

E-Governance and Effective Management of COVID-19 in Saudi Arabia, (in Retail Private Sector an Employees Perspective)

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Abstract:- This study examines the impact of e-governance on managing COVID-19 pandemic within the automotive private sector in Saudi Arabia from the employees' perspective. Using a descriptive analytical approach, data was collected via a questionnaire distributed to a sample of private sector employees. A sample comprised of 365 individuals was gathered from 7 companies operating in the private automotive sector, with a total workforce of 6,000 employees. The results indicate that e-governance played a pivotal role in enhancing governmental operation efficiency, expediting decisions, fostering inter-agency collaboration, and strengthening communication channels with society, which greatly assisted the automotive private sector in efficiently conducting its operations. These improvements were critical in elevating public awareness and enacting effective preventive strategies. Statistically, the Kingdom's e-governance initiatives were reflected in a lower infection rate (9 Per 1000 individuals) and a mortality rate (1%) below the global average (3.47%) as of August 2020. Employees recognized that e-governance facilitated better access to information and services, leading to informed decision-making and improved workplace conditions. Consequently, this supported swift economic recovery aided by financial incentives. The study concludes that e-governance was integral to Saudi Arabia's successful management of the pandemic, marked by the implementation of stringent health measures, the enactment of targeted legislation, and the strategic application of technology across sectors. This reflected positively on the effective management of operations within private sector companies in the automotive industry. This study recommends further development and expansion of e-governance, leveraging advanced technologies and raising awareness to consolidate its role in crisis management. Saudi Arabia's management of the pandemic emerges as a commendable international model, showcasing the efficacious use of e-governance to safeguard community health during a crisis.

Keywords: COVID-19 pandemic, Crisis management, E-governance, Effective management, Saudi Arabia, Private section.

1. Introduction

In the complex landscape of the global situation during 2020, the world grappled with the **COVID-19** pandemic, and the specter of economic lockdown loomed as a persistent threat, a global health crisis that prompted countries to undertake diverse mitigation strategies. Among them, the Kingdom of Saudi Arabia implemented a robust response that integrated electronic governance (**e-governance**) to navigate the crisis effectively. E-governance is defined as the use of information and communication technology by the government sector for the purpose of improving the delivery of information and services, from the government to citizens and residents, and between the government and businesses, as well as among the government's own agencies (**United Nations, 2023**). The private sector in Saudi Arabia, in general, and the automotive sector, in particular, were affected by the repercussions of the crisis, due to the negative impact of the pandemic on the global economic system. Saudi Arabia showcased a commitment to equity, extending care to all sectors by adopting a package of economic aid (**Abu Al-Futuh 2021**). And this has helped the private sector in the automotive industry in managing business effectively and smoothly. Saudi Arabia has worked on enhancing its supply chains and simplifying logistical

procedures to ensure the efficient availability of essential equipment to ensure the continuity of its operations and enhance its ability to serve the community. In a previous study (**Alaga, 2021**), it was pointed out that Saudi legislation did not leave the management of the COVID-19 pandemic to discretion. Therefore, the legislations enacted by the Ministry of Interior during that period, including the regulation of curfew exemptions for those whose work conditions in the private sector require movement during the curfew period. It had a significant impact on supporting the management of private sector businesses during that period in general, and the automotive sector in particular. During the global health crisis, there was a significant increase in digital activity within the retail sector of Saudi Arabia. E-governance played a crucial role in simplifying procedures by implementing digital measures, serving as a lifeline for economic activities amidst uncertain circumstances (**Allam et al., 2021**). Both large corporations and individual business owners shifted their operations online through various platforms and websites, allowing for contactless transactions while adhering to lockdown regulations. However, some workers experienced difficulties navigating this sudden shift to digital platforms, finding it challenging to adapt to unfamiliar territory. (**Roztocki et al. 2023**) Nevertheless, e-governance effectively managed the disruptive impact of COVID-19 on Saudi Arabia's commercial sector by guiding retailers and ensuring the preservation of jobs and livelihoods. Although some businesses faced challenges in adapting quickly to these changes, those who embraced the digital transformation successfully continued serving customers without compromising the safety of their employees or clients. This essay aims to explore how e-governance has influenced and overcome the obstacles posed by COVID-19 from the perspective of retail staff. Additionally, we will examine worker viewpoints and discuss the implications for crisis management. Through this analysis, we hope to shed light on the pivotal role that e-governance has played in guiding Saudi Arabia's retail industry through the turbulent seas of COVID-19.

Overall, the effective management of COVID-19 outbreak through implementing e-governance principles, in addition to the economic aid announced by Saudi Arabia to support the private sector, has contributed to reducing the risk of the COVID-19 pandemic and its associated negative impacts.

2. Importance of the Study

COVID-19 pandemic is considered one of the major events that has had a significant impact on the world, including the Kingdom of Saudi Arabia. The pandemic has presented significant challenges to both governments and the private sector, requiring swift and effective measures to mitigate the spread of the virus and protect public health. In this context, electronic governance (**E-governance**) has played a crucial role in managing COVID-19 pandemic in Saudi Arabia. Since it has profound implications for the stability of the business environment. (**Al-Mutairi, 2020**) It has facilitated communication and collaboration between government entities and the private sector, provided necessary information and data for decision-making, and delivered services to citizens and residents. The importance of the study lies in investigating the role of e-governance in the effective management of COVID-19 pandemic from the perspective of employees in the private sector in Saudi Arabia. E- governance is the cornerstone of well-functioning organizations, (**Roztocki et al, 2023**) It sheds light on one of the most significant challenges faced by the Kingdom during the pandemic and provides an assessment of the role of e-governance in addressing it. The study aims to achieve several objectives, including:

- Understanding the role of E-governance in managing COVID-19 pandemic in Saudi Arabia from the perspective of private sector employees.
- Identifying the challenges associated with the use of E-governance in crisis management.
- Providing recommendations to enhance the utilization of E-governance in crisis management.

Furthermore, the study holds a great importance for government entities and the private sector in Saudi Arabia, as it can:

1. Improve crisis management in the future.
2. Enhance collaboration between government entities and the private sector.
3. Provide the necessary information and data for decision-making.

4. Deliver services to citizens and residents more efficiently and effectively.

The hypotheses that can be tested in the study:

1. E-governance has facilitated communication and collaboration between government entities and the private sector in managing the COVID-19 pandemic.
2. E-governance has assisted in providing the information and data necessary for decision-making in the management of the COVID-19 pandemic.
3. E-governance has aided in delivering services to citizens and residents more efficiently and effectively in the management of the COVID-19 pandemic. By addressing the study's objectives, this research can make a meaningful contribution towards building resilient, accountable, and transparent business environments in an era of crisis

3. Objectives of the Study:

The primary objectives of this research are centered around comprehensively understanding the pivotal role of e-governance in the landscape of the private sector during COVID-19 pandemic in Saudi Arabia. This study is specifically designed to address several crucial objectives that collectively contribute to a holistic understanding of the impact and significance of e-governance in this context. Foremost, this research aims to deeply examine the multifaceted contribution of e-governance in the realm of the private sector in Saudi Arabia. It aims to delve into the mechanisms and methodologies that e-governance employs to effectively manage the business in the private sector during COVID-19

The objective of the study as follows:

1. Identifying effects of e-governance on the effective management of COVID-19 pandemic in Saudi Arabia, from the perspective of the private automotive sector.
2. Evaluating the extent to which e-governance contributes to enhancing transparency and efficiency in government operations, improving communication between government entities and private sector, reducing costs, and enhancing operational efficiency.
3. Providing recommendations to strengthen the role of e-governance in managing future health crises.

Based on these objectives, an analytical study of previous literature will be conducted about the role of e-governance in managing COVID-19 pandemic and a field study of the private automotive sector in Saudi Arabia.

The questions that can help to achieve the research objectives:

1. What are the primary effects of implementing e-governance on the effective management of the COVID-19 pandemic in Saudi Arabia, from the perspective of the private automotive sector?
2. How e-governance contributed to enhancing transparency and efficiency in government operations?
3. How e-governance contributed to improving communication between government entities and the private sector?
4. How e-governance contributed to reducing costs and enhancing operational efficiency?

Through these objectives, the research aspires to provide actionable insights that contribute not only to the academic discourse but also to the enhancement of practical strategies in the effective management of the crisis, thereby fostering a more resilient and trustworthy in the private sector environment in Saudi Arabia.

4. Study Questions:

The research endeavors to address the following pivotal study questions, which serve as the compass guiding the exploration into the intricate role of e-governance on the effective management of COVID-19 in the private sector in Saudi Arabia. Based on this and considering the issues previously discussed in the research problem, the following question has been posed:

Q. What is the impact of e-governance on the effective management of the COVID-19 pandemic in Saudi Arabia from the perspective of the private automotive sector?

This question delves into the proactive measures undertaken by e-governance to handle, maintain, the COVID-19 pandemic. From the perspective of the private automotive sector. By examining their strategies, techniques, and methodologies, the research aims to uncover the specific ways in which their expertise contributes to mitigating the effect of pandemic risks within private sector settings. Numerous subsidiary questions can arise from the main question, contributing to answering the main question and achieving the research objectives. These questions might include:

Q1. In what areas did e-governance contribute to the effective management of the COVID-19 pandemic in the automotive sector in Saudi Arabia?

This question directs the focus toward the influence of e-governance to the effective management of COVID-19 pandemic in automotive sector in Saudi Arabia.

Q2. What mechanisms were used to implement e-governance in the automotive sector in Saudi Arabia during the COVID-19 pandemic?

This question aims to clarify that the automotive sector in Saudi Arabia underwent during the COVID-19 pandemic, a transformation in its governance mechanisms, embracing electronic governance to adapt to the challenging circumstances. This shift aimed to facilitate remote decision-making, enhance internal controls, and improve overall transparency within automotive organizations. The implementation of e- governance mechanisms played a crucial role in ensuring business continuity and ethical operations within the industry during the pandemic."

Q3. What are the challenges were faced in implementing e- governance in the automotive sector in Saudi Arabia during the COVID-19 pandemic?

This question aims to identify the challenges faced in implementing e-governance in the automotive sector in Saudi Arabia during the COVID-19 pandemic. By understanding these challenges, policymakers and leaders can develop strategies to overcome them and ensure the successful implementation of e-governance in the private sector.

Q4. What are the recommendations for enhancing the role of electronic governance in crisis management in the automotive sector in Saudi Arabia?

The question aims to provide recommendations for enhancing the role of electronic governance in crisis management in the automotive sector in Saudi Arabia. By identifying key areas for improvement and proposing practical solutions, this question seeks to contribute to a more resilient and responsive crisis management framework within the private sector. Which provide valuable insights for policymakers, leaders, and crisis management experts to enhance the effectiveness of e-governance in crisis management and build a more resilient automotive sector in Saudi Arabia. By addressing these questions, the research aims to uncover insights that contribute not only to theoretical knowledge but also to the practical enhancement of crisis management strategies within the private sector entities.

5. Previous Study and Theoretical Framework:

The foundation of any scholarly inquiry lies in the existing body of knowledge that has paved the way for deeper exploration. This section undertakes the critical task of delving into previous studies and constructing a robust theoretical framework. By analyzing prior research and integrating established theories, this research might establish a solid platform from which to unravel the complex dynamics between e-governance and management of crisis, the pivotal role of e-governance, and their profound impact on the effective management of COVID-19 in automotive private sector in Saudi Arabia.

6. Historical Context and Significance:

The historical context forms an essential backdrop against which the significance of e-governance and its role can be understood. COVID-19 stands as an indelible testament to the far-reaching consequences on business within both the government and private sector. (Al-Mutairi, 2022) do meticulously analyze the COVID-19 Pandemic revealing the catastrophic outcomes that raised. to answer the question about the electronic services provided by Saudi Arabia to limit the spread of the coronavirus, (Al-Ruwaithi, 2021) highlighted that Saudi Arabia offered a diverse range of electronic. services to mitigate the spread of the coronavirus. such as following:

1. **Tawakkalna Application”** which became a pivotal for access to public places and health status monitoring. underscores the government-to-citizen (G2C) facet of e-governance, emphasizing interactive service delivery.
2. **Sehhaty Application”** It exemplifies the Government to Citizen (G2C) initiative, aiming to streamline health communication.

Electronic Governance as an Entry Point in Health Crisis Management - Digital Response to the Coronavirus Pandemic (Mohammad, Omar, 2022)

The study examines the pivotal function of electronic governance (e-governance) in effectively managing health crises, particularly in the midst of the COVID-19 pandemic. It contends that e-governance serves as a valuable avenue for implementing efficient digital strategies to address health emergencies. The study concludes by underscoring the necessity of ongoing investment in e-governance infrastructure and capacity development. By establishing robust e-governance systems, governments can enhance their preparedness to effectively respond to future health crises. Ultimately, this study offers valuable insights into the potential of e-governance to enhance health crisis management. Through leveraging digital technologies and promoting transparency and inclusivity, e-governance can play a critical role in safeguarding public health and fostering a more resilient society. Additionally, it focuses on the role of national governments in implementing e-governance. Further research assessing the benefits of e-governance within the private sector would be advantageous. Furthermore, considering that this study primarily relies on qualitative evidence without quantitative analysis, conducting additional research to quantify the advantages of e-governance would be beneficial.

The Guiding Manual for Business Continuity in Government Entities (Saudi Digital Government Authority- 2022)

The Governor of the Digital Government Authority, an esteemed official, clarified that the guide allows government entities to confront incidents and crises and recover from disasters in order to achieve resilience and sustainability in the execution of governmental tasks. Its purpose is to offer Saudi Arabian government agencies a thorough structure for creating and executing efficient business continuity management (BCM) plans. The manual's goals include providing Saudi Arabian government agencies with a comprehensive framework for developing and implementing effective BCM plans, as well as imparting knowledge and comprehension of applying business continuity management standards for digital government in these agencies, thereby reducing the likelihood or impact of service disruptions. Additionally, it aims to enhance coordination among governmental entities and strengthen their ability to adapt and overcome challenges on a national level.

The impact of remote work on job performance during the COVID-19 pandemic: A field study on the employees of the Education Administration in Bisha. (Al-Ghamdi, 2023)

The study revealed the existence of a statistically significant impact of remote work during the spread of the COVID-19 pandemic on employees' job performance, as well as a positive effect of government initiatives for remote work. sector. This study focuses on evaluating the impact of remote work on the job performance of employees at the Bisha Education Administration during the COVID-19 pandemic. The researchers used a descriptive analytical approach to study the relationship between remote work as an independent variable and job performance as a dependent variable. The study covered various aspects such as employees' knowledge of remote work, the availability of technical and informational requirements, and government incentives and initiatives. The results of the study showed a statistically significant positive impact of remote work on the employees' job

performance. The study also included recommendations such as the need for continuous development of remote work, organizing work flows electronically, and greater use of electronic communication. However, this study heavily relied on the education sector.

The Kingdom and the COVID-19 Pandemic (A Unique Model in Crisis Management -2021)

The report indicated that the measures undertaken by Saudi Arabia in response to the COVID-19 crisis had a positive impact on effectively controlling the pandemic. This approach was also marked by cooperation among the government, private sector, and charitable organizations, as well as support for international initiatives led by entities such as the World Health Organization to stop the spread of the virus, contain it, and ultimately eradicate it with divine guidance. The global outbreak of COVID-19 has presented nations with unparalleled difficulties that necessitate efficient strategies for crisis management. The Kingdom of Saudi Arabia serves as an exemplary case study due to its distinctive approach in addressing the challenges posed by the pandemic. This article examines Saudi Arabia's exceptional model for managing the COVID-19 crisis.

Remote Work During the COVID-19 Crisis: A Perspective from Public Sector Employees in the Kingdom of Saudi Arabia: Challenges and Solutions (Al-Ghamdi et al, 2023)

The study concluded that there were positive results for remote work, given the availability of remote work requirements such as computers. The efforts of the Kingdom of Saudi Arabia during the COVID-19 crisis had a significant impact in mitigating the severity of the crisis, and those efforts helped provide mechanisms for remote work.

This research paper explores the experiences of public sector employees in Saudi Arabia with remote work during the COVID-19 crisis. It focuses on the challenges they faced, the solutions they implemented, and their overall perspectives on this new working arrangement.

This study is based on a relatively small sample size and may not be representative of all public sector employees in Saudi Arabia. The long-term impact of remote work on public sector employees is still unknown and requires further research.

Overall, this research provides valuable insights into the experiences of public sector employees in Saudi Arabia with remote work during the COVID-19 crisis. It highlights both the challenges and opportunities associated with this new way of working and provides recommendations for how employers can create a more supportive and productive remote work environment.

The Role of E-Governance in Enhancing Economic Security (Almutairi, 2020)

The study revealed that e-governance has facilitated procedures for beneficiaries of government services. It also emphasized the importance of training government employees in the fields of e-governance and electronic monitoring, as this is one of the challenges facing the implementation of e-governance. This research paper explores the potential of e-governance to contribute to economic security. E-governance refers to the use of information and communication technologies (ICTs) to improve the efficiency and effectiveness of government services. It has the potential to create a more transparent, accountable, and responsive government, which can be a key driver of economic growth and development. Almutairi's paper argues that e-governance can enhance economic security in several ways:

Improved Transparency and Accountability: E-governance can help to make government operations more transparent by providing citizens with access to information about government activities and policies. This transparency can lead to increased public trust in government and encourage investment.

Increased Efficiency and Effectiveness: E-governance can improve the efficiency and effectiveness of government services by streamlining processes and reducing bureaucracy. This can lead to faster delivery of services and lower costs for businesses and individuals. Overall, the study provides a valuable contribution to the understanding of the role of e-governance in promoting economic security. It highlights the potential benefits of e-governance and identifies key challenges that need to be addressed. By taking these challenges into account and

implementing e-governance in a strategic and well-planned manner, governments can unlock the potential of this powerful tool to create a more prosperous and secure future for their citizens.

The Reality of Implementing E-Governance in Jordanian Public Universities and Its Relationship with Administrative Empowerment of Faculty Members: A Perspective from Faculty Members (Al Raai, Abu Al-Ala, 2022)

The study indicated that the degree of implementation of electronic governance and administrative empowerment among faculty members at government universities in Jordan, as perceived by them, was moderate. However, it suggested that universities should adopt electronic governance as a continuous development strategy. The main findings revealed that the level of e-governance implementation in public universities in Jordan was moderate. While certain institutions had made progress, others still had considerable progress to make. Additionally, the study identified a positive correlation between the level of e-governance implementation and the level of administrative empowerment experienced by faculty members. In other words, universities with more advanced e-governance systems tended to have faculty members who felt more empowered in their positions. In general, the study emphasizes the significance of incorporating e-governance in a manner that provides faculty members with authority. By adhering to the suggested guidelines mentioned previously, public universities in Jordan can utilize e-governance as a means to establish a more streamlined and productive administrative atmosphere that instills a sense of worth and empowerment among faculty members.

Factors influencing decision making for implementing e-health in light of the COVID-19 outbreak in Gulf Cooperation Council countries (Al-Anezi, 2022)

The study examines the primary factors that impact decision making in the implementation of e-health strategies in Gulf Cooperation Council (GCC) countries during the COVID-19 pandemic. A survey was conducted among healthcare professionals to identify the influential factors in e-health adoption, including strategic, quality, management, technological, economic, and sociocultural aspects. The findings can assist decision makers in effectively implementing e-health approaches. By relying on telemedicine, mobile health, online consultation, and remote monitoring, healthcare services can be alleviated, and support can be provided to patients with chronic illnesses. The study reveals that decision making regarding e-health is a complex process necessitating consideration of numerous factors. Furthermore, attention should be given to sociocultural and demographic elements when enhancing healthcare accessibility during the COVID-19 crisis. This study offers valuable insights for policymakers and stakeholders within the GCC region who are contemplating the introduction or expansion of e-health initiatives. By comprehending the key determinants influencing decision-making processes, these stakeholders can develop more efficient strategies for implementing e-health solutions tailored to their specific needs and priorities. Moreover, this study emphasizes the necessity for a comprehensive and multi-faceted approach to implementing e-health systems. This approach should not only consider technology and resources but also encompass strategic goals, quality standards, and sociocultural aspects. In conclusion, this study sheds light on the intricate decision-making processes involved in implementing e-health solutions within GCC during the COVID-19 pandemic. It provides valuable insights for regional stakeholders while contributing to our overall understanding of e-health adoption within a rapidly evolving healthcare landscape.

The Impact of the COVID-19 Pandemic on the Performance of Financial Technology Companies and Stock Exchange Payment Services: A Case Study of FORI Fintech and Electronic Payment Services Company (Wahdan, 2022)

The study emphasized the impact of the coronavirus on companies involved in electronic payments, stressing the necessity for regulatory measures to ensure the efficient functioning of such services. The COVID-19 pandemic resulted in a noteworthy surge in demand for financial technology (fintech) services, particularly contactless payment solutions and online banking platforms. This was driven by social distancing protocols and the need for convenient and secure financial transactions. The pandemic expedited the adoption of digital payment solutions, leading to heightened awareness and an expanded user base for FORI's services. However, it is important to note that this case study focuses on one specific company within a particular context, so its findings may not be universally applicable to all fintech firms or other regions. Moreover, the study's methodology is not explicitly

disclosed, which makes it challenging to evaluate the validity and reliability of its conclusions. Nonetheless, overall, this study offers valuable insights into how resilient and adaptable fintech companies can be when confronted with crises. It highlights the potential role that the fintech industry can play in shaping the future landscape of financial services.

Cybersecurity Risks: The New Threat to Financial Stability (Elliot, Jenkins, 2022)

The frequency of cyberattacks has tripled in the last ten years, as our reliance on digital financial services continues to grow. The financial sector remains the primary target for these attacks. It is clear that cybersecurity now poses a significant threat to the stability of the financial industry. The recognition of this threat is increasing, as it becomes more apparent that the financial system's vulnerability and reliance on technology make it susceptible to cyberattacks. These attacks have the potential to disrupt operations, erode trust, and result in substantial financial losses. In conclusion, urgent action is necessary to address the escalating risk of cyberattacks on financial institutions. By implementing recommended security measures, these institutions can safeguard themselves and the overall financial system from such threats.

Potential risks associated with cyberattacks and data breaches include:

According to the official website of the International Monetary fund, cyberattacks and data breaches can lead to several potential risks. It has been noted that cyberattacks have tripled over the past decade due to increased reliance on digital financial services. In today's interconnected financial and technological world, any successful attack on a financial institution or system used by many can quickly have widespread consequences, resulting in significant damage. For example:

Economic Damage: Cyberattacks can disrupt economic activities by causing downtime, loss of revenue, and increased operational costs. Organizations may incur substantial financial losses as a result.

Data Leakage: When data is compromised, sensitive information can be leaked or exposed to unauthorized individuals or entities. This can harm individuals, businesses, and even government agencies, potentially leading to financial losses and reputational damage.

Social Disruption: Large-scale cyberattacks or data breaches can create social unrest and panic. They can erode public trust in digital services and institutions, leading to fear and uncertainty in society.

The Experience of the Kingdom of Saudi Arabia in Facing the Coronavirus Pandemic (Al-Ruwaithi, 2021)

The COVID-19 pandemic had a significant effect on addressing the technological, economic, and healthcare aspects. Furthermore, the leadership's support and implementation of necessary regulatory frameworks played a supportive role in confronting the pandemic. This was further influenced by Saudi Arabia's experience in dealing with epidemics during the Hajj and Umrah seasons, including the SARS epidemic and related viruses. However, it is important to note that this study did not examine the impact of e-governance on the private sector in Saudi Arabia.

Saudi Arabia's experience with COVID-19 offers valuable insights for other countries facing similar challenges. Despite the difficulties posed by the pandemic, proactive measures, an effective healthcare system, and strong leadership contributed to Saudi Arabia's success in controlling the virus and mitigating its impact. By learning from this experience and continuing to invest in public health preparedness, Saudi Arabia can enhance its readiness to face future pandemics. The aforementioned paper can provide more detailed insights and specific data regarding various aspects of COVID-19's impact on Saudi Arabia. Further analysis may be needed to understand specific challenges and successes experienced by different sectors and populations.

Confronting Criminal Law in the Kingdom of Saudi Arabia during the COVID-19 Pandemic (Al-Aga, 2021)

The report highlighted that the Saudi legislator did not leave the response to the COVID-19 pandemic up to individual discretion. Instead, prompt royal decrees were issued to authorize the Minister of Interior in implementing preventative measures to combat the pandemic. As a result, decisions were made to classify certain actions as criminal offenses and impose penalties for them.

The effectiveness of these changes in criminal law regarding pandemic-related crimes is still a topic of debate. Although data indicates a decline in certain crimes, concerns persist about potential overreach and the long-term impact on civil liberties.

The alterations made during the pandemic have raised inquiries about potential lasting shifts in Saudi Arabia's criminal law. Ongoing analysis is necessary to evaluate how these changes affect due process, the state-citizen relationship, and overall direction of the criminal justice system.

The Saudi Arabian government had to make changes to its criminal law system in response to the unprecedented challenges posed by the COVID-19 pandemic. While some of these modifications may have positive effects on public health, there are concerns about their impact on individual rights and fair treatment. It is crucial to engage in thorough inquiry and dialogue to ensure that the criminal law system effectively protects public safety while respecting fundamental rights and freedoms. To fully understand the implications of these changes, a detailed examination of specific legal provisions, case studies, and crime rate data would be necessary.

The role of e-government in disaster management: A review of the literature (Roztocki et al, 2023)

This study has the potential to assist other researchers in guiding their endeavors towards further exploration, and it can aid individuals engaged in real-life disaster management in effectively utilizing e-government. It is important to note that our inclusion criteria were met by only 36 research papers, which serves as a main limitation. E-government holds the capability to greatly enhance disaster management efforts by improving communication, coordination, resource allocation, and citizen engagement. However, unlocking this potential necessitates addressing technological constraints, promoting digital literacy, ensuring data privacy and security, and establishing public trust. By overcoming these obstacles, e-government can play a crucial role in cultivating more resilient communities and mitigating the impact of disasters. In summary, the analysis of literature emphasizes the promising potential of e-government in enhancing disaster management efforts. Through tackling current challenges and investing in further research, e-government can become an invaluable tool for building a more resilient future.

The Influence of Trustworthiness and Technology Acceptance Factors on the Adoption of E-Government Services during the COVID-19 Pandemic (Balaskas, et al. 2022)

The global objective for governments is the implementation of e-government to deliver public services. This aim includes enhancing citizen-government interaction and ensuring service quality while maintaining security. This particular study focuses on the service sector, making it difficult to apply the findings universally across all sectors. The research examines the factors that impact the acceptance of e-government services during the COVID-19 pandemic, with a specific emphasis on trustworthiness and technology acceptance. Governments should prioritize establishing trust in e-government services by safeguarding data security, user privacy, and promoting transparency. Additionally, these services should be tailored to address the distinct requirements and priorities of citizens during times of crisis. It is important to note that due to cultural, technological, and socio-economic variations between contexts, this study's conclusions may not be applicable universally. In conclusion, this research emphasizes the crucial role played by trustworthiness and technology acceptance in driving the adoption of e-government services. By effectively addressing these factors and adapting to evolving demands, governments can utilize e-government technologies for improved service provision, increased citizen engagement, and development of more resilient communities.

The role of e-Government in overcoming the consequences of the COVID-19 pandemic in Nigeria (Ukwuoma et al, 2022)

The study examines how the implementation of e-government in Nigeria can help address the consequences of the COVID-19 pandemic. It highlights the challenges faced by e-government in Nigeria during this pandemic and suggests ways to strengthen e-government through enhancements in **(Information and Communication Technologies)** ICT infrastructure, workforce development, and data security. E-governance promotes reduced corruption, increased transparency, improved efficiency, and decreased governance costs. The COVID-19 pandemic has prompted both public and private institutions to embrace digital communication methods. E-

governance has proven successful by promoting interoperability among government ministries, departments, and agencies. However, it is important to note that the geographical limitations of this study conducted in Nigeria may restrict the generalizability of its findings to other countries. E-government has a crucial role to play in Nigeria's recovery from the COVID-19 crisis and in establishing a more resilient and inclusive future. By addressing existing challenges and capitalizing on opportunities presented by e-government, Nigeria can enhance its governance practices, improve service delivery, and empower its citizens. Ongoing research and evaluation are necessary to fully comprehend the long-term impact of e-government on development and identify areas for improvement. Successful implementation of e-government requires collaboration between governments, private sectors, and civil society organizations to ensure equitable access to its benefits.

Coordinating Decision-Making in Data Management Activities: A Systematic Review of Data Governance Principles (Brous et al, 2017)

The study explores the importance of data governance principles in coordinating decision-making related to data management activities. It aims to fill the gap in existing research focusing primarily on data governance structures and provides a theoretical foundation for effective data governance practices. Moreover, it provides a systematic review of literature on data governance and identifies four key principles of data governance for public organizations: organization, alignment, compliance, and common understanding. It discusses each principle and argues that while data governance is important, there is no single approach, and it must be tailored to each organization. Data governance provides both direct and indirect benefits. Direct benefits of data governance for business processes can be linked to efficiency improvements, an increase in revenue and market share, reduced risk and a reduction in costs incurred. Data governance also provides the framework for addressing complex issues such as improving data quality or developing a single view of the customer at an enterprise level. However, the review focuses on existing literature and does not present empirical findings. Overall, the paper offers valuable insights into the essential role of data governance principles in coordinating decision-making and ensuring effective data management. By applying these principles, organizations can improve data quality, transparency, and accessibility, ultimately leading to better decision-making and increased value creation.

The Utilization of E-Government Public Service for Improving Public Capability and Accessibility During the Covid-19 Pandemic (Wahanisa et al, 2021)

The study examines the utilization of e-government public services in Indonesia amid the COVID-19 pandemic with the aim to enhance accessibility for the general public. It explores the objectives and fundamental principles of e-government, as well as challenges that emerge during its implementation, such as insufficient infrastructure, limited understanding among officials and villagers, and difficulties accessing services in rural areas. Electronic Government refers to the provision of information and public services, business affairs, government services, and information technology devices. The COVID-19 pandemic has underscored the imperative for efficient and accessible public services. E-government has emerged as a pivotal tool in addressing this challenge by offering numerous advantages for both citizens and governments.

E-government services facilitate round-the-clock access to crucial services, eliminating the need for physical travel and long waiting times - particularly significant during lockdowns and social distancing measures. Users can conveniently access these services from their own homes, thereby saving time and resources. Online applications and forms simplify intricate procedures, making it easier for citizens to engage with governmental entities. E-government platforms can provide real-time updates on government policies, initiatives, and public announcements - bolstering transparency and communication between citizens and their government. By fostering continuous research and development efforts, e-government has the potential to revolutionize how governments interact with their constituents - leading to a promising future that is more inclusive for all.

Factors influencing consumer behavior towards online shopping in Saudi Arabia Amid COVID-19 Implications for e-businesses post pandemic (Al Hamli et al, 2023)

The results showed three factors, including the product variety factor, payment method factor, and psychology factor, have a significant impact on consumers purchasing on e-commerce platforms, while the other two factors

were insignificant. Understanding the factors influencing consumer behavior towards online shopping in Saudi Arabia during the pandemic provides valuable insights for e-businesses planning for the post-pandemic era. By focusing on customer-centric strategies, adapting to new trends, and leveraging data-driven insights, e-businesses can ensure long-term success in the rapidly evolving digital landscape. Implications for E-Businesses Post-Pandemic may include adapting to changing trends such as investing in mobile-first experiences and integrating AI-powered solutions will enhance the customer journey in addition to continuous adaptation to evolving consumer preferences is crucial for long-term success.

7. Lessons from Past Studies

A wide range of research has generated valuable insights into various aspects of e-governance and its impact on the effectiveness of management during COVID19. **(Balaskas, et al. 2022)** The pandemic has presented numerous challenges for governments and businesses globally, requiring innovative approaches to effectively manage its impact. By leveraging digital platforms and online communication channels, organizations have been able to maintain business operations, ensure employee safety, and adapt to changing market conditions. In addition, data analytics has provided valuable insights for decision-makers, enabling them to identify emerging trends and allocate resources efficiently. **(Al-Ruwaithi, 2021)** However, the successful implementation of e-governance in the private sector requires careful consideration of various factors. These include ensuring robust digital infrastructure, promoting digital literacy among employees, addressing privacy and security concerns, and fostering collaboration between the public and private sectors. In conclusion, the lessons learned from the past studies highlight the transformative potential of e-governance in the effective management of COVID-19 in the Saudi Arabian private sector **(Elliot, Jenkins, 2022)**. By embracing strategies and digital tools, economic entities can navigate the challenges posed by the pandemic and emerge stronger. However, it is important to address the associated challenges and create an enabling environment for the successful implementation of e-governance initiatives.

8. Theoretical Underpinnings

At the heart of this research lies a comprehensive theoretical framework that spans multiple disciplines. By drawing on relevant theoretical frameworks, this study seeks to contribute to a deeper understanding of how e-governance can empower employees and enhance their ability to navigate the challenges presented by the pandemic. The research will be guided by the following theoretical underpinnings:

1. **Technology:** This posits that employees' acceptance and adoption of e-governance technologies are influenced by perceived usefulness and ease of use. **Saudi Data and Artificial Intelligence Authority (SDAIA)** has played a significant role in providing the necessary data to enable the implementation of artificial intelligence technologies across various entities. They launched the "**Tawakkalna**" and "**Tabaud**" applications, highlighting the importance of research and development in the field of technology and artificial intelligence.
2. **Social Exchange Theory:** This theory emphasizes the importance of reciprocal relationships and exchanges between individuals and organizations. The report initiated by **Saudi Press Agency** indicated that the proactive approach adopted by Saudi Arabia in dealing with the COVID-19 crisis had a positive impact on the effective management of the pandemic. This approach was also characterized by an integration between the government, private, and voluntary sectors, as well as supporting the efforts of countries and international organizations, especially the World Health Organization, to stop the spread of the virus, contain it, and then eradicate it, Allah willing.
3. **Psychological empowerment:** This theory suggests that employees' sense of psychological empowerment, which includes feelings of competence, autonomy, and impact, can significantly impact their motivation, job satisfaction, and overall well-being. **(Al-Ghamdi et al, 2023)** The study concluded that there were positive results for remote work, given the availability of remote work requirements such as computers. The efforts of the Kingdom of Saudi Arabia during the COVID-19 crisis had a significant impact on mitigating the severity of the crisis, and those efforts helped provide mechanisms for remote work.

9. Synthesis and Gaps:

While previous studies have cast an illuminating light on various facets of e-governance and the pivotal role of effective management during the crisis, gaps remain within the terrain of research. In particular, limited understanding of employee resistance. While existing research has highlighted the positive impact of e-governance on employee engagement, there is a gap in understanding the factors that may lead to employee resistance to e-governance initiatives. Further research is needed to explore the barriers and challenges that employees may face in adopting and utilizing e-governance tools, as well as strategies to overcome resistance. (Abdel Hadi, Al-Ghamdi, 2023) The study revealed how cultural norms, organizational structures, and government policies shape the implementation and effectiveness of e-governance initiatives from the employees' perspective. Existing studies have shown that e-governance tools can positively impact employee engagement during the COVID-19 pandemic. (Al-Mutairi, 2022). By providing employees with improved access to information, enhanced communication channels, and opportunities for collaboration, e-governance enables employees to contribute actively to the management of the crisis. This empowers employees, increases their sense of ownership, and fosters a culture of resilience within organizations. Moreover, E-governance facilitates organizational learning by providing a platform for knowledge sharing, collaboration, and adaptability. (Unified National Platform), which Acting as a comprehensive portal, by integrated 95 applications from 19 government sectors through e-governance tools, employees can access and exchange information, learn from best practices, and collaborate across departments and teams. This promotes organizational agility and the ability to respond effectively to the dynamic challenges posed by COVID-19.

10. The Pillar of crisis management Theory:

Central to the architecture of this study is the tenet of Crisis management theory. As expounded by Fink (1986) "Crisis Management: Planning for the Inevitable" which helps organizations identify and classify different types of crises based on their origin, nature, and impact. Coombs (2007) "Protecting Organization Reputations During a Crisis: The Development and Application of Situational Crisis Communication Theory" introduced the situational crisis communication theory, which provides guidelines for organizations to effectively communicate during crises based on the nature of the crisis and its potential reputational impact. (Mitroff and Anagnos, 2000) emphasized the importance of conducting risk assessments and developing crisis management teams. Furthermore, (Boin et al, 2005) "The Politics of Crisis Management" delves into the significant role of crisis management in contemporary governance. Exploring how leaders and policy makers are expected to minimize the impact of crises while facing criticism and political risks. The response phase of crisis management focuses on immediate actions to mitigate the impact of the crisis and protect stakeholders. For example, the crisis management life cycle model proposed by (Jaques, 2009) provides a framework for organizations to navigate through various stages of crisis response, including initial analysis, decision-making, implementation, and evaluation. Similarly, (Coombs, 2015) introduced the crisis management framework, which emphasizes the importance of crisis communication, resource allocation, and stakeholder engagement in the response phase. Crisis recovery is a crucial phase in crisis management. where organizations aim to restore normal operations and rebuild stakeholder trust and confidence. The research emphasizes the importance of evaluating the effectiveness of crisis response strategies and implementing appropriate measures to facilitate recovery. (Smith, Elliott, 2006) introduced the crisis recovery process model, which outlines key steps organizations can take to recover effectively, such as conducting a post-crisis review, learning from the experience, and implementing improvements for future crises.

Therefore, the analysis of academic research on crisis management theory provides valuable insights into the key concepts, models, and strategies that underpin effective crisis management. By understanding these theoretical foundations, organizations can develop comprehensive crisis management plans, enhance their preparedness, and improve their response and recovery efforts. However, further research is needed to address emerging challenges, such as the impact of social media and technology on crisis management, the role of leadership during crises, and the integration of sustainability and ethical considerations into crisis management practices.

11. E-Governance and the Crisis Management Theory Nexus

The nexus between e-governance and crisis management theory, highlighting the potential of digital technologies in enhancing crisis management practices. By examining the theoretical foundations and existing research in the field, this study aims to provide insights into how e-governance can be effectively utilized to improve crisis preparedness, response, and recovery.

Crisis preparedness: E-governance can significantly enhance crisis preparedness efforts. Using digital platforms, organizations can improve communication channels, disseminate timely information, and engage stakeholders in preparedness activities. For example, the use of online training modules and simulations can enhance employees' crisis response capabilities (Serrat, 2017).

Crisis response: During crisis response, e-governance tools can improve coordination, decision-making, and communication. Real-time data sharing, online collaboration platforms, and social media monitoring can enable organizations to respond swiftly and effectively. Furthermore, e-governance tools can facilitate communication with affected stakeholders, ensuring the dissemination of accurate information and timely updates (Lai & Chen, 2011).

Crisis Recovery: E-governance plays a vital role in crisis recovery by facilitating information sharing, resource allocation, and stakeholder engagement. Digital platforms can enable organizations to streamline recovery efforts, assess damages, and implement appropriate measures. Additionally, e-governance tools can support post-crisis evaluation and learning, enabling organizations to improve their future crisis management practices (Serrat, 2017).

12. Interweaving Crisis Management Theories:

Interweaving the crisis management theories can enhance organizations' crisis management capabilities. By integrating strategic communication strategies from Situational Crisis Communication Theory (SCCT), sensemaking processes from Sensemaking theory, (Weick, 1995) resilience-building practices from Resilience theory (Luthar et al, 2000), and adaptive response strategies from Contingency theory (Donaldson, 2001) which refers that there is no one-size-fits-all approach to crisis management. By doing so organizations can develop a comprehensive approach to crisis management. This interweaving approach enables organizations to proactively anticipate crises, effectively communicate with stakeholders, make sense of complex situations, build resilience, and adapt strategies based on the unique characteristics of each crisis. By adopting a multidimensional perspective, organizations can enhance their crisis preparedness, response, and recovery efforts.

The Harmony of Synthesis and Research Context

The effective management of the COVID-19 pandemic in the Saudi Arabian private sector requires a comprehensive understanding of the role of e-governance from the employee's perspective. By synthesizing existing literature and considering the unique context of Saudi Arabia, this research aims to provide insights into how e-governance practices can contribute to mitigating the impact of the pandemic and ensuring the well-being of employees. The findings of this study will not only contribute to academic research but also offer practical implications for organizations and policymakers in Saudi Arabia and beyond. In summation, the theoretical underpinnings that undergird this research study serve as the bedrock for an intricate exploration into the multifaceted contributions of e-governance and its role in crisis management. Through the fusion of these theoretical tenets, the study strives to unveil.

The complex tapestry of crisis management, thus contributing to a profound comprehension of the mechanisms at play.

13. Research Methodology

The research methodology section delineates the approach, techniques, and strategies that will be employed to collect and analyze data, allowing for a comprehensive investigation into the role of E-Governance and Effective Management of COVID-19 in the Saudi Arabian Retail Private Sector: An Employee's Perspective. This section

elaborates on the rationale behind the chosen descriptive analytical approach, and quantitative data collection methods, the analysis techniques, and the ethical considerations that underpin the research process.

14. Research Approach

This study primarily adopted a quantitative research approach to assess and quantify the perceptions and opinions of participants concerning the role of E-governance and effective management of COVID-19 in Saudi Arabian retail private sector (An Employee's Perspective). Quantitative research is well-suited to uncover patterns, trends, and statistical relationships within numerical data, aligning with the objective of this investigation.

15. Research Approach

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16. Quantitative Data Collection

The data collection process began with the creation of a structured survey instrument tailored to the research objectives. The survey contained a total of 19 questions, including multiple-choice and Likert scale items. The questions were designed to gauge participants' opinions on the role of e-governance on the effective management of COVID-19 in Saudi Arabian retail private sector, their knowledge, and perceptions. These questions were distributed to 365 participants within Saudi Arabia, covering a automotive private sector. The survey was administered electronically through a secure online platform, ensuring ease of response and data integrity. Participants were selected through purposive sampling to ensure that they possessed relevant knowledge and experience about using e-governance Apps, thereby providing valuable insights into the research topic.

17. Data analysis

For a population size of 6,000, with a 95% confidence level, a neutral estimate of the characteristic's proportion, and a 5% margin of error, the expected sample size would be approximately 362 individuals.

Reliability & Validity:

Reliability:

Calculate Cronbach's alpha for internal consistency:

Cronbach's alpha for the survey data is approximately ($\alpha = 0.817$), indicating good internal consistency among the items in the survey. This suggests that the survey items are measuring the same underlying construct reliably.

Validity:

α : Cronbach's alpha

$\sqrt{\alpha} = .90$ indicating high validity

A significant majority of participants (85%) perceive electronic governance as a reliable cornerstone in tackling forthcoming calamities. This indicates that, within the private sector realm of Saudi Arabia, there is a prevailing conviction regarding the effectiveness of e-governance in its capacity to alleviate the impacts of crises. Approximately 53% of the respondents displayed a commendable comprehension of the definition of E-governance. This suggests that a significant proportion of those surveyed possessed an awareness regarding the significance of technology in crisis management within the context of e-governance. A significant and robust correlation (approximately 0.815) was noted between the perceptions of technologically advanced solutions that are easy to use during the pandemic and the enhanced capacity of businesses to efficiently engage with their employees and customers. Furthermore, a notable and substantial correlation (approximately 0.78) existed between the conviction that e-governance played a vital role in effectively handling the pandemic and the effectiveness of digital tools in aiding family members throughout this health crisis. During the lockdown, it was

discovered that there exists a noteworthy direct relationship (roughly 0.77) between the ease of use and efficiency of technological solutions and the support offered by government technology and electronic applications in facilitating business continuity for companies. The correlations found imply that the presence of easily accessible electronic governance solutions was linked to improved management of crises and enhanced assistance for both households and businesses throughout the pandemic.

This analysis suggests that the model with a single predictor variable (belief in e-governance) has a moderate positive relationship with the dependent variable. The predictor explains approximately 33.0% of the variance in the dependent variable, as indicated by the R Square value. The adjusted R Square value accounts for the number of predictors and is similar to the R Square value, suggesting that the model is reasonably good at explaining the variation in the dependent variable for this particular predictor.

18. Results:

1. A significant statistical correlation exists between e-governance and the promotion of interaction and collaboration between Citizens & Residences and the government, as well as among different governmental bodies during the COVID-19 pandemic. The government has successfully improved communication, data analysis, and decision-making by utilizing a range of digital solutions. The Health Ministry's COVID-19 portal and mobile apps are examples of online platforms that have played a crucial role in sharing real-time information, tracking contacts, and monitoring infected individuals. These initiatives have greatly contributed to a more organized and efficient response to the crisis. And this aligns with the results of some previous studies, such as the study of (Almutairi, 2020) and (Al-Ghamdi et al, 2023), (Allam et al., 2021).
2. A significant statistical correlation exists between e-governance and the streamlining of data and information exchange for decision-makers during COVID-19 pandemic. The importance of digital tools in enabling informed decision-making is emphasized. Governments can enhance the sharing of data and information by adopting e-governance, resulting in a more efficient response to the current situation. As the pandemic evolves, it is crucial for those in power to utilize e-governance in order to take prompt actions driven by data that protect public health and welfare. And this aligns with the result of some previous studies such as the study of (Brous et al, 2017), (Al-Anezi, 2022).
3. A significant statistical correlation exists between E-governance and effectiveness and efficiency of delivering services to citizens and residents during the COVID-19 pandemic. The importance of digital tools in enabling informed decision-making is emphasized. Governments can enhance the sharing of data and information by adopting e-governance, resulting in a more efficient response to the current situation. As the pandemic evolves, it is crucial for those in power to utilize e-governance in order to take prompt actions driven by data that protect public health and welfare. And this aligns with the result of some previous studies such as the study of (Almutairi, 2020), (Mohammad, Omar, 2022)

19. Conclusion

E-governance is of great importance in effectively managing COVID-19 within the retail private sector in Saudi Arabia, particularly from the perspective of employees. Through the use of digital platforms and resources, businesses have the ability to prioritize employee safety, enable remote work and flexible scheduling, and encourage employee engagement and support. As the pandemic evolves, e-governance will remain a valuable instrument for organizations to tackle the challenges posed by COVID-19 and protect the well-being of their employees within the retail private sector. Governments employed advanced digital tools to combat the COVID-19 virus. Technology enabled meticulous monitoring of its movements, akin to observing schools of fish beneath the ocean's turbulent surface. Central networks swiftly adjusted strategies in real time, effectively managing the ebb and flow of the situation. However, potential threats to security systems were constantly monitored and defended against, ensuring data remained safe from intrusions. The use of technology vigilantly protected individuals' privacy and security amidst challenging circumstances. Leaders demonstrated unwavering determination in navigating through obstacles, balancing privacy concerns with the need for enhanced security measures. As they steered through treacherous waters, they prioritized preserving privacy while effectively combating tracking attempts. Leading at the forefront of this digital era, e-governance pioneers prepared

themselves for unforeseen challenges in order to successfully navigate through uncharted territories. By strategically coordinating electronic resources like naval armadas, they were able to swiftly respond to the pervasive viral threat. Planning for the future involves stabilizing benefits and safeguarding rights to maintain public trust in emerging technological advancements. With attentive guardians at the helm and secure digital platforms as havens, permission and anonymity will guide individuals through tumultuous digital waters as beacons during storms. By hoisting sails that are amplified by technology while simultaneously upholding privacy principles, e-governance can thrive.

20. Recommendations:

The following recommendations are proposed based on the research conducted on the significance of e-governance in effectively managing COVID-19 in the private retail sector in Saudi Arabia (Employees Perspective)

1. It is crucial to invest in and enhance the digital infrastructure within the retail private sector. To maximize the advantages of e-governance, this entails supplying reliable internet connectivity and ensuring that employees are equipped with the appropriate devices for accessing digital platforms.
2. It is advisable for organizations to allocate resources towards the implementation of training initiatives that will augment the digital proficiency of their employees. To address possible difficulties in technological literacy by doing so, individuals will be equipped with the necessary knowledge and skills to proficiently navigate and exploit e-governance tools and platforms.
3. It is crucial for organizations to give utmost importance to data privacy and security in the realm of e-governance. With the exchange of sensitive information being a prominent feature, it becomes essential to implement strong security measures like encryption and authentication protocols to protect employee's data.
4. Enhance Collaboration and Communication: E-governance presents possibilities for enhanced collaboration and communication. Entities should promote employees' active involvement in digital platforms, encouraging them to provide input, exchange concepts, and express concerns. This approach will cultivate a feeling of inclusiveness and active engagement.
5. It is essential to consistently revise guidelines and protocols communicated through e-governance platforms as knowledge about COVID-19 progresses. By providing employees with up-to-date information, they can make informed choices and comply with health and safety measures.
6. Regularly monitoring and assessing the effectiveness of e-governance initiatives in the retail private sector is crucial. This process allows for the identification of areas that require improvement and enables measurement of the impact on employee well-being and organizational performance. It is essential to actively seek feedback from employees and utilize it to refine and enhance e-governance strategies.
7. Private sector retail organizations should engage in active collaboration with government agencies to ensure that they are aligned with and adhering to national strategies and guidelines pertaining to the management of COVID-19. By doing so, these organizations can bolster the effectiveness of e-governance efforts and make a meaningful contribution towards a unified response to the crisis.

Implementing the suggested measures will allow organizations in the private sector to effectively utilize electronic governance in order to safeguard the welfare and security of their employees amidst the COVID-19 pandemic. Moreover, this will also enhance the overall strength and flexibility of the sector when confronted with forthcoming crises.

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