Effect		Path coefficient	P-value	f Square	VIF
H1	COV→ MNC	0.073	0.334	0.008	1.459
H2	COV→ ST	0.327	0.000	0.120	1.000
H3	COV→ RP	0.482	0.000	0.302	1.000
	ST→ WFH				
H4		0.664	0.000	0.788	1.000
H5	ST→EHRM	0.194	0.046	0.032	2.079
H6	RP→WFH	0.605	0.000	0.453	2.079
H7	RP→ EHRM	0.652	0.000	0.738	1.000
H8	WFH → MNC	0.676	0.000	0.548	1.540
H9	EHRM → MNC	0.253	0.000	0.128	1.519
Indirect Effect					
H10	ST→WFH→MNC	0.103	0.013	-	-
H11	RP→WFH→MNC	0.279	0.000	-	-
H12	ST→EHRM→MNC	0.062	0.150	-	-
H13	RP→EHRM→MNC	0.164	0.011	-	-

Notes: \* $p \leq 0.05$  Not 0.01

### 3.2. Discussion

To enhance understanding of the source of competitive advantage during the COVID-19 pandemic, and to the extent how MNCs' performance remains competitive, the IHRM department should establish a flexible structure at the corporate level to differentiate its practices based on the current situation on the various subsidiary roles. This article presents the means of the COVID-19 pandemic impact, IHRM practices, and IT-based challenges in MNC's competitiveness. From the study findings, the direct effects of the COVID-19 pandemic on staffing and compensation were significantly supported which is consistent with [61], [54], [57], and [106] findings. For example, Caligiuri et al. [61] stated that the pandemic increases cross-border distance and reduces international mobility which leads to difficulties, in terms of employee selection, training, support, health and safety, as well as leadership and virtual collaboration. Moreover, these results are consistent with previous studies such as [106] and [107]. For example, [106] argued that staffing design is associated with the pandemic and Caligiuri stated that staffing has been recognized when the employees are experiencing stress. In addition, [107] stated that compensation was controversial during the pandemic when the workplace environment faced noticeable changes.

The result of the study also found a positive relationship between staffing and working from home as well as a positive relationship between staffing and E-HRM. This result is consistent with previous results such as Mathew and Jain [71] who emphasized training and development programs to enhance employees' digital literacy and ensure effective governance of IT resources. Moreover, the result of the study found a positive

relationship between compensation and work from home as well as the positive relationship between compensation and E-HRM. This result is consistent with [108] who stated that higher pay is related to remote work. WFH demands employees' creativity which serves as a challenges to attain the targeted goal. Companies, as a business entity, are required to provide an appropriate compensation formula without damaging employees' financial aspects. In addition, the study found that working from home mediates the relationship between compensation and MNCs' competitiveness as well as the relationship between staffing and MNC competitiveness. This result is consistent with previous results such as [109] who stated that working from home increases staff well-being by decreasing physical contact at a higher level and increases MNC competitiveness with a shared platform where employees can interact with other team members. Furthermore, the result of the study revealed that E-HRM mediates the relationship between staffing and MNCs' competitiveness as well as the relationship between compensation and MNC competitiveness. This result is consistent with the result of previous studies such as [82]. For example, [82] stated, that HR managers are required to focus more on the implementation of internet-based communication and ensure that employees work from a secure system remotely to increase competitiveness.

### **3.2.1. Theoretical implications**

In this research, existing theoretical formation in the literature on IHRM practices and IT-based challenges by investigating the impact of the COVID-19 pandemic within the MNCs context in Malaysia gave direction to the research questions. This leads to recognition of the fact that, depending on the nature of the IHRM system, institutionalization ideas can help understand the determinants of the international IHRM practices in MNCs [25, 27, 28, 31, 32, 107]. The institutional theory provides a set of new methods and program development to understand how MNCs are able to redirect normative or escape external factors such as the political system, budgetary crisis, or the COVID-19 pandemic that may affect limitations in IHRM activities and impact the power of businesses. Thus, this study provides several important theoretical interfaces for those in research and academia. In addition, this research contributes to theoretical advancements in the field of IHRM by integrating insights from institutional theory, introducing methodological innovations, and offering theoretical interfaces for research and academia. These theoretical implications enrich our understanding of how MNCs navigate IT-based challenges during the COVID-19 pandemic and provide valuable guidance for future research and practice in the field of IHRM.

### **3.2.2. Practical implications**

From the managerial view, the findings of the present study demonstrate the importance of understanding the role of IHRM practices and considering IT usage, especially when the company faces unforeseen conditions such as a pandemic. This study introduces important managerial implications for those who work in the profession, particularly those international HR managers who have supervision roles in multinational companies and will become an important voice on the impact of the COVID-19 pandemic on IHRM practices. From a managerial view, the findings of this research highlighted the importance of understanding the role of IT in IHRM practices. With internalization evolving and continuing to grow rapidly the IT factor would be one of the major contributors to the success factors of IHRM practices at MNCs.

Through empirical analysis and theoretical exploration, this study not only identifies the key IT-based challenges faced by MNCs during the pandemic but also examines their repercussions on various aspects of IHRM, including talent management, remote work policies, and employee retention strategies. By elucidating the complex interplay between IT challenges and IHRM practices, the research provides a clear understanding of the mechanisms through which MNCs adapt and innovate in response to the evolving business landscape, specifically multinational companies. Furthermore, the study contributes to practical implications by offering actionable recommendations for MNCs seeking to effectively manage IT challenges and enhance their HRM strategies amidst the disruptions of the pandemic. By identifying best practices and effective coping mechanisms, this research equips MNCs with valuable insights and guidance for fostering resilience, maintaining competitiveness, and promoting sustainability in HRM practices during times of crisis.

#### 4. Conclusions

This pandemic has had a major impact on MNC's performance and competitiveness, and it has changed the typical flow of IHRM practices which solely operates on its own. At this stage, the HR department in MNCs has learned to collaborate with more IT-based support and work from home as a new job design. This could be regarded as changes from IT, however, deftly eases the process of HR during the pandemic. The challenges from IT to IHR were in-depth as they occurred in many unforeseen situations. Based on the analysis, E-HRM would be a principal implication for the future of the HR department. Overall, this study was able to trace the influence and impact of COVID-19 brought into IHRM practices. The conclusion of this study suggests that the findings of this study will serve as the base, guidance, or benchmark to monitor the impact of COVID-19 on IHRM practices and MNCs. Additionally, the findings of the current study highlight the importance of integrating sustainability into the core strategies of IHRM, encouraging MNCs to not only navigate the challenges posed by the COVID-19 pandemic but also to emerge as more resilient and responsible entities in the global marketplace.

As with any other study, this present study has its limitations. In this research, data were collected from all MNCs' categories, either local-based or international companies that have chosen Malaysia as a host country, but there has not been any comparison or differentiation done between these two categories. Another shortcoming of the research design was limited to the quantitative survey, as it is based on a close-ended question which may not have allowed to represent the actual arising in a comprehensive form. Otherwise, if the research is done by qualitative method, it is possible to have control over the respondent. To provide some direction for future study, it could be more comprehensive if the researcher adopted the mixed method to achieve more information for instance, mixed-method (qualitative and quantitative) or triangulation, as well as providing insights to get more reliable responses. Therefore, future studies can focus on the specific managerial level to interview. Future research could also be focused on industry to evaluate the pandemics caused, as for HR professionals it may vary according to the industry with being focused on one industry which may allow to differentiate the impact and find a solution accordingly. Additionally, future can consider research to analyze the level of 'cyber-attack' in E-HRM at MNCs because HR is a very close department with the highest protected data.

Lastly, it is necessary to observe that integrating a sustainability perspective into the examination of the pandemic's impact on MNCs and IHRM practices may be essential. The shift towards IT support and remote work arrangements would not only address immediate operational challenges but also it would present an opportunity for sustainable organizational practices. Sustainable IHRM emphasizes the long-term well-being of employees while having an economic impact and addressing societal and environmental issues. For instance, the adoption of E-HRM and work-from-home policies can reduce the carbon footprint associated with traditional office spaces. Moreover, these initiatives foster a conducive environment for work-life balance, prioritizing employee well-being. By allowing flexibility in work arrangements, companies adopting such policies create inclusive opportunities for a broader demographic, promoting diversity and equal access to employment. Beyond the social and environmental benefits, embracing E-HRM and work-from-home practices can yield substantial cost savings. This includes reductions in resource consumption and the need for physical office spaces, thereby emphasizing the economic facet of sustainability for MNCs. These strategic changes not only enhance corporate sustainability but also position MNCs to navigate a dynamic global marketplace with resilience and responsibility.

#### **Declaration of competing interest**

The authors declare that they have no known financial or non-financial competing interests in any material discussed in this paper.

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## Author contribution

The contribution to the paper is as follows:

Alireza Jalali: Analysis and interpretation of results and discussion; Ramo Palalic and Sara Abhari. Corresponding Authors: study conception, Literature review, Conclusions, and implications and design; Mastura Jaafar and Thripurasundere A/P K. Maharaja prepared the literature review and collected data. All authors approved the last version of the manuscript.

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