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The Impact of New Human Resource Management Practices on Innovation Performance during the COVID 19 Crisis: A New Perception on Enhancing the Educational Sector

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Abstract: The study aims to investigate the impact of New Human Resource Management Practices (NHRM) on innovation performance mediating by organizational innovation and innovative work behavior in the educational sector during the COVID-19 pandemic. However, experiential proof to determine this relationship is inadequate. Consequently, quantitative statistical tools were implemented in the study. Using data gathered from 450 employees in the Ministry of Education in Amman-Jordan who participated in the online survey the present results indicate that there is a significant positive relationship linking NHRM practices and innovation performance. Additionally, a mediating role of organizational innovation and innovative work behavior was found. Moreover, the results identified that the relation increases more by organizational innovation mediator. Therefore, based on the results, boosting NHRM practices in the Ministry of Education will reinforce managerial implementation, fostering innovative performance. During the COVID 19 pandemic, the cruel challenges obliged the educational sector to use organizational strategies to achieve innovation within the crucial and unpredictable period, which needs practical, swifter technological practices, making it unbeatable, creative, and motivational competitive. Therefore, applying NHRM can present solutions, resolve problems, and enhance innovation among employees during the response time of a crisis. Form, execution and improved environmental sustainability within organizations that rely on permanent innovation are associated with HR practices.

Keywords: COVID-19 crisis; new human resource management practices (NHRM); innovation performance (IP); organizational innovation (OI); innovative work behavior (IWB); sustainability

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1. Introduction

The conventional set of human resource management practices as an important source should create a flexible and innovative view to maintain the significant effects in unique organizational strategies that distinguish committed employees, wherever continuous innovation is essential for gaining organizational sustainability. The competitive and unpredictable situation requires new human resource practices (NHRM) to deal with problems in the organizations to enhance their climate, contribute and heighten innovation performance. This shifts the entire scenario to technological processes such as E-recruitment selection, training, reward systems, employee involvement in decision-making, and teamwork linked strongly with organizational performance and HR outcomes. Evolutionary research is required on HRM practices because different researchers have indicated that the studies are scarce [1], as such research examines the relationship between NHRM and innovation performance [1,2]. Nevertheless, few studies exist discussing the links between NHRM and organizational innovation; the literature declares innovation activities need to be a cop in organizations by utilizing NHRM practices that can improve employees' involvement in new knowledge and the creation [1]. According to Waheed, et al. [2], innovation inside

organizations expands by adopting NHRM practices. Moreover, innovative outputs are expected from innovative work behavior [3], and IWB based on intentional behaviors generate new and creative ideas useful for organizations; results manifested the relationship between HRM practices and IWB as an opportunity, motivation, ability-enhancing HRM practices [4]. Adopting a technological process that can create the base for making challenging decisions is significant [5]. Hence, it is more salutary to study the adoption of technological information in depth [6]; the ideal solutions can offer ways to solve the challenges of traditional approaches and provide significant experience changes in organizational structure and design. It also results in the transformation of organizational frameworks and current processes, resulting in transforming the learning environments into more effective innovative learning environments. The results of our studies indicate that the government in Jordan should tailor a plan to build more sufficient policies for the online environment. Contingency plans are also needed to support an electronic and resilient education system [7].

The landscape of innovation turned to cutthroat difficulties and challenges because of the global crisis pandemic (COVID-19) which also affected the environment in sectors such as education, which guides us to think about innovative modern solutions and quick response times in order to correspond with the impact of the pandemic [8]. Government organizations have the power to fulfill services and not focus on innovation. Furthermore, employees facing resistance in performing innovation have few incentives and suffer frm unfair reward systems, but in changing scenarios from past to present, government organizations trying to promote their strategists to produce innovation while facing rapidly changing and unpredictable circumstances by concentrating on unique employees and raising operating systems, as organizations need technological processes and practices to produce innovations [9].

More than two million learners in Jordan were influenced by the closing of the learning institutions during the COVID-19 period; the educational sector in Jordanian ministries, like most governments, aimed to overcome the consequences of the pandemic after lockdown. During a press conference at the National Centre for Security and Crisis Management, defense Order No. 7 in April 2020 in Jordan was announced by the Prime Minister of Jordan, which deals with organizing remote learning for schools, universities, and vocational training. He debated that COVID-19 presents an opportunity for Jordan to increase the percentage of remote learning. Based on the announcement, policymakers in the Jordanian government should develop the educational sector to promote E-learning, which makes the environment innovative, creative, and more effective [7]. Demanding innovation in government organizations should expand, especially for maintaining the human capital value of possessing skills and abilities to ignite unique strategies, particularly in developing countries [10].

Researchers declared that the technology organizational-environment (TOE) theory is widely implemented in innovation performance to support the organization's practices, proficiency, and competencies. Furthermore, perceived intention and ease of use of innovation need perceived behavioral control. Also, it is an important factor for accepting the use of information technologies [11,12]. Besides, TOE theory offers sustainable competitive benefits for organizations and is useful for NHRM practices. Moreover, the new practices would be unique, and innovative when achieving sustainable implementation of TOE theory in firms [1]. Hence, the current study, during the COVID-19 pandemic in the educational sector which required an innovative environment based on technological methods [8]. Applying TOE theory to justify the framework explains the relationships between NHRM practices, innovation performance (IP), organizational innovation (OI) [1], and innovative work behavior (IWB) that the relationship between HRM practices and IWB found [4]. Moreover, based on goal theories, Odoardi et al. [13] proposed a model to show the role of innovation goals that might foster successful accomplishment of innovation-related outcomes. Traditionally, motivational processes are positive and associated with work organization outcomes; it also supposes that they might be reasonably conducive to innovation

results, which represent a major pivot for achieving organizational competitiveness and success. In their study, innovative work behavior (IWB) considered a fraction of an overall motivational process, includes two vast systems hereinafter: goal generation and goal striving. Over and above, it produces an innovative climate in organizations supported by innovative behavior demands and NHRM practices [1]. which lead to the question of how to decide how NHRM practices have a positive effect on innovation performance through innovative work behavior. Indeed, Waheed et al. [14] referred that the several recent works of literature emphasize the positive relationship between NHRM practices and innovation performance at various stages of corporate performance such the adoption of the latest and most up to date concepts of HR planning, job analysis, recruitment and selection, along with the corresponding procedures.

However, particularly during the COVID-19 crisis [7], little literature has discussed the abovementioned relation scenario, as authors suggested for future studies checking the evolutionary perspective of NHRM's effect on innovation performance with more experimental confirmation that can be upgraded and adapted to new knowledge contexts over time. Also, the frame of the study can be verified in the service industry sectors in developing countries, and concentrate on the innovation concept to retest the concept in-depth taking into consideration its internal factors [1].

Consequently, in the current study innovation can be upgraded over time for new knowledge contexts by looking at it within the COVID-19 pandemic as a burning issue. Also, this study proposes to fill this gap as a new contribution to this academic area and suggests the Ministry of Education in the educational sector (as a service industry) in Amman-Jordan (developing country) as a target population. The study largely contributes to expanding the linkage between NHRM practices and innovation performance mediated by organizational innovation (OI), and through innovative work behavior (IWB) the mediating variable added to the relation.

In accord with the aims and objectives of this research, the endeavor is to contribute to the literature of HRM through innovative practices that can aid organizations in managing a crisis. This research further expands the geographical borders of the literature through conducting research in the Middle East and specifically, Jordan. In this sense, the major audience of this study is practitioners within the education sector to enhance HRM practices within this industry.

The study highlighted the innovative circumstances during the critical and unpredictable period that affected the world, and it tries to investigate the impact of new human resource management practices-which based on technological issues classified as innovation concepts and based on innovation performance during the COVID-19 pandemic with the interplay of organizational innovation and innovative work behavior in the educational sector, namely in the Ministry of Education in Amman which offered a quick response to the new situation represented by human resources as one of the main assets in the organization.

2. Literature Review and Hypotheses Development

2.1. New Human Resource Management Practices

Schuler and Jackson [15] introduced the importance of linking HRM practices and the competitive strategy of firms; strategy-based innovation needs to be created via mid-level people who take the initiative for change and solve problems with new ideas. They referred that some new HRM practices that have a wide generalization and are not entirely new but have reappeared lately. De Miranda Castro et al. [16] considered the horizontal directness among the several human resource practices to business administration leads to good quality of working life and more alignment between HR subsystems and the strategy of organizations. That E-HRM is a unique side that reflected the practices. However, NHRM has other aspects such as "flexibility" to deal with new situations. Also, strategy-based innovation, an initiative for change, and solving problems with new ideas. Researchers explained that NHRM practices are clusters that intend to produce responsibility, flexibility,

creativity, autonomy, and participation in production, not being interested in traditional HRM practices such as recruiting, selection training, and career paths. Information technology integrating with NHRM practices can achieve innovative performance, thus reducing mistakes and risks. Indeed, researchers demonstrated the empirical association connecting NHRM practices and innovation performance at organizations' planning. NHRM practices give significance to individual systems [2,17] and reduce bureaucratization. However, the inflexibility of hiring and promotion processes often diminishes employees' opportunities to do diverse work [18]. At the same time, several systems are formed within NHRM practices to gather employees' recommendations for gaining recent changes, decentralization of decision rights, team spirit in organizations, and quality of work [19].

Al-Harazneh and Sila [20] targeted internet and technology advancement trajectory has affected our lives, particularly education systems. As well, as the technology has a robust consequence on human resource management (HRM) processes and practices in a new approach and handled since the 1990s that corresponds with the replacement of face-to-face HRM activities and web-based HRM digitalization through automation systems. The employee's skills and behaviors affect organizations' implementation outcomes and raise the value in performance, improving a firm's effectiveness in HR-related tasks.

Furthermore, Nedumaran and Rani [21] encourage thinking innovatively using the HR technology named E-HRM to enhance accurately and effectively more flexible human resources management practices, facilitate the tasks and reshape work and life communication and behaviors. As an example on can cite E-recruitment, whereby candidates are allowed to apply online during job boards providing a database that allows searching, screening, and filtering applications for an interview. It is a conscious support tool in a modern company, using automated tool web-based online channels.

The practices go well with shifting scenarios to upskilling and digitizing the processes such as E-recruitment, especially in the present crisis [22]. However, the outsourcing of highly skilled IT workers produced a different design of HR practices. In comparison, the conventional HRM approach to recruitment aims at a lower cost and often satisfies the company's HR needs [23].

2.2. Organizational Innovation

According to Moohammad et al. [24], several scholars and institutions have presented definitions of innovation. For instance, it is 'a process that involves the generation of new ideas or practices within an organization' furthermore, they explored the fact that the propensity to practice innovation is greater if organizations are larger. In particular, surviving organizations in the fast-changing global system need to cope with the challenges of continuously progressing technological capacities. Meanwhile, Adam et al. [25]. said that innovation represents "a new ability to create wealth with resources and discuss innovation completely and systematically". Innovation strength is in new management, technology, products, and services practices. It demands ideas to be better and executed in organizations, effectively facing environmental changes.

Waheed et al. [2] linked main trends to clarify innovation in organizations to gain a competitive advantage by the critical relation with NHRM practices to achieve innovative performances (IP). First, they focused on the practitioners of IT dexterity in organizations. Then, they implemented IT-based training, which lead to IP that previous investigations had overlooked in the use of IT ambidexterity in organizational performance. Also, their study revealed that organizations should not only focus on existing processes, technology, products and services, but need to practice different HR strategies like job rotation, autonomy, training, and development, with the most high-level (IT) system for producing an innovative performance. Moreover, organizations are headed to adapting to new circumstances, innovating to obtain space in changes in the political-economic environment and investing essentially in human capital. HRM practices positively impact organizational innovations during both employee and organizational behavior; HRM practices allow the

employee to acquire skills to deal with new shifts in workplaces to work as a team to create successful innovations within organizations [26].

Technology issuance has enabled the adoption and undertaking of innovations in organizations and the influence of web-based HR on the HRM system force implemented by HR professionals of behavioral, intention, and position. Examiners studied Jordan as a developing country producing innovative pioneering changes in IT applications. The population is aimed at the telecommunications sector in Jordan. Companies include the Orange, Zain, and Umniah companies in Jordan. The authors specified the telecommunications sector because it is one of the main sectors that invests in human assets and pursues constant innovation in the Jordanian organizations telecommunication sector by studying the elements that digitize their HRM and affect organizational usefulness in different areas (Al-Harazneh and Sila [20]).

2.3. Innovative Work Behavior

Employees produce indispensable innovation in organizations with creative and new ideas, which are identified as innovative work behavior (IWB); moreover, it refers to ideas' development and implementation aspects that enable employees to display merit performance [4]. Responsiveness to changes and new technology reveals the significant challenges facing organizations and employees to seek innovation; individual innovation processes are supported by HRM practices such as flexible job design [27]. However, adopting an innovative approach in the workplace may lead to paying a price and conflict, particularly with co-workers [28]. On the other hand, researchers focus on the multi-dimensional aspects linked to innovative work behavior, such as formulating, experimenting and evaluating ideas and solutions [29]. Plus, great importance for research and development professionals lies in promoting innovation amongst participants within the organization, increasing the amount of discretion allowed individuals in their job performance. These variables are cited as required boundary restrictions in patterns of creativity, even though the complexity of studying individual innovative behavior in a natural work context is still increasing. Where turbulent environments are always found, every employee's job description is based on innovation in organizations [30]. Intrinsic motivation of responsibility and engaging IWB of employees is enhanced through leadership participation; directly, increased employee IWB helps enhance the organization's innovative capability and innovative results [31].

Lin et al. [32] confirmed that fast technologies improved innovative work, efficiencies, talented and competent employees, changing work enhancement, enriching physical, mental, and social defenses. Technology may also guide improved recruitment, training, career management, and performance evaluations in organizations. Outcomes of the study show that abusive management has a significantly negative correlation with job performance and the quality of employees' work behavior.

2.4. Innovation Performance

Innovation can be instated via individuals or organizations; it is a process that starts with an idea, progresses with the improvement, and ends with a novel output such as a process, product, or service. Organizational performance is influenced by innovation, a highly trained skilled workforce, and resource-based innovative knowledge with high-technology. Additionally, revenue growth is affected by the quality of innovation. The innovation performance relationship considers the value of recruitment outcomes and retention of employees [33]. Innovation system requirements are continuing innovation in products and processes that rely on technical skills and knowledge, particularly in educational sectors, by focusing on human resources. Work in organizations depends on employees' capacity to tackle a complicated problem [34], like changing the business environment conditions during the COVID-19 period, raising the need for innovative activities to improve products by knowledge to enhance performance [35].

2.5. Human Resource Management Practices, Innovation Performance, Educational Sector, and the COVID-19 Pandemic

Future sustainability challenges that refer to population and employment are based on education, the key for sustainable development and human development. Innovations in education affect governance and policy by upholding laws and regulations. Presently, these are being reconstructed by new digital technologies such as artificial intelligence and the internet in flexibility and creative work [36], developing skills among students and higher efficiency with enhanced teaching and learning [37].

During the COVID-19 pandemic, organizations must act effectively and efficiently using relevant knowledge and innovation by utilizing information technology to manage the resources to remain sustainable [35]; starkly, the pandemic revealed the importance of fundamental changes in HRM practices for dealing with people [38]. HRM performed a significant function during the digital shift such as teaching and helping employees to handle digital platforms. Globally, the crisis required employees to have technological skills to perform their work remotely. Also, managers were required to obtain the skills to motivate and regulate their employees in this new scenario [39]. Laursen and Foss [40] have referred to the complementarities among several technologies and learning while addressing NHRM practices and innovation performance. Decision-makers need to respond immediately, considering crises are opportunities [41]. Moreover, HR professionals should channel their energies towards enhancing and up skilling employee's transformation to adapt to changed workplace practices to be flexible and lying on new innovative technology, such as digitizing the recruitment process to deal with contemporary or future predicaments [22]. Furthermore, to expand the process of innovation, government, communities, and educational institutions should share schools in managing the knowledge sources like providing exceptional training and attending workshops to attain organizational learning full of spark innovation [42], such as using current skillsets to infer new methods that facilitate a learning environment [43], plus, the use of EdTech innovation to follow up-to-date trends to obtain effective outcomes in colleges and schools. The findings showed positive effects on learning outcomes in one of the Jordanian universities [44]. The Jordanian educational system introduced personal computers two decades ago in collaboration with the British government, which was a significant innovation challenge which faced the educationalists [45]. E-Learning as a teaching method was tested during the COVID-19 pandemic in the educational sector in Jordan, and the research found that the influence of E-learning education has both positive and negative aspects, and proper training is needed to achieve the proper benefits; this also guides the government to enhance E-learning as a teaching system even after COVID-19 [46]. Also, more readiness and contingency plans are needed in Jordan to develop an education system that supports distance learning [7]. Besides, the time has come for educational organizations to continue to attract quality human capital and achieve a competitive advantage [47].

The COVID-19 emergency pandemic shifted the attitudes of learning to the online style. In this study, Jordan, a Middle Eastern country with a 10 million strong population, showed good potential in the 2000s in using and applying information and communication technology (ICT) applications at moderate prices for ADSL and fiber-optics. The conventional face-to-face teaching and learning pattern was the norm. In sum, it is no longer optional to follow with online learning but a necessity because of the COVID-19 E-learning trial. Jordan is described as a limited resources country where the educational systems enjoy a great reputation. The education sector and institutions lead by using communication technology, establishing their infrastructure. Therefore, E-learning should be supported continuously by training and gaining technological skills for all staff and students [48]. Grencikova et al. [49] described the importance of creative HR practices linked with the performance in organizations. Their study argued the biggest challenge that faced HRM practices was dealing with the deficit of qualified, skilled, and motivated people in the global labor market. Researchers suggested creating an age-diverse group of employees participating in the distinct ideas of talented young people and senior's work experience

to be as trainers for other employees' systematic training and development processes to introduce professionals in their knowledge, skills, and abilities to get the successful performance in their jobs and meet fluctuations in circumstances and requirements of their jobs in organizations.

NHRM practices have flexibleness and inventiveness to deal with complexity and accelerated varieties of the environment. Scholars have revealed a significant positive relationship linking NHRM practices and innovation performance in semi-government organizations based on IT- techniques [1,2]; further, organizational sustainability depends on constant innovation. Innovation appears as is a significant technological tool that can upgrade in a new context over time [1], During the COVID-19 period in the educational sector [8]. By following this idea, plus the light of former literature, our current study proposes the impact between NHRM practices and innovation performance in the educational sector during the COVID-19 pandemic. The following hypothesis can be formulated from the preceding discussion:

Hypothesis 1 (H1). *NHRM practices are positively related to innovation performance in the educational sector during the COVID-19 pandemic.*

2.6. Organizational Innovation as a Mediator

Besides the above literature, NHRM practices associate innovation performance mediating by organizational innovation; although earlier studies' results acknowledging the organizational innovation as a mediator, it cannot be practiced in IT in public and private organizations [1]. Therefore, the following hypothesis is stated:

Hypothesis 2 (H2). *NHRM practices have a positive association with innovation performance through organizational innovation in the educational sector during the COVID-19 pandemic.*

2.7. Innovative Work Behavior as a Mediator

The findings of Sanz-Valle and Jiménez-Jiménez [50] defined innovation as "the introduction of a new or significantly improved product (good or service), process, marketing method or new organizational method in the internal practices of the business, workplace organization or external relations". Their results establish that there is strong proof of the effect of the system of human resource management practices on both employee's IWB and product innovation. Moreover, employees' IWB mediates the relationship between HRM and product innovation. Over and above, the innovative climate in organizations is boosted by innovative behavior requirements and NHRM practices [1]. Also, a relationship between HRM practices and IWB was found [4]. Based on the above literature, the following hypothesis is proposed:

Hypothesis 3 (H3). *NHRM practices have a positive effect on innovation performance through innovative work behavior in the educational sector during the COVID-19 pandemic.*

To this end, the current study proposes the model that presents the relation interplaying through the two mediators, organizational innovation and innovative work behavior between NHRM practices and innovation performance during the COVID-19 pandemic. As shown in Figure 1.

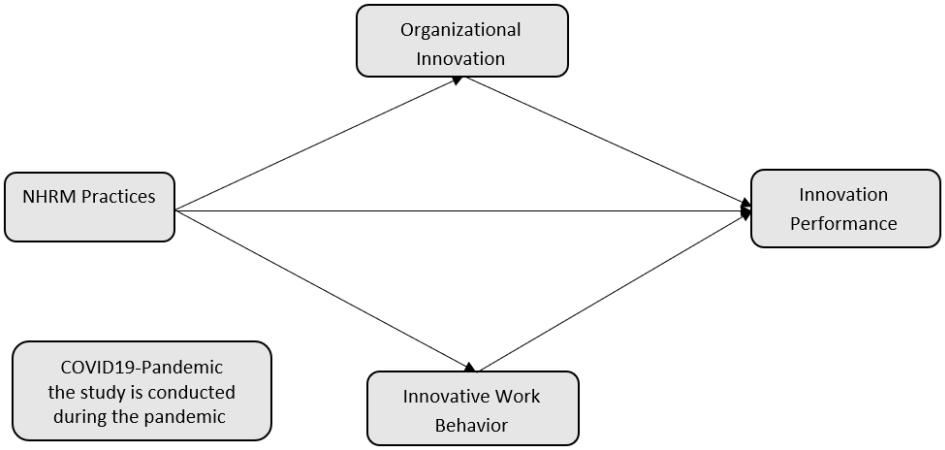

Figure 1. The model. Sources: Independent Variable (NHRM), Dependent variable (IP) and Mediator Variable (OI): Waheed et al. [1]. Mediator Variable (IWB): Bos-Nehles et al. [4]. The study is conducted during the pandemic time: Ebersberger & Kuckertz [8].

3. Methods

3.1. Design of Research, Instrument, Sample Technique, and Data Collection

The current research adopted a quantitative method, followed the deductive approach and, employed a cross-sectional design that collected data from more than one case and at a single point in time wherein the objectives are established during the research study as a basis for a set of hypotheses concerning the existence of associations between specific variables [51]. The study aims to examine the impact of NHRM practices on innovation performance mediated by organizational innovation and innovative work behavior in the educational sector during the COVID-19 pandemic. Data was gathered by using an online questionnaire administered starting in March 2021 and ending in April 2021 to 450 employees at the headquarters of the Ministry of Education in Amman (Jordan) who participated in the online survey. A Google link questionnaire was sent to employees via emails and social media channels—a WhatsApp employees group—using information provided by the respective departments of the ministry. The speed in obtaining data is above all necessary due to the COVID crisis [7]. Online-based surveys are becoming a popular, reachable, quick way of collecting data and analyzing the results with lower cost, and fewer errors compared with manual tools. Also, mobile surveys on smartphones are often more comfortable for participants [52].

Questionnaire validity was confirmed starting with unofficial interviews and distinguished professional discussions with the director of the HR department and other managers in the R&D department to clarify the related and unrelated terms linked to innovation during the pandemic period in the Ministry for ensuring the improvement and readiness of the questionnaire. Then, official consent was obtained from the Ministry. Later, employees were allow to voluntarily respond due to their working hours. The percentage of employees' decreased to 50% during the COVID-19 pandemic; luckily, that gave them more time to respond flexibly, especially using the online questionnaire and speeded up the collection of data for researchers. The questionnaire was developed in the English language (translated into the Arabic Language-referee translator); the questionnaire was piloted through copies (30) distributed around the headquarters in Amman to be sure that the statements were understandable, well defined, and the language was clear [53]. The results show that the questions were fully understood, and no difficulties were found. The survey comprised two distinct sections: Section one presents demographic variables of the participants, while section two presents items for four variables of interest. Participants responded using a five-point Likert-type scale.

Simple random sampling (SRS) is a probability convenience sampling technique used in this paper because everyone has an equal chance of being selected; in other words,

everyone can be sampled [54], so the researchers assumed a (95%) confidence level, (0.5) standard deviation, and a margin of error (confidence interval) of (+/−5%) to determine the sample size. A population size of 2126 were determined from the size of the HR department. A sample size of 323 was then considered for the research [55]. In addition, the Google Survey sample size calculator was used to define the right number. A total of 450 questionnaires were distributed to the respondents for the targeted population for this research, defined to include employees who work at the Ministry of Education (MOE) in Amman. Invalid questionnaires due to missing data were discarded—a standard procedure applied in online surveys to ensure credible and applicable questionnaires [56,57]. Researchers examined the probability of non-response bias utilizing the recommendations of Collier and Bienstock [58]. In the end, only 425 questionnaires were returned, resulting in a 94% response rate, and 358 were ultimately used for analysis due to missing data.

3.2. Measurement Scales

NHRM practices refers to the exogenous construct being tested in the model concerning innovation performance. Organizational innovation and innovative work behavior are the mediating variables for the study model. Items for variables except IWB were adopted from a former study [1], and [27] adopted IWB items. Our scales were from the available and extant literature. NHRM, IP, OI scales were driven from the work of Waheed et al. [1], the IWB scale was derived from Dorenbosch et al. [27], adapted based on HR interviews in the ministry, for example, replacing "Organization" with: "Ministry." Also, the added statement "during COVID-19 pandemic" was added to each question to confirm participants' attention. It accurately reflected the situation during the response period because employees were still under new circumstances and dealing with innovative materials. The constructs were evaluated through 44 items. The reliability of all items was 0.945. NHRM constructs were evaluated through 16 items. These items included titles to electronic-recruitment, selection, reward system, teamwork, training and development, and involvement of employees. The reliability of the 16 items was 0.951. Organizational innovation was assessed through six questions. These items aim to measure trying new ideas, trends and encourage innovation exercises in the organization. The reliability of the 6 items was 0.905. Innovation performance is measured using seven items, referring to the subjectivity of performance to indicate the organization's evaluation procedures, attraction and retention of employees, associations between employees and management, and the motive for innovative ideas. The reliability of the seven items was 0.893. Response choices for the NHRM variable, organizational innovation and, innovation performance varied from 1 = strongly disagree to 5 = strongly agree [5]. Likewise, 1 = very little extent to 5 = very great extent were used as response choices for innovative work behavior, which is measured using 15 items adopted from the study [27]; researchers in the current study selected the items to construct IWB and adapted them to fit the population target and time of the pandemic. These items mirrored the initial stages of innovation problem recognition and idea generation, promotion, realization, the usage of computer technology, and financial resources. The reliability of the 15 items was 0.947.

As shown in Table 1, other important demographic variables included gender, age, education, job experience, and job title.

The table shows the profile of the employees who participated in the current study. More than three-quarters of the 358 participants were aged between 30 to 50 and above, with high educational degrees, and their job experiences was greater than 11 years. As for the gender, there were more male employees than female ones, with percentages of 51.1% and 48.9%, respectively. In addition, 36.6% of participants' positions held supervisory jobs.

Table 1. Sample characteristics.

Measures	Items	Frequency (n = 358)	%
Gender	Male	183	51.1
	Female	175	48.9
Age	20 to 29	5	1.4
	30 to 40	102	28.5
	41 to 50	189	52.8
	Above 50	62	17.3
Education	High school	4	1.1
	Diploma	18	5.0
	Bachelor	125	34.9
	Post-Graduate	211	58.9
Job Experience	1 to 4 years	10	2.8
	5 years to 10 years	45	12.6
	11 years to 15 years	85	23.7
	Above 15 years	218	60.9
Job Title	Employee	227	63.4
	Head of Department	94	26.2
	Director of Department	16	4.5
	Directorate Director	21	5.9

4. Data Analysis and Results

We used Statistical Package of Social Science (SPSS) version 21.0 (SPSS Inc. Chicago, IL, USA for data preparation [59]. Also, partial least squares-structural equation modeling (PLS-SEM) was applied using Smart PLS 3.3.3 (SmartPLS GmbH, Gewerbering, Germany) to for examine the suggested model. PLS-SEM works with formative measured constructs plus it runs when a small population limits the sample size, nevertheless, PLS-SEM also works well with large sample sizes [60]. PLS-SEM has the advantage of estimating the entire theoretical structural model simultaneously and reduces measurement faults; for that, this method was the favored one for the current study [61]. The common method variance (CMV) may impair the strength of the empirical structural connections amongst the constructs because the data analyzed in the existing research were self-reported and cross-sectional. Hence, we conducted a full collinearity test to determine whether any construct had a variance inflation factor (VIF) value equal to or more than (3.3) [62,63]. As a result, the pathological (VIFs) of all construct's results varied from 1.810 to 3.101, indicating that CMV was not significant in this study.

4.1. Assessing the Formative Measurement Model

The indicator loadings estimated all model construction, internal consistency, convergent and discriminant validity. A level of 0.70 is considered the ideal level as referred to by Hair et al. [63]. The result of Table 2 show that all 44 of the indicators exceeded 0.70, and the average variance extracted (AVE) values were higher than 0.50 [64]. These results confirm the convergence validity. Dijkstra-Henseler's rho (pA) is a better measure to evaluate the internal consistency; it is more valuable than conventional Cronbach's alpha and the more liberal composite reliability [65]. As exhibited in Table 2, all rho values topped the 0.7 threshold [66], indicating sufficient construct validity. Relying on Henseler et al. [67], we implemented the heterotrait-monotrait (HTMT) ratio of correlations criterion to assess discriminant validity. Table 3 shows that all HTMT values were less than the more conservative threshold of 0.85, meaning discriminant validity was achieved. The additional bootstrap test showed that the criterion for HTMT inference was sufficiently met as none of the HTMT confidence intervals included the value of 1 [67]. The upper bound of the 95% confidence interval of HTMT was below 0.85 [65].

Table 2. Results for constructs.

	Construct	Item Code	Loadings	α	rho (pA)	CR	AVE
	NHRM Practices (Waheed et al.) [1].			0.951	0.952	0.95	0.545
1.	"Necessary actions are being taken by the HR department to avoid layoffs during the COVID-19 pandemic"	NHRM1	0.701				
2.	"The HR department's hiring procedure is more efficient due to the adoption of E-recruitment during the COVID-19 pandemic."	NHRM2	0.712				
3.	"Adoption of an E-HRM portal to maintain the employee's record and information during COVID-19 pandemic"	NHRM3	0.701				
4.	"The HR department is reorganizing employees to appropriate positions effectively as per situations during the COVID-19 pandemic"	NHRM4	0.753				
5.	"The effort which I put in my job is fairly rewarded during the COVID-19 pandemic"	NHRM5	0.706				
6.	"One's contribution recognition reflects the fairness of the reward system during the COVID-19 pandemic"	NHRM6	0.703				
7.	"Individual performance-based reward system during the COVID-19 pandemic"	NHRM7	0.704				
8.	"The Ministry allows me to make decisions regarding my job during the COVID-19 pandemic"	NHRM8	0.703				
9.	"Individual are allowed to make decisions in the absence of top-level [management] in the immediate work situation during the COVID-19 pandemic"	NHRM9	0.785				
10.	"The HR department keeps employees informed about the work issues as well as its performance during the COVID-19 pandemic"	NHRM10	0.703				
11.	"I feel that I am part of the team during the COVID-19 pandemic"	NHRM11	0.704				
12.	"Team members have the ability to solve problems during the COVID-19 pandemic"	NHRM12	0.871				
13.	"Team members support the innovation process during the COVID-19 pandemic"	NHRM13	0.797				
14.	"Appropriate job training for employees is set by the Ministry during the COVID-19 pandemic"	NHRM14	0.703				
15.	"The Ministry encourages employees to extend their abilities during the COVID-19 pandemic"	NHRM15	0.701				
16.	"Training of new skills and technology to compete in the learning industry [is provided] during the COVID-19 pandemic"	NHRM16	0.838				
	Organizational Innovation (Waheed et al.) [1]			0.905	0.909	0.905	0.615
17.	"The Ministry often tries new ideas during COVID-19 pandemic"	OI1	0.763				
18.	"The Ministry often tries out new trends to perform tasks during the COVID-19 pandemic"	OI2	0.757				

Table 2. *Cont.*

	Construct	Item Code	Loadings	α	rho (pA)	CR	AVE
19.	"The Ministry is innovative in its operations during the COVID-19 pandemic"	OI3	0.834				
20.	"The Ministry frequently introduces new products and services during the COVID-19 pandemic"	OI4	0.885				
21.	"Innovation level in our ministry is risky and resisted during the COVID-19 pandemic"	OI5	0.719				
22.	"Since one year ago introduction of new services has increased during the COVID-19 pandemic"	OI6	0.737				
	Innovative Work Behavior Dorenbosch et al. [27]			0.947	0.948	0.947	0.545
23.	"To what extent do you actively think concerning improvements in the work of direct colleagues during the COVID-19 pandemic?"	IWB1	0.728				
24.	"To what extent do you generate ideas to improve or renew services your department provides during the COVID-19 pandemic?"	IWB2	0.710				
25.	"To what extent do you generate ideas on how to optimize knowledge and skills within your department during the COVID-19 pandemic?"	IWB3	0.743				
26.	"To what extent do you generate new solutions to old problems during the COVID-19 pandemic?"	IWB4	0.772				
27.	"To what extent do you discuss matters with direct colleagues concerning your/their work during the COVID-19 pandemic?"	IWB5	0.705				
28.	"To what extent do you suggest new ways of communicating within your department during the COVID-19 pandemic?"	IWB6	0.729				
29.	"To what extent do you try to detect impediments to collaboration and coordination during the COVID-19 pandemic?"	IWB7	0.751				
30.	"To what extent do you actively engage in gathering information to identify deviations within your department during the COVID-19 pandemic?"	IWB8	0.704				
31.	"To what extent do you, in collaboration with colleagues, get to transform new ideas in a way that they become applicable in practice during the COVID-19 pandemic?"	IWB9	0.703				
32.	"To what extent do you realize ideas within your department/ministry with an amount of persistence during the COVID-19 pandemic?"	IWB10	0.780				
33.	"To what extent do you make your supervisor enthusiastic for your ideas during the COVID-19 pandemic?"	IWB11	0.856				
34.	"To what extent do you identify new ways to use computer technology more effectively in your work during the COVID-19 pandemic?"	IWB12	0.754				

Table 2. *Cont.*

	Construct	Item Code	Loadings	α	rho (pA)	CR	AVE
35.	"To what extent do you independently identify and deploy new computer applications into your work situations during the COVID-19 pandemic?"	IWB13	0.703				
36.	"To what extent do you seek new possibilities to gain financial means or to reduce costs during the COVID-19 pandemic?"	IWB14	0.703				
37.	"To what extent do you keep yourself informed about your department's financial situation during the COVID-19 pandemic?"	IWB15	0.719				
	Innovation Performance (Waheed et al.) [1]			0.893	0.895	0.893	0.544
38.	"Quality of products and services during the COVID-19 pandemic"	IP1	0.734				
39.	"Development of products and services during the COVID-19 pandemic"	IP2	0.737				
40.	"Evaluation of the ministry subjectively during the COVID-19 pandemic"	IP3	0.704				
41.	"Ability to retain and attract employees during the COVID-19 pandemic"	IP4	0.703				
42.	"The general relationship between employees and management during the COVID-19 pandemic"	IP5	0.701				
43.	"The motivation for creativity/flexibility of employeef during the COVID-19 pandemic"	IP6	0.727				
44.	"Innovative ideas during the COVID-19 pandemic	IP7	0.848				

Table 3. Discriminant validity (HTMT (0.85) criterion).

	1	2	3	4
1. Innovation Performance				
2. Innovative Work Behavior	0.549			
3. NHRM Practices	0.449	0.313		
4. Organizational Innovation	0.667	0.520	0.259	

Note: Shaded boxes are the standard reporting format for HTMT ratios.

The correlations between variables along with means and standard deviations are presented in Table 3.

Table 4 shows that discriminant validity is not established using Fornel and Larcker's criterion as the square root of AVE values for each construct is not greater than its correlation coefficients with other constructs of the model.

Table 4. Fornell-Larcker validity (HTMT (0.85) criterion).

	1	2	3	4
1. Innovation Performance	0.738			
2. Innovative Work Behavior	0.552	0.738		
3. NHRM Practices	0.450	0.315	0.738	
4. Organizational Innovation	0.670	0.522	0.260	0.785

Notes: Shaded boxes are the standard reporting format for HTMT ratios.

4.2. Assessing the Structural Model

The analysis started with a collinearity test before analyzing the structural relationships, which was conducted by testing the variance inflation factors (VIFs). The results indicated that the VIF values of all predictor constructs were in the realm of 1.810 to 3.101, which is really well below the most conservative threshold of 3.3 [62,63]. Accordingly, no collinearity issues were recognized. Five thousand subsamples were applied as a bootstrapping procedure to examine the hypothesized relationships amongst the constructs of the model.

As disclosed in Table 5, the relationship between NHRM and IP was bolstered by the significant estimated path coefficients (H1: β = 0.253, t = 5.448, $p < 0.05$). Therefore, the results provide support for H1.

Table 5. Results of hypotheses testing (path coefficient).

	Original Sample (O)	**Sample Mean (M)**		**Standard Deviation (STDEV)**	**T Statistics (|O/STDEV|)**	***p* Values**
IWB -> IP	0.2155	0.2141		0.0659	3.2712	0.001
NHRM -> IP	0.2536	0.2543		0.0466	5.4488	0
NHRM -> IWB	0.315	0.3216		0.0527	5.9821	0
NHRM -> OI	0.2605	0.2669		0.0554	4.7046	0
OI -> IP	0.4915	0.4916		0.0673	7.3032	0
NHRM→OI→IP	0.128	0.13		0.033	3.874	0.000
NHRM→IWB→IP	0.068	0.069		0.025	2.708	0.007
Hypothesis	**Parameters**	**β**	**SE**	***t*-value**	***p*-value**	
H1	Direct effects					
	NHRM→IP	0.253	0.046	5.448	0.000	Significant
	NHRM→OI	0.260	0.054	4.782	0.000	Significant
	NHRM→IWB	0.315	0.053	5.906	0.000	Significant
	OI→IP	0.491	0.068	7.192	0.000	Significant
	IWB→IP	0.215	0.066	3.244	0.000	Significant
	Indirect effect					
H2	NHRM→OI→IP	0.128	0.032	3.958	0.000	Significant
H3	NHRM→IWB→IP	0.068	0.025	2.708	0.007	Significant

Notes. NHRM = New Human Resources Management; IWB = Innovative Work Behavior; OI = Organizational Innovation; IP = Innovation Performance.

H2 and H3 examine whether the relationship between new human resources management practices and innovation performance is mediated by innovative work behavior and organizational innovation. Following the transmittal approach Rung-Tusanatham et al. [68] considered that models are complex when involving mediation effects. They listed recommendations that refer to forgetting the total indirect effect examining specific indirect effects and confirming that significant relations between variables should exist. As a result, we assessed the indirect effect of new human resources management practices on innovation performance through innovative work behavior and organizational innovation. The results presented in Table 5 indicate that innovative work behavior and organizational innovation had a significant mediation effect (β = 0.068, $p < 0.05$; β = 0.128, $p < 0.05$), The value of the indirect effects in Table 5 (0.128, 0.02) is small. However, the *p*-value is still less than the standard 0.05, so the relation is significant statistically and partially mediated. Therefore, the Ministry should increase its creative efforts; more vital innovative work

behavior applied by the Ministry supports the volume of organizational innovation, thus supporting H2 and H3.

Results were based on bootstrapping with 5000 subsamples (two-tailed). Figures 2 and 3 show more explanationd for the relation (the T value) and indicate an increase in the units (the R square)—Figure 2 shows that 1.00 units increase in NHRM will result in 0.254 units increase in innovation performance, 0.260 units increase in organizational innovation, 0.315 units increase in innovative work behavior. A 1.00 unit increase in organizational innovation will result in 0.491 units increase in innovation performance, while a 1.00 units increase in innovative work behavior will result in 0.215 units increase in innovation performance.

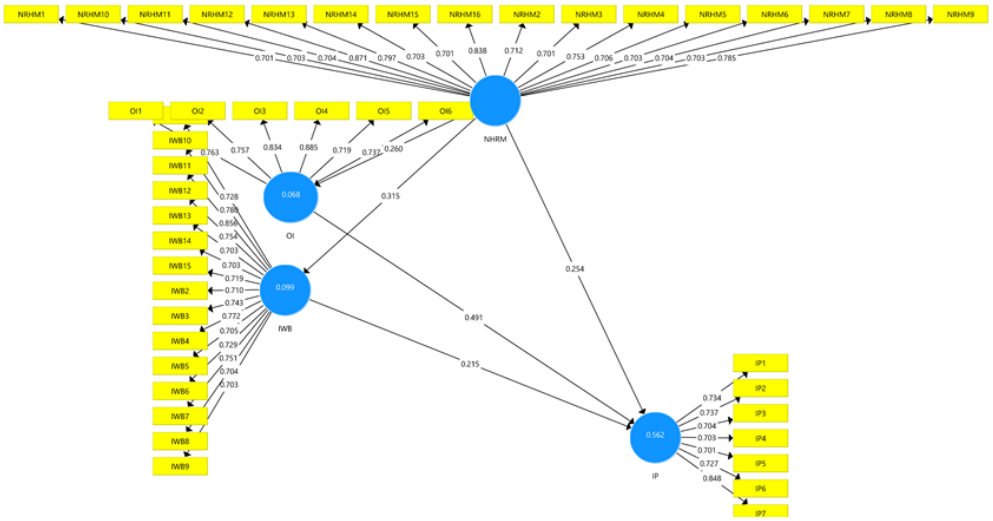

Figure 2. Measurement model with effects size (B-value). Notes. NHRM = New Human Resources Management; OI = Organizational Innovation; IWB = Innovative Work Behavior; IP = Innovation Performance.

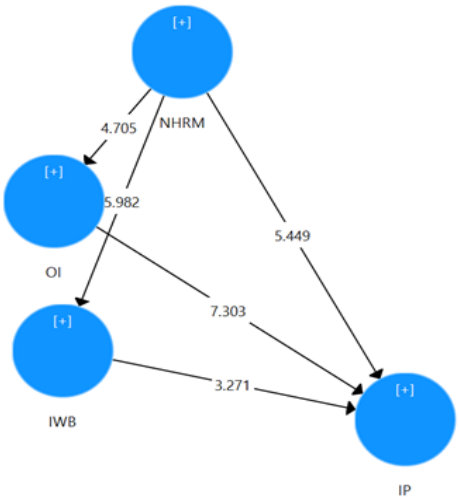

Figure 3. Measurement model with effects size (t-value). Notes. NHRM = New Human Resources Management; OI = Organizational Innovation; IWB = Innovative Work Behavior; IP = Innovation Performance.

Hypothesis 1 predicted that NHRM will have a positive and significant effect on innovation performance. The outcome revealed that the beta and t-value ($\beta = 0.253$, $t = 5.448$, $p = 0.000$) and also explains R-square (innovation performance) = 0.562 of the variances. 1.00 units increase in NHRM will result to 0.254 units increase in innovation performance.

Hypotheses 2 and 3 predicted that NHRM practices would positively and significantly impact innovation performance through indirect effects (innovative work behavior and

organizational innovation). The results presented in Table 5 indicate that innovative work behavior and organizational innovation had a significant mediation effect (β = 0.068, t = 2.708, $p < 0.05$; β = 0.128, t = 3.874, $p < 0.05$).

5. Discussion

The NHRM practices as a distinctive term produce positive effects on innovation performance by interplaying organizational innovation and innovative work behavior. We analyzed the impact of NHRM practices on innovation performance through two mediation roles of organizational innovation and innovative work behavior during the COVID-19 Pandemic in the educational sector using data collected from the Ministry of Education in Amman (Jordan).

Innovation performance enhancements were the critical purpose of investigating the important role of NHRM practices through innovative behavior of organizational innovation and innovative work behavior of the employees in the ministry to face an unpredictable crisis such as coronavirus disease. To attain sustainability and carry out innovation, any technologically superior project's prosperity requires knowledgeable, vital, and skilled human resources [10]. Therefore, HR policy support is seen as essential in assuring the powerful implementation of sustainability practices of human resources in the workplace of organizations; several terms link the association between sustainability and human resources, that many sustainability practices of HR considered important in forming an atmosphere of human resources sustainability in organizations to enhance the institutional system, and the workplace labor productivity through employees participation and consultation; the HR sustainability approach creates long-term benefits to the organization not only in terms of performance of organizations [69] as such the current or/and future crises required HR professionals for guiding employees to cope with stress and adjust the new remote working practices, relying on innovative technology at an unusual speed, rethink and redefine their role as the organizations and managing the crisis from an HRM point of view [22].

Consequently, the current paper results of all hypotheses showed to support the results of earlier studies. The first hypothesis proposed the positive impact between NHRM practices and innovation performance during the COVID-19 pandemic, which is related to the findings of studies of [1,2,39,40,49].

Incipiently, the mediation results contribute to the literature and basis knowledge of HRM. The role of organizational innovation is one of mediation is matched with prior studies, although rare of the studies revealed the role of innovation as a mediator [5], other researchers showed the connections amongst innovation, organizational drivers, and performance, it was clarified that the impact of (personal and organizational drivers) is mediated by organizational innovation [70].

Innovative work behavior, the other mediator, also harmonized with previous studies and proved between NHRM practices and innovation performances such as the important findings of Sanz-Valle and Jiménez-Jiménez [50] reported that employee's IWB mediates the relationship between HRM and product innovation.

5.1. Theoretical Implications

This paper's research addressed the use and impact of NHRM practices on innovation performance through static technology-organization-environment (TOE) theory, which appeared as a competitive advantage for the ministry of education as a government organization under global competition during the COVID-19 pandemic. Online questionnaires were distributed to 450 targeted employees who work at the Ministry of Education (MOE) in Amman. It is further, explained that NHRM practices are described as clusters intended to produce responsibility, flexibility, creativity, autonomy, and participation. Embedded within the premises of TOE, it can be seen that the aforementioned aspects have a vital role in terms of enabling innovation to grow for employees and their performance.

Furthermore, this investigation used organizational innovation and innovative work behavior as signifying concepts interpret between NHRM practices and innovation performance and analyzed their mediating effects; they were necessary to determine better implications of NHRM practices and innovation performance, and this is deemed a new development in educational government sector through the ministry. Moreover, goal theories are used to explain innovative results through innovative work behavior.

Eventually, compared to earlier studies, this study added a new exploration of NHRM practices on innovation performance by examining the indirect effect of innovative work behavior besides organizational innovation as mediators between NHRM practices and organizational innovation during the global COVID pandemic. It was partially mediated the relation in the model of study, and it increases more through organizational innovation (OI); via organizational innovation was positively stronger. Thus, our findings explained a direct relationship between NHRM practices and innovation performance, as was assumed earlier. Even though earlier study investigators found that there might not be direct relationships between NHRM practices and innovation performance, the degree of mediations was full [1]. The degree of mediation is considered full since the direct effect was found to be statistically insignificant [71]. Our research referred that innovation was a distinctive factor between them that played a unique role in the relationship. Both mediators partially supported this investigation because the direct relation between NHRM practices and innovation performance is stronger by coefficient estimated (H1: $\beta = 0.253$, $t = 5.448$, $p < 0.05$). All the relations were significant based on the results of Rungtusanatham et al. [68]. Additionally, contextual variables (mediators) were not only considered for their importance but also the role and impacts of NHRM practices were considered the main account, where previously, researchers gave little consideration to NHRM practices' interest, the role of NHRM practices and examine the direct effects of NHRM practices on innovation performance.

5.2. Managerial Implications

This research managerially implicates concentrating on the educational sector's innovation to be ready to overcome obstacles, especially when environmental turbulence situations like pandemics appear, constituting unpredictable situations globally like the COVID-19 crisis. Human resources as an essential core in the organization's need to be ready to face new circumstances by training for innovation in practices, surrounded with new and flexible ideas to increase the distinguish in NHRM which gives the awareness for all positions among employees. It is a completed and integrated process that covers all variables starting with NHRM practices that produce innovation, organization innovation, and innovative work behavior among employees to reach the goal of innovation performance. Managers are invited to guide people to acquire new skills, follow updated technological procedures, and train them to deal with remote working and remote learning in the Ministry to face the new situations effectively and speedily, with a high-quality response. As a new mediator added to the research model, the innovative work behavior needs to be more vital in the Ministry to support the importance of the other mediator organizational innovation. Innovation plays a crucial role in the Ministry helped greatly during the pandemic with the speedy availability of remote activities. Managers in this sector as well as decision-makers within schools and the education sector can use the current findings to implement new HRM systems in their organizations for further improve mechanisms as well as enable innovation in the functions of their firms.

6. Conclusions

The current study concludes that new human resource management (NHRM) practices are an essential tool in the educational industry. Therefore, the Ministry of Education as a service industry should promote HRM strategies by supporting innovation in all departments. The direct effect of NHRM as an independent variable (IV) statistically significantly impacted the dependent variable (DV) innovation performance. Moreover,

organizational innovation and innovative work behavior interplayed as mediator variables (MV) that were statistically significant, indicating a partial mediation on the dependent variable (DV) innovation performance during the COVID-19 pandemic.

The limitations of this study include the following: the research was carried out within a specific services industry (the educational industry) in the Ministry of Education as a public sector, and in one country (Jordan). Future researchers could attempt to replicate the results in other contexts as such examine the comparison between the public and private sectors within the educational industry during the COVID-19 crisis to carry out a comparative analysis to increase the benefits of the research findings, also, they can conduct a longitudinal search because this paper relied on cross-sectional data to test the evolutionary perspectives of NHRM's effect on innovation performance. Besides, the present research followed a quantitative approach; other researchers have a good opportunity to investigate the relation based on mixed methods (qualitative and quantitative). Over time, the innovation can be upgraded for new knowledge contexts to test the relationship in other crises or unpredictable conditions like subsequent or/and post-coronavirus periods.

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