

## The Moderation Role of Innovation and Infrastructure on the Relationship Between COVID-19 Crises and Health Care Performance: Evidence from Jordan



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### ABSTRACT

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This study examines the moderation role of innovation and infrastructure on the relationship between covid-19 crisis and healthcare performance in Jordan. The methodology of this study includes a literature review to identify relevant studies and theories related to the topic and identify gaps in the existing research. Attention is paid to human behavior and personnel interaction in the hospitals that receive Covid-19 cases. The findings of this study will be used to identify areas where improvements can be made in healthcare infrastructure and innovative practices to support healthcare performance during future crises better. This paper identifies specific innovative and most effective infrastructure supporting healthcare performance during a crisis, such as telemedicine, remote monitoring, or emergency medical service (EMS) systems. Also, the paper informs policy-making by providing insights into the impact of innovative practices and infrastructure on healthcare performance and how these factors can mitigate future crises' impact on healthcare systems. The healthcare industry needs ideas and strategies as the Covid-19 pandemic grips the world. These strategies will help the industry deal with the unstable and continuously changing environment.

## 1. INTRODUCTION

The novel Coronavirus SARS-CoV-2 (COVID-19) pandemic began in Wuhan (China) in December 2019 and spread worldwide; the COVID-19 pandemic has severely affected the world, killed thousands of people and generated a global economic catastrophe [1]. Performance management is important for healthcare because it aligns training initiatives and employee performance with business goals. Managing the performance of healthcare professionals will allow organizations to improve the processes around healthcare customer service, upskilling employees, and compliance [2]. The Covid-19 pandemic has brought enormous pressure to the global healthcare system. First, this unrivaled situation poses a significant challenge to the safety of healthcare workers who face a major risk of getting infected while providing care for confirmed or suspected Covid-19 cases.

With the surge of critically ill Covid-19 patients who need hospital care, hospital resources are intensely depleted. There is a massive demand for infrastructure such as personal protective equipment (PPEs), ventilators, intensive care unit (ICU) beds, disinfectants, and many other vital resources. Likewise, adequate infrastructure and resources are also vital for developing the capability of healthcare centers to handle operations during pandemics. Moreover, progressive managers and hospitals' capacity to accept the change and transform their operations are also necessary factors that could improve workers' performance and healthcare management [3]. The standard approach has been social distancing and using PPE. In addition, the Covid-19 crisis forced hospitals and healthcare professionals to adopt innovative technology solutions for their daily patient care. Some innovative

technological approaches are used to protect healthcare professionals while providing care, such as telemedicine, via phone or the internet, to patients at home without requiring them to visit a clinic and exposing them to the risks of being infected by Covid-19 [4]. Healthcare professionals using technology solutions to assess patients unable to go to the hospital rapidly is another example of the importance of adopting innovative technologies during this crisis. The World Health Organization has emphasized the advantages of using modern medical technologies because of their potential for increasingly easy, time-saving, and maybe more cost-effective doctor-patient interaction [5]. However, it has been argued that telemedicine cannot always be a perfect replacement for conventional face-to-face healthcare [6]. Therefore, the adoption of innovation practices and processes in the midst of the extreme crisis is also considered equally useful and adequate to efficiently manage healthcare operations [7]. Innovation is important in the context of the COVID-19 pandemic for healthcare organizations to adapt to the changing environment and to come up with new solutions to the challenges posed by the pandemic [8].

The self-management of the population and the protection of these patients from the pandemic have greatly benefited, notably in mental health care. With the current pandemic, governments, managers, and experts face a serious problem that tests the limitations of health management systems. Specifically, digitizing data on residents' COVID-19 status has been a valuable tool in halting the pandemic's spread [9]. Better, more affordable healthcare opportunities are made possible by digital healthcare, which also improves the current healthcare system. Telehealth services, together with digital health services, play an essential role in the control of

epidemics. When patients have to be isolated, their healthcare needs must be communicated. Telehealth is a useful resource for meeting patients' physical and mental healthcare requirements everywhere, regardless of proximity. The telemedicine revolution will significantly impact future healthcare delivery [6]. The COVID-19 pandemic has been the greatest risk to public health worldwide since the 1918 flu pandemic. Concerns of utmost importance include capacity for growth in the patient population and medical management planning in the event of an outbreak [10]. Healthcare workers are the primary agents of pandemic management, alongside the development of digital systems, cooperative initiatives, and international cooperation as a form of crisis management. In order to maintain efficient staff management, foster a safe and trusting work environment, and prevent the spread of COVID-19, it is imperative that appropriate procedures be implemented to support healthcare professionals who have been exposed to or infected with the virus. As a result of the epidemic, regular and general health care has been neglected all throughout the world [11].

The biggest challenge hospitals face in pandemic processes is to ensure the uninterrupted operation of the system in the surgery and treatment processes of critical diseases such as cancer [12]. In this conceptual paper, innovative moderates the relationship between the COVID-19 crisis and healthcare performance by allowing healthcare organizations to adapt to the challenges posed by the pandemic. For example, innovative practices such as telemedicine and remote monitoring can allow healthcare organizations to continue providing care to patients while also reducing the risk of transmission [13]. On the other hand, infrastructure moderates the relationship between the COVID-19 crisis and healthcare performance by providing the necessary resources and support for healthcare organizations to respond to the pandemic. Adequate infrastructure, such as a well-functioning supply chain, can help ensure that healthcare organizations have the necessary medical supplies and equipment to treat patients [14].

In the context of Jordan, the evidence from the country show that healthcare organizations that have implemented innovative practices and have adequate infrastructure in place were able to better respond to the challenges posed by the COVID-19 crisis and maintain or even improve their performance. Additionally, the evidence may show that organizations that lacked these moderating factors were more likely to experience a decline in performance. Therefore, this paper conceptually studies the moderation role of innovation and infrastructure in the relationship between covid-19 crisis and healthcare performance in Jordan. The remaining parts of this work are organized as follows. Theoretical connections between the study variables serve as the basis for the subsequent hypothesis and research model. Then, the research variables are conceptualized, accompanied by implications, limitations, and a conclusion. The rest of this paper is organized as follows: Section 2 reviews the theoretical background and the literature on covid-19 crises and their effect on healthcare performance moderated by innovation and infrastructure. Section 3 presents the hypotheses development and empirical review. Section 4 reviews the research model. Section 5 is dedicated to research variables conceptualization. Sections 6,7, and 8 present research implications, limitations, future direction, and conclusion.

## 2. THEORETICAL BACKGROUND

### 2.1 Health care performance

Healthcare performance refers to the effectiveness and efficiency of a healthcare system in delivering quality care to patients [2]. It can be measured by various indicators such as patient outcomes, patient satisfaction, healthcare costs, and access to care. Healthcare performance can be impacted by a variety of factors, including the availability of resources, the quality of healthcare providers, the effectiveness of healthcare policies and practices, and the overall state of the healthcare system [15]. Measuring healthcare performance can be complex and challenging, as it involves assessing multiple dimensions of healthcare delivery, including clinical, organizational, and societal outcomes. Common approaches to gauging healthcare's effectiveness include: The term "patient outcomes" refers to the evaluation of a patient's health after receiving treatment. Mortality, morbidity, and functional status measurements are all good examples. This metric evaluates how content patients are with several aspects of their healthcare experience, such as the competence of their physicians, the adequacy of their treatment, and the comfort of the facilities. The ability of patients to gain access to healthcare services, such as the availability of physicians and the timeliness of care, is evaluated by this indicator. Care expenses, cost-effectiveness, and cost-benefit analyses are just a few of the monetary considerations taken into account by this indicator of healthcare quality [16]. Healthcare performance, as a whole, is a multifaceted notion that is affected by and amenable to measurement via a wide range of indicators. The resource-based view (RBV) perspective suggests that healthcare performance during the COVID-19 pandemic is largely determined by the availability and allocation of resources [17]. According to this perspective, healthcare organizations that have adequate resources, such as personal protective equipment (PPE) and medical supplies, are better able to respond to the pandemic and maintain high levels of performance [18]. The RBV perspective also emphasizes the importance of managing resources effectively. For example, healthcare organizations that are able to quickly adapt to changing needs, such as shifting from in-person to virtual care, may be better able to maintain performance during the pandemic. Additionally, the RBV perspective highlights the importance of the ability to mobilize resources quickly and efficiently. Healthcare organizations that are able to quickly respond to changes in resource availability, such as shortages of PPE or medical supplies, may be better able to maintain performance during the pandemic [19]. The RBV perspective also suggests that healthcare organizations with a diverse set of resources and capabilities may be more resilient and better able to adapt to the challenges of the pandemic. This includes having a diverse range of healthcare providers, technology and equipment, and a flexible organizational structure. In conclusion, the resource-based view suggests that the performance of healthcare during the COVID-19 pandemic is largely determined by the availability and allocation of resources, and it emphasizes the importance of effectively managing resources, quickly mobilizing resources, and having a diverse set of resources and capabilities for healthcare organizations. In addition, the resource-based view suggests that the performance of healthcare during the pandemic is largely determined by the availability and allocation of resources.

## 2.2 Innovation

Innovation is the process of creating new or improved products, processes, or services. It is a key driver of organizational performance and competitiveness. In the context of the COVID-19 pandemic, innovation can play an important role in healthcare performance [13]. Also, healthcare organizations that are able to quickly develop and implement new treatments or technologies for COVID-19 may be better able to maintain performance during the pandemic [20]. Innovation improved healthcare delivery and patient outcomes. For example, healthcare organizations that adopt telemedicine or other virtual care technologies may be able to provide care to patients more efficiently and effectively. Innovation is used to improve the efficiency of healthcare operations. For example, healthcare organizations that adopt automation or other technology-enabled solutions may be able to reduce costs and improve performance [21]. Healthcare organizations that adopt an evidence-based practice or other quality improvement strategies may be able to improve patient outcomes [22]. The resource-based view (RBV) perspective suggests that innovation is a valuable resource that can impact healthcare performance during the COVID-19 pandemic [23]. According to this perspective, healthcare organizations that have the ability to innovate and create new or improved products, processes, or services are better able to respond to the pandemic and maintain high levels of performance. In the context of the COVID-19 pandemic, innovation can provide healthcare organizations with a competitive advantage by allowing them to develop new treatments or technologies for COVID-19, improve healthcare delivery and patient outcomes through telemedicine or other virtual care technologies, improve the efficiency of healthcare operations through automation, and improve the quality of healthcare services through evidence-based practice or other quality improvement strategies [24]. The RBV perspective also suggests that healthcare organizations with a diverse set of resources and capabilities, including the ability to innovate, maybe more resilient and better able to adapt to the challenges of the pandemic. Additionally, the RBV perspective highlights the importance of managing innovation effectively, as well as the ability to mobilize innovation quickly and efficiently [25]. Healthcare organizations that are able to quickly respond to changes in the environment and adapt to new challenges through innovation may be better able to maintain performance during the pandemic [26]. The resource-based view perspective suggests that innovation is a valuable resource that can impact healthcare performance during the COVID-19 pandemic, and healthcare organizations with the ability to innovate are better able to respond to the pandemic and maintain high levels of performance. This perspective also emphasizes the importance of managing innovation effectively and the ability to mobilize innovation quickly and efficiently.

## 2.3 Infrastructure

Infrastructure refers to the basic physical and organizational structures and facilities that are necessary for the functioning of a society or organization. In the context of healthcare, infrastructure refers to the physical facilities, equipment, and technology that are necessary for the delivery of healthcare services [27]. During the COVID-19 pandemic, healthcare infrastructure is critical for maintaining healthcare

performance. Healthcare organizations with well-developed infrastructure may be better able to respond to the pandemic and maintain high levels of performance [28]. In particular, healthcare organizations that have access to sufficient numbers of hospital beds, ventilators, and other medical equipment may be better able to care for COVID-19 patients and maintain performance. Healthcare organizations with well-developed telemedicine infrastructure may also be better able to provide care to patients remotely and maintain performance. Infrastructure can also play a critical role in the management of the pandemic [14]. For example, healthcare organizations with strong public health infrastructure may be better able to track and contain the spread of COVID-19 [29]. Healthcare infrastructure is critical for maintaining healthcare performance, and healthcare organizations with well-developed infrastructure may be better able to respond to the pandemic and maintain high levels of performance [30]. The resource-based view (RBV) perspective suggests that infrastructure is a valuable resource that can impact healthcare performance during the COVID-19 pandemic [31]. According to this perspective, healthcare organizations that have the ability to access and manage infrastructure effectively are better able to respond to the pandemic and maintain high levels of performance [32]. Healthcare organizations can gain a competitive edge in the context of the COVID-19 pandemic through investments in infrastructure that allow them to: Increase the capacity of healthcare delivery by providing the appropriate number of beds, ventilators, and other medical equipment to treat patients effectively when separated by distance via telemedicine or other forms of virtual healthcare. Technology and digitalization can be used to increase the effectiveness of healthcare processes. Make healthcare better by using evidence-based practice or other methods to enhance the quality [3]. The RBV perspective also suggests that healthcare organizations with a diverse set of resources and capabilities, including access to infrastructure, may be more resilient and better able to adapt to the challenges of the pandemic [33]. Additionally, the RBV perspective highlights the importance of managing infrastructure effectively, as well as the ability to mobilize infrastructure quickly and efficiently. Healthcare organizations that are able to quickly respond to changes in the environment and adapt to new challenges through infrastructure may be better able to maintain performance during the pandemic [34]. Finally, the resource-based view perspective suggests that infrastructure is a valuable resource that can impact healthcare performance during the COVID-19 pandemic, and healthcare organizations with the ability to access and manage infrastructure effectively are better able to respond to the pandemic and maintain high levels of performance. This perspective also emphasizes the importance of managing infrastructure effectively and the ability to mobilize infrastructure quickly and efficiently.

## 3. HYPOTHESES DEVELOPMENT AND EMPIRICAL REVIEW

The COVID-19 pandemic we are experiencing now may be with us for a long time. Thus, this will reintroduce the idea of using building design to lessen the threat of coronavirus and other health problems, both now and in the event of a future outbreak. In addition, the nuclei of the smaller airborne droplets that facilitate the rapid spread of COVID-19 vary in form, and this can be accounted for in the design of buildings

as a means of management [35, 36]. As a result, the term "servicescape" is frequently employed to shed light on the constructed landscape in which service goods are provided [37]. Invoking the theory of conservation of resources, they further investigate whether the resiliency of their employees is enhanced by their supervisors' daily visionary leadership behavior. Sun et al. [38] propose a resource-based framework explaining how individuals' daily COVID-19 intrusive experience affects their mental health status (depression and anxiety) and work performance via its effect on daily psychosocial resource loss and gain. In addition, they present an explanation for how individuals' daily COVID-19 intrusive experience affects their work performance. Because they studied diary data from 139 football players (or soccer players) at 15 professional football clubs over the course of 5 days during the COVID-19 pandemic, their findings provided support for our hypotheses. In addition, the researchers analyzed the data during the pandemic. They make a contribution to the existing body of knowledge by shedding light on the mediating and moderating mechanisms involved in within-person changes in mental health status and work performance during a pandemic, as well as by providing evidence of these variations on a daily basis for the first time. The authors Gebreegziabher et al. [15] assess the trends in the performance of selected mother and child health services within the context of the COVID-19 pandemic (2022). Cross-sectional analyses of the data were performed in Addis Ababa, Ethiopia, by researchers from April through May of 2021. The database of the regular health management information system maintained by the Addis Ababa Health Bureau was examined beginning in July 2019 and continuing through March 2021. The percentages, mean, and standard deviations were calculated. The T-test was performed to examine whether or not there were statistically significant variations in the mean performance of the services. The first eight months of the COVID-19 pandemic saw a large decline in postnatal care visits, new contraceptive users, safe abortion treatment, and the number of children under the age of five who were treated for pneumonia. In the first quarter of 2020, when the COVID-19 pandemic broke out, there were already downward trends in antenatal care first visit rates, new contraceptive acceptors, pentavalent-3 vaccination rates, and the number of children under the age of five who were treated for pneumonia. When a national lockdown was implemented in the second quarter of 2020, these trends accelerated. In the final three months of the national lockdown, between July 2020 and September 2020, demand began to rise for the aforementioned services. Acceptance of contraception and pentavalent-1 immunization both continued to fall until the end of the study period in January–March 2021. This study by Popa et al. [39] examines the impacts of the COVID-19 epidemic on workers' physical and mental health and productivity. They also draw attention to the possibility that health and occupational stress moderate the aforementioned connections. The data was gathered with the help of a questionnaire designed specifically for this purpose. Initial findings from the study indicated that employees' mental and physical health were not negatively impacted by the pandemic. However, workers' general productivity suffered as a result of the pandemic impacts of COVID-19. Insights gained from this research may help businesses and their staff take the best possible precautions against the pandemic's potentially devastating effects. Kurniasih et al. [40] look into the connection between public health center performance and factors including

transformational leadership, organizational citizenship behavior (OCB), employee engagement, and expertise. We employ a quantitative survey design, analyze the results with structural equation modeling (SEM), and process the resulting data with the help of the SmartPLS 3.0 software. The 290 hospital employees who participated in this survey were chosen at random. Online social media platforms are used to disseminate the questionnaire data. The validity, reliability, coefficient of determination, and hypothesis testing are all components of data analysis that lead to a final conclusion. Performance at public health centers is the dependent variable, with knowledge sharing, work motivation, transformational leadership, and organizational citizenship behavior as the independent variables. This research found that workers at public health centers were more motivated by their leaders when they adopted a transformational style of management. Employees' job motivation at public health centers increases after engaging in knowledge sharing, albeit the difference is not statistically significant. Staff performance increases with OCB; however, the benefit is small and not statistically significant. Employee performance is positively impacted by motivation, although the effect is not statistically significant. Examining how job stress, depression, and anxiety are all mediated by one another is the focus of research by Sarfraz et al. [41] (DEP). A Google Forms online structured questionnaire was used to collect information from 489 healthcare facility workers in Pakistan. For this data, we use a structural equation modeling (partial least squares) strategy. The study's findings demonstrated that healthcare professionals' fear of COVID-19, as well as their mental health and financial well-being, significantly and favorably impact their productivity in the workplace. The connection between worry over COVID-19, mental health issues, financial worries, and work performance was modified by mood disorders. This research adds to the existing literature on psychological and mental health by elucidating the unique factors that influence workers' productivity on the job. Hotel workers' health and productivity during the COVID-19 pandemic were studied by Bangwal et al. [37]. The research focused on a LEED-approved hotel in India. Structural equation modeling (SEM) was used to empirically evaluate the hypotheses made to learn more about the possibilities of the hotel's architectural layout. The study found that during the COVID-19 pandemic, the health of employees was the second-most important factor in determining hotel performance. Based on the above evidence, this study proposed the following hypotheses:

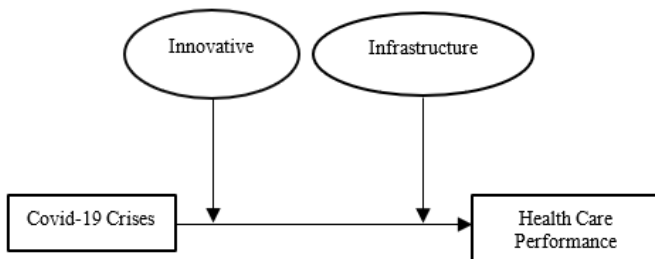
**H<sub>1</sub>:** There is a significant relationship between covid-19 crisis and healthcare performance

**H<sub>2</sub>:** Innovative and Infrastructure moderate the relationship between covid-19 crises and healthcare performance

#### 4. RESEARCH MODEL

The framework shown in Figure 1 below explains the association among the independent variables, moderating variables, and dependent variables, based on what has been mentioned in the previous sections chapter. The following Figure 1 shows the proposed conceptual model of the innovation and infrastructure on the relationship between covid-19 crisis and healthcare performance. This article makes a unique contribution to the literature by analyzing the moderating effects of Innovative and Infrastructure as key

explanatory factors shaping the relationships mentioned. Little attention has been paid to analyzing the moderating effects of Innovative and Infrastructure in the relationship between covid-19 crisis and healthcare performance (and even less in the case of healthcare in Jordan). We used a multiple-moderated regression analysis [42] to test the hypotheses while introducing the moderating effect as a multiplicative variable.



**Figure 1.** Conceptual framework

## 5. RESEARCH VARIABLES CONCEPTUALIZATION

Healthcare performance during the COVID-19 pandemic has been affected by a variety of factors. The pandemic has led to an increase in demand for healthcare services as more people have sought medical attention for COVID-19 and other illnesses [43]. This increased demand for healthcare services can put a strain on healthcare providers and organizations, leading to decreased performance. Additionally, the COVID-19 pandemic has led to disruptions in the supply chain and shortages of personal protective equipment (PPE) and other essential medical supplies. This can lead to difficulty in treating patients and can also lead to decreased performance.

The COVID-19 pandemic may also impact healthcare performance through increased stress and burnout among healthcare workers [44].

It is widely argued in scholarly and practice-oriented literature alike that innovation is a likely outcome of the integration of design, building, financing, operations, and maintenance tasks into a single contract, which incentivizes healthcare to develop innovative solutions for infrastructure needs. The pandemic has led to increased workloads and long hours for healthcare workers, which can lead to physical and mental exhaustion, leading to decreased performance. Moreover, the pandemic has led to a shift in the delivery of healthcare services to more virtual and remote methods, which may have its own set of challenges that may affect performance [45]. Measuring healthcare performance during the pandemic can be complex and challenging, as it involves assessing multiple dimensions of healthcare delivery, including clinical, organizational, and societal outcomes [46]. A number of factors, including increased demand for healthcare services, supply chain disruptions, shortages of critical medical supplies, increased stress and burnout among healthcare workers, and changes in the way healthcare services are delivered, have all had an impact on how well the healthcare system has performed during the COVID-19 pandemic [47].

Innovation and healthcare performance in Jordan during the COVID-19 pandemic are likely to be influenced by several factors. One factor is the availability and allocation of resources for innovation [20]. Healthcare organizations in Jordan that have access to sufficient funding, technology and

equipment, and a skilled workforce may be better able to innovate and maintain high levels of performance during the pandemic. Another factor is the healthcare system infrastructure in Jordan. Healthcare organizations that have a well-developed infrastructure, such as efficient supply chain management and telemedicine services, may be better able to respond to the pandemic and maintain performance [24]. Government policies and regulations play an important role in healthcare performance and innovation during the pandemic [23]. A supportive policy environment that encourages innovation and investment in healthcare can also help to improve healthcare performance in Jordan [48]. Cultural and societal factors are also important, as they may affect the willingness of healthcare organizations and individuals to adopt new technologies and approaches. The societal attitude toward innovation and new technologies can impact the rate of adoption and, therefore, healthcare performance [49]. It is also worth mentioning that the extent to which Jordan's healthcare system was prepared for the pandemic would also play a role in how well it performed during the COVID-19 pandemic [50]. However, innovation and healthcare performance in Jordan during the COVID-19 pandemic are likely to be influenced by several factors, including availability and allocation of resources, healthcare system infrastructure, government policies and regulations, cultural and societal factors, and the preparedness of the healthcare system to handle pandemics.

Both innovation and infrastructure can play a moderating role in the relationship between the COVID-19 crisis and healthcare performance. Together, they can help to mitigate the negative impact of the pandemic on healthcare delivery and management. Innovation can provide new solutions and technologies that can improve the delivery of care and the management of the pandemic, such as telemedicine, digital health tools, diagnostic testing, and treatment. These can help to reduce the spread of the virus, improve access to care, and reduce the overall burden on the healthcare system. Infrastructure, on the other hand, provides the necessary resources and facilities to respond effectively to and manage the pandemic. Adequate infrastructure includes hospitals, healthcare facilities, transportation and communication systems, and supply chains for medical equipment and supplies.

The relationship between infrastructure and healthcare performance in Jordan during the COVID-19 pandemic is likely to be complex and multidimensional [51]. On the one hand, a well-developed healthcare infrastructure in Jordan, such as efficient supply chain management and telemedicine services, may have helped the healthcare system to respond to the pandemic and maintain performance [52]. Additionally, healthcare organizations with access to sufficient numbers of hospital beds, ventilators, and other medical equipment may have been better able to care for COVID-19 patients and maintain performance. On the other hand, the COVID-19 pandemic also highlighted the existing limitations and challenges in Jordan's healthcare infrastructure [53]. For example, the lack of sufficient healthcare facilities, equipment, and medical staff may have hindered the ability of the healthcare system to respond effectively to the pandemic and maintain performance. Additionally, the COVID-19 pandemic also highlighted the importance of investing in public health infrastructure, such as testing and contact tracing, to track and contain the spread of the virus [54]. The inability to invest in such infrastructure could have led to a higher number of cases and deaths during the pandemic. Overall, while a well-

developed healthcare infrastructure in Jordan may have helped to maintain healthcare performance during the COVID-19 pandemic, the pandemic also highlighted the existing limitations and challenges in the country's healthcare infrastructure. However, innovation and infrastructure can moderate the relationship between COVID-19 crises and healthcare performance in the sense that they can either enhance or impede the relationship. For example, innovative strategies and technologies can help healthcare organizations better respond to and manage the impacts of COVID-19, leading to improved performance. On the other hand, a lack of infrastructure, such as inadequate facilities and equipment, can impede the ability of healthcare organizations to respond to and manage the effects of COVID-19, resulting in lower performance. In this way, the level of innovation and infrastructure within a healthcare organization can moderate the relationship between COVID-19 crises and performance.

## 6. RESEARCH IMPLICATION

The theoretical perspective for underpinning the paper's proposed conceptual model is twofold. This study examines the relationship between covid-19 crises and healthcare performance and the moderating role of Innovative and Infrastructure in the relationship between covid-19 crises and healthcare performance based on the RBV. By studying the relationship between COVID-19 crises and healthcare performance, researchers can identify areas of weakness in healthcare systems that need improvement. This can help policymakers and practitioners make informed decisions about where to allocate resources and make changes to better prepare for future crises. Also, by understanding how COVID-19 crises impact healthcare performance, researchers can help healthcare organizations develop more effective strategies for responding to and managing the effects of future crises. Moreover, by identifying how healthcare systems respond to and manage the effects of COVID-19, researchers can help improve public health outcomes. In addition, research in this area can help to improve the understanding of how healthcare systems perform during crises, which can inform the development of new policies, guidelines, and best practices for healthcare organizations. Furthermore, researchers can help healthcare organizations develop more effective strategies for responding to and managing the effects of future crises, which can lead to better patient outcomes. However, the moderating role of innovation and infrastructure on the relationship between COVID-19 crises and healthcare performance provides valuable insights into how healthcare organizations can best respond to the challenges posed by the pandemic. Understanding the ways in which innovation and infrastructure can influence the relationship between COVID-19 and healthcare performance can help healthcare leaders identify areas where they can make strategic changes to improve their organization's response to the crisis. This can include investing in new technologies or systems, developing new processes or procedures, or reorganizing the delivery of healthcare services. Additionally, by understanding the moderating role of these factors, researchers and policymakers can develop recommendations for how healthcare systems can be strengthened to better respond to future crises, which can help to improve overall healthcare performance.

## 7. CONCLUSION

Jordan has experienced a significant impact from the COVID-19 pandemic [55]. The country has implemented strict lockdown measures and widespread testing and has also received assistance from international organizations and countries. However, the healthcare system in Jordan has faced challenges in dealing with the influx of patients, including a shortage of hospital beds and medical equipment. Despite this, the government and healthcare workers have been working to improve the situation and provide necessary care to those affected.

Innovation plays a moderating role in the relationship between the COVID-19 crisis and healthcare performance by providing new solutions and technologies that can improve the delivery of care and the management of the pandemic. For example, telemedicine and digital health tools can help to reduce the spread of the virus by allowing patients to receive care remotely while also improving access to care for those in remote or underserved areas. Additionally, innovations in diagnostic testing and treatment can help to improve the detection and management of COVID-19 cases, as well as reduce the overall burden on the healthcare system. Overall, innovation can help to mitigate the negative impact of the COVID-19 crisis on healthcare performance by providing new ways to deliver care and manage the pandemic. Furthermore, infrastructure can play a moderating role in the relationship between the COVID-19 crisis and healthcare performance by providing the necessary resources and facilities to respond effectively to and manage the pandemic. Adequate infrastructure includes hospitals, healthcare facilities, transportation and communication systems, and supply chains for medical equipment and supplies. Adequate infrastructure can help to reduce the spread of the virus by providing appropriate isolation and quarantine facilities, as well as support the delivery of care by providing enough beds and equipment for patients.

Additionally, infrastructure plays a role in the distribution of vaccines and medications and can help to improve the overall response to the pandemic. Together, innovation and infrastructure can work to improve the overall healthcare performance during the COVID-19 crisis by providing new ways to deliver care and manage the pandemic, as well as the necessary resources and facilities to effectively respond to and control the spread of the virus. Adequate infrastructure and the use of innovative technology can help to improve access to care, reduce the overall burden on the healthcare system, and ultimately save lives. However, it is important to note that the effectiveness of these moderating factors will also depend on the specific context and level of implementation, as well as other factors such as government policies and public compliance.

As conceptual research, this paper focuses on a literature review and therefore does not give empirical evidence to support the findings. Studying the moderating role of innovation and infrastructure on the relationship between COVID-19 crises and healthcare performance can be limited in several ways. One limitation is that it is a conceptual review, which means that it is based on theoretical assumptions and previous research rather than empirical data. Therefore, the findings may not be generalizable to all healthcare systems and settings. Another limitation is that it is specific to the context of Jordan, which may not be applicable to other countries or regions. Additionally, the study may not be able to control for

all potentially confounding variables that may affect the relationship between COVID-19 crises and healthcare performance. Furthermore, the study may not be able to capture the complexities of the relationship and the interactions between different factors that may affect healthcare performance during a crisis such as COVID-19. Nonetheless, this assessment may prompt some activities for empirically testing the testable premises. Determining the moderating effect of innovation and infrastructure on the relationship between covid-19 crisis and healthcare performance in Jordan requires substantial additional research. Additional empirical analyses can be conducted to investigate additional factors. To investigate the moderating effect of innovation and infrastructure on the association between covid-19 crisis and healthcare performance in Jordan, future research may potentially employ an empirical qualitative research approach.

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