Public Relations via the X Platform: A Critical Study of Crisis Communication Issued by Saudi Government Organisations during Covid-19

By:

Ennas Ali Al Kedm

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Dedication

To the greatest supportive guide of my life to my DAD.

To the kindest heart, the best friend ever to my MUM.

To my gentleman, to my husband Ali.

To the special one, to my youngest brother Loai.

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Abstract

This study critically examines crisis communication strategies employed by the Saudi Ministry of Health (MOH) and Ministry of Education (MOE) on the X platform during the Covid-19 pandemic. Effective crisis communication is crucial for disseminating accurate information, addressing public concerns, and mitigating the spread of the virus. Social media platforms, particularly X, have facilitated real-time engagement between government organisations and the public. Understanding how Saudi governmental organisations utilised X for crisis communication is essential for evaluating their potential effectiveness and identifying areas for improvement.

The top 100 most retweeted posts from each ministry during 2020 were selected for analysis. Thematic analysis and discourse analysis were employed to examine tweet content, language, and crisis communication strategies.

The analysis of the selected tweets reveals several key findings regarding the crisis communication strategies of the MOH and MOE. The analysis illustrates four main themes (News and updates, call to action, awareness and education, and reassurance and empathy) along with subthemes. News and updates and call to action tweets were prominent in the early stages, focusing on disease information and transmission. However, there was a potential gap in awareness messaging, indicating the need for improved communication to promote preventive behaviours. Reassurance and empathy were important in engaging the public and fostering trust during the crisis. Moreover, the analysis revealed distinct engagement patterns across tweet types. Informational posts tended to generate higher levels of retweets, while tweets announcing directives and government policies were more likely to elicit responses in the form of comments.

This research is significant as it reformulates the Western crisis communication model by emphasizing the addition of cultural elements. The study demonstrates that the Saudi government uses a distinct messaging style in their crisis communication that aligns with Saudi cultural and religious values (for instance, family-oriented messages and religious appeals in messages). The study suggests that the use of local or cultural elements in posts could be effective in crisis management. Further research is needed to explore crisis communication on other social media platforms and compare crisis responses across different settings.

Conferences and Publications

1. Reputation management of companies during crisis- *a case study of the Saudi Electricity Company*. Poster presented at Crisis Management Conference, March 2019, Florida USA.

2. Al Kedm, E., Eckler, P., Higgins, M. (forthcoming). Public relations via X: A critical study of crisis communication by Saudi government organisations during the Covid-19 pandemic. In G. Bosah, R. E. Hinson & E. Ade (Eds.), *Public relations and strategic communications management in emerging economies*. September 2024, Palgrave, UK.

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List of Abbreviation

Abbreviation	Term
API	Application Performing Interface
CERC	Crisis emergency risk communication
MoE	Ministry of Education
MoH	Ministry of Health
PESI	prepare, explore, specify, integrate
PR	Public Relations
SA	Saudi Arabia
SCCT	Situational Crisis Communication Theory
SMCC	social media crisis communication
WHO	World Health Organisation

Chapter 1: Introduction

The phenomenon of globalisation has brought about various consequences, including an increased vulnerability to the spread of infectious diseases. This is particularly evident in the context of commercial air travel, which serves as a facilitator for the rapid transmission of diseases across borders (Smith, 2006). As a result, global emergency public health has become an essential field of study that examines how individuals respond to such health crises. In this regard, the advent of social media, particularly platform X, has emerged as a significant arena where people openly engage in discussions regarding emerging health issues. This research seeks to delve into the realm of public health communication on X during the outbreak of the Covid-19 pandemic in 2020, with a specific focus on the crisis communication efforts of the Ministry of Health (MoH) and the Ministry of Education (MoE) in the Kingdom of Saudi Arabia (KSA). Given that social media platforms are often regarded as a space for unfiltered public opinion, they hold great potential for not only promoting public health initiatives but also for informing strategic planning and response measures.

To comprehensively address the research aims, it is essential to establish the contextual backdrop and foundational knowledge related to crisis communication and its dissemination within the realm of social media., This chapter outlines the rationale that underpins the study, highlighting the significance and relevance of the research in the broader field of PR and crisis communication., the aims and aims of the undertaken study are articulated to delineate the specific goals and intentions of this research endeavour. Lastly, the chapter concludes with an outline of the structure of this thesis, providing a preview of the subsequent chapters and their respective contributions to the overall study. By following this well-structured framework, this thesis aims to critically analyse the crisis communication strategies employed by Saudi governmental organisations during the Covid-19 pandemic, with X serving as the primary platform for public engagement and information dissemination.

The onset of a crisis is typically represented as an unforeseen event, posing substantial threats to individuals, societies, and organisations (Sui Pheng et al., 1999).The term "crisis" has its roots in the Greek word "krisis," denoting a pivotal "choice" or "decision" (Paraskevas, 2006). Ordinarily, the notion of crisis was often perceived negatively, a sentiment frequently exacerbated by political figures and media outlets, inducing feelings of insecurity, fear, powerlessness, uncertainty, and anxiety (Alahdal et al., 2020). The Covid-19 pandemic, marked by inherent uncertainty and perpetual shifts, necessitated heightened

endeavours in risk communication by governments and health officials globally. An inability to address crises adequately or promptly like Covid-19 had the potential to yield disastrous outcomes on a national level (Alahdal et al., 2020; Rubens, 2023). As a result, officials were compelled to seek immediate and trustworthy methods of communication to connect with the public. Within this scenario, social media quickly surfaced as a noteworthy instrument for crisis communication, providing a platform where timely and crucial information could be conveyed to mitigate the adverse impacts and guide societal response (Alahdal et al., 2020).

During the Covid-19 pandemic, social media platforms were instrumental in circulating vital information regarding the virus. Within the confines of the KSA, X distinctly emerged as a salient medium for the propagation of prevention messages by Saudi government officials (Hassounah et al., 2020). One might question the emphasis on prevention messages specifically. The focus on prevention is certainly noteworthy; however, it is crucial to recognize that while prevention is an essential component, comprehensive crisis communication also encompasses aspects like risk management, and the transmission of other related messages. Indeed, risk management messages, alongside other types of directives, can offer a holistic approach in crises. Thus, the language chosen for communication is crucial in ensuring that all facets of crisis management are effectively addressed (Bokemper et al., 2022). Despite the pervasive use of these platforms during the crisis, there has been a relatively limited exploration into crisis communication in scholarly studies specifically centred on the Covid-19 pandemic. My research will delve into the way government officials from MoH and MoE in the KSA used X for crisis communication amidst this turmoil. Additionally, my work endeavour to discern how crisis communication strategies were adapted over time considering the unfolding events of the Covid-19 pandemic.

KSA has a population of approximately 34 million, making it the second most populous country in the Arab world after Egypt (GMI, 2022). The MoH serves as the largest healthcare services provider, working in conjunction with the private sector (Hassounah et al., 2020). In the face of the Covid-19 crisis, the MoH was at the forefront of utilising digital platforms and tools to communicate with the public. For instance, the mobile app Tawakkalna was introduced to track and prevent infection cases, while the teleconsultation apps Sehha and Mawid were developed to provide virtual Covid-19 screening, teleconsultation services, and symptom checkers (Hassounah et al., 2020).

Similarly, the MoE responded promptly to the pandemic by transitioning to online education. To facilitate this shift, it launched 12 new education channels on mainstream and social media platforms, with X serving as the primary platform for announcing programs and schedules (Hassounah et al., 2020). Within this context, my study aims to investigate how

the X platform was employed by the MoE and the MoH during the Covid-19 pandemic for communication with the public. Given the global crisis scenario, this communication will be examined through the conceptual lens of crisis communication, which provides a comprehensive framework for understanding and analysing effective communication strategies in times of crisis. By exploring the crisis communication efforts of these Saudi organisations on X during the Covid-19 pandemic, this study aims to provide critical insights into their communication strategies, the evolution of risk communication over time, and the role of social media platforms in public engagement and information dissemination. Understanding the dynamics of crisis communication in the context of Saudi Arabia's response to the Covid-19 pandemic is crucial for enhancing future crisis management and PR practices within the country and beyond. My research is significant as it responds to crisis communication from a non-western perspective and explores the challenges public relations face in emerging economies.

In the instance of crisis scenarios, such as the Covid-19 pandemic, the utility of social media platforms is indeed extensive. However, it is pivotal to note that the impact of social media on public sentiment and information dissemination can vary substantially across different regions and contexts. While Almuzaini et al. (2021) argue that in some areas, like Saudi Arabia, social media platforms have been instrumental in mitigating panic and anxiety and curtailing the spread of misinformation, contrasting dynamics have been observed in Western contexts such as the UK and the USA. In these Western regions, there have been instances where social media was identified as a catalyst for the proliferation of panic and misinformation rather than a medium for factual and calming information dissemination (Lelisho et al., 2023; Singh, 2023). It facilitated the rapid circulation of both verified and unverified information, creating a dichotomy in public perception and response to the crisis (Caceres et al., 2022; Muhammed & Mathew, 2022). Therefore, the statement regarding the positive impacts of social media in minimizing panic and misinformation needs to be contextualized and understood within specific geographical and cultural settings, reflecting the diverse nature of social media interactions and effects during global crises.

In Saudi Arabia, social media platforms played a pivotal role in crisis communication during the Covid-19 pandemic due to their widespread usage. With a high internet penetration rate and smartphone ownership, social media platforms reached a significant portion of the population (Statista Research Department, 2023). In general, social media platforms facilitate two-way dialogues among various stakeholders and transform traditional one-way communication into interactive engagements (Zhao, 2020). Authors have highlighted the role of social media in shaping public behaviour by enabling the sharing,

creation, and consumption of information disseminated by governments (Zeemering, 2020). However, the pandemic also gave rise to an influx of both accurate information and misinformation, posing challenges in managing public perception and fear (Safarpour et al., 2021). In response, the Saudi government proactively utilised social media platforms to effectively engage with the public (Safarpour et al., 2021).

1.1 Risk and Crisis Communication via social media

Risk communication and crisis communication are essential components of effective PR, particularly during emergency situations like the Covid-19 pandemic. With the widespread use of technology and internet access, healthcare practitioners have embraced social media as a valuable tool for health-related information dissemination. While Tang et al. (2020) highlight the positive impact of social media platforms on people's perceptions and decisions, it is crucial to acknowledge the extensive research illustrating the detrimental effects. These platforms, amidst their benefits, have been conduits for misinformation, panic, and divisive narratives, indicating the necessity for a balanced, nuanced perspective on their influence in contemporary scenarios (Muhammed & Mathew, 2022). In the realm of crisis communication, the use of social media platforms has evolved to become more integral in conveying organisational messages amid crises. While Veil et al. (2011) documented the US Centre for Disease Control and Prevention's use of varied online mediums, like microblogs and videos, to enhance disease awareness, contemporary approaches have seen further diversification and sophistication. Nowadays, organisations employ advanced strategies and tools, leveraging newer platforms and multimedia content, to foster engagement and disseminate information more effectively, ensuring relevancy and addressing the dynamic communication needs of the current times (Shahbaznezhad et al., 2021). In the context of Saudi Arabia, utilising social media for risk and crisis communication can establish a venue for open dialogue and enable citizens to ask questions, clear doubts, and address confusion.

It is crucial to differentiate between risk communication and crisis communication. Risk communication involves the exchange of information and opinions among individuals, groups, and institutions, addressing concerns, opinions, and reactions to risk messages (DHHS, 2002). On the other hand, crisis communication focuses on transferring information to significant stakeholders to prevent or mitigate negative occurrences, recover from crises, and maintain or enhance reputation (Fearn-Banks, 2007). During the Covid-19 pandemic, both risk and crisis communication were occurring simultaneously. Creating a public

partnership is a fundamental purpose of utilising social media in crisis communication (Rand & Rodriguez, 2007). In times of uncertainty, social media platforms can alleviate stress among stakeholders by providing timely and direct information sharing. Research conducted after Hurricane Katrina highlighted the significance of interactive online forums, where disaster victims frequently sought information (Procopio & Procopio, 2007). Moreover, perpetual connectedness through social media allows for ongoing relationship-building, even during unexpected events (Veil et al., 2011).

Social media platforms offer multimodal capabilities such as messaging, posts, online video sharing, and podcasts, enriching the interaction between different government and non-government stakeholders (Waters et al., 2009). Citizen-generated content, such as images and videos, can be utilised to encourage exchange and collaboration. For instance, in New York City, citizens were encouraged to upload photos of damaged areas on social media platforms to assist in the identification of urban damages during flood emergencies (Waters et al., 2009). Social media platforms not only facilitate dialogue but also strengthen the trust relationship between stakeholders and the public, a crucial aspect of successful crisis communication (Waters et al., 2009). Furthermore, the public can serve as a valuable source of information during crises and disasters. Social media allows individuals at different geographic locations to act as eyewitnesses, providing real-time information and contributing to a clearer geographic visualisation of emergency situations (Seeger, 2006). Crisis communicators must be honest and transparent to prevent the public from seeking information from less credible sources. Social media serves as a direct and accessible channel for stakeholders to share credible information openly, bridging the gap between organisations and the public (Stephens & Malone, 2009). In times of crisis, when traditional media channels may fail to deliver timely and accurate information, social media becomes a reliable source (Gottlieb & Dyer, 2020). However, the immediacy of digital communication also increases the risk of misinformation and disinformation. Conspiracy theories, such as claims that the Covid-19 virus resulted from human experiments, have circulated on social media platforms (Bavel et al., 2020). Therefore, crisis communication professionals must undergo adequate training to effectively manage crisis communication online.

1.2 Rationale for the Study

The Covid-19 pandemic has had a profound impact on societies worldwide, and effective crisis communication has become crucial during such times of uncertainty and risk. In this study, I aim to conduct a critical analysis of crisis communication strategies employed by MoH and MoE in the Kingdom of Saudi Arabia during the Covid-19 pandemic, focusing

specifically on their use of X. By examining tweets posted between January 2020 and December 2020, I seek to understand the nature of crisis communication in this context and identify potential gaps and areas for improvement. This specific timeframe was chosen because it encompassed the most intense period of the Covid-19 pandemic. Analysing tweets during this timeframe helps shed light on how different government organisations responded to these crises, the potential effectiveness of their communication procedures, and whether there are common patterns that emerged in their posts. This research aims to provide insights that can inform future crisis communication strategies in relation to social media.

X has been selected for investigation because in Saudi Arabia, it garners substantial attention, serving as a pivotal communication hub for various groups within the region (Mabkhot et al., 2022). X's features, such as high visibility and rapid dissemination capabilities, elevate its importance as a medium for information transmission during crises (Son et al., 2019). The tweets possess the potential to spread swiftly and extensively, making them critical for the distribution of essential information during tumultuous situations. Previous research has noted that Twitter has the potential to provide the public's opinions and insights into infectious disease outbreaks (in the context of Ebola or Zika viruses) (Chew & Eysenbach, 2010; Odlum, & Yoon, 2015), however, to the best of my knowledge, no research examines the crisis communication strategies used by the governmental organisations especially in the context of the Covid-19. Moreover, the discussion of covid-19 pandemic can be a compelling context as the field of public relations intersects with public health within an emerging economic yet socially conservative place like Saudi Arabia.

Previous research on X data has been conducted from various disciplinary perspectives e.g., natural disasters, health pandemics, political Crises, environmental Disasters, and technological Failures (Cutter, Boruff, Shirley, 2003; Smith & Petley, 2009). However, these studies often lack a comprehensive and nuanced qualitative analysis of crisis and risk communication, particularly in the context of health. While computer science studies focus on technical aspects, and philosophical studies provide theoretical insights, this research aims to focus on the communication aspect of the content by offering an in-depth qualitative understanding of crisis communication, specifically related to health crises. By conducting a qualitative analysis, I can interpret their meaning and identify underlying themes that may have been overlooked in previous quantitative studies.

Pre-Pandemic-related discourse is multifaceted and likely consists of various thematic and sub-thematic discourses that develop and change over time. By closely analysing Covid-19-related tweets over a longer timeframe of one year, I can uncover

layered content that includes additional discourses which evolve over time. This deeper analysis is often missing in previous studies, which tend to treat Covid-19 discourse as an undifferentiated whole, without considering the interplay of discourse information and temporal information. Furthermore, previous research has primarily relied on quantitative approaches, utilising machine learning techniques to identify patterns, such as unigrams and bigrams, but lacking qualitative insights and fine-grained analyses of the discourse (Aljameel et al., 2021; Li et al., 2020).

Being an academician myself in Saudi Arabia and seeing the crisis communication that happened during the Covid-19 pandemic by the government stakeholders, I decided to take Saudi Arabia as the case study. The crisis communication that happened on the MoH and MoE pages of Saudi Arabia is analysed using the Crisis and Emergency Risk Communication (CERC) model. The reason for choosing this Western model is to extend its applicability to non-Western contexts. This will help me to extend the field of crisis communication cross-culturally into non-western contexts, which will contribute to fulfilling a long-standing gap in knowledge.

1.3 Research Questions

This study aims to dissect the communication content and strategies employed by the Saudi MOE and MOH on X amidst the 2020 Covid-19 crisis, how the X platform was used to enhance awareness and prevention towards Covid-19, and how the public engaged with this content. Following research Qs:

RQ1: What predominant themes emerged from the tweets by the Saudi Ministry of Education and Ministry of Health communicated on X during the Covid-19 crisis in 2020?

    RQ1a: How was Covid-19 presented and characterized in MOE and MOH tweets?

    RQ1b: What are the main sub-themes that emerged from the tweets of both Ministries on X during the Covid-19 crisis in 2020?

RQ2: What was the role of Arabic language and other languages in the context of the tweets?

RQ3: How did individuals interact and engage with the communications from the Saudi MOE and MOH regarding the Covid-19 pandemic on X?

RQ4: What explicit crisis communication strategies were reflected in the MOE and MOH's tweets during the pandemic?

1.4 Thesis Structure

The thesis comprises of six chapters, each serving a specific purpose and contributing to the overall research:

Introduction (Chapter 1): This chapter provides an overview of the study, presenting the research problem, aims, it also offers an outline of the subsequent chapters.

Literature Review (Chapter 2): Here, crisis communication is defined and explored, examining the differing perspectives, and arriving at a consensus about dealing with crisis via social media. The chapter surveys the existing literature on crisis communication, delving into the role of traditional and social media throughout history, with a specific focus on the role of social media in PR communication during the Covid-19 pandemic.

Crisis Communication in Saudi Institutions (Chapter 3): This chapter extends the discussion of crisis communication by focusing on the strategies employed by Saudi institutions. It introduces the selected institutions, details the crisis communication that occurred on social media during the pandemic, and highlights the adaptation of Coomb's Crisis and Emergency Risk Communication Model to the Saudi Arabian context.

Methodology (Chapter 4): The methodology chapter outlines the rationale behind the selection of X corpora and provides a comprehensive overview of the undertaken methodology. It justifies the use of critical discourse analysis and concludes with a discussion of ethical considerations.

Findings and Discussions (Chapter 5): This chapter presents a detailed analysis of the selected X corpora from the MoH and Ministry of Education. It includes graphical representations and discusses specific communication strategies observed.

Conclusion and Recommendations (Chapter 6): The final chapter concludes the study by summarizing the findings and offering recommendations for future research.

Chapter 2: Literature Review

The literature review chapter of this thesis provides an overview of crisis communication in the context of PR and explores its evolution over time. It examines traditional and social media's role in crisis communication and PR, highlighting their similarities and differences. Furthermore, the chapter will critically evaluate the role of social media, including X, in facilitating crisis communication and its unique characteristics and challenges during the Covid-19 crisis. Ultimately, this literature review chapter will provide a comprehensive overview and roadmap for the subsequent analysis of crisis communication issued by Saudi organisations on the X platform during the Covid-19 pandemic.

2.1 Defining A Crisis

A crisis is generally understood as an unforeseen event that disrupts the normal routine, operation, stability of any society or community, or the reputation of any organisation. It creates an uncertain situation, a high level of urgency, and real risks, such as well-being, safety, or organisational integrity (Coombs, 2015). Coombs' definition is regarded as comprehensive because it encompasses not only the detrimental impacts on stakeholders and organisational reputation but also underscores the potential threat to human lives, hence offering a multidimensional view of crisis situations. However, it is crucial to elucidate why such a judgment is formed by comparing it to other definitions and exploring its encompassing nature. Pearson and Chair (1998) describe crises as distinct from normal routine as not only do, they involve sudden disruption, but they require an immediate response to minimize the risk. Crisis can come in various forms, i.e., natural disasters, technological failures, health pandemics, and organisational scandals. They require rapid decision-making, mostly the information is evolving and changing as in the case of the COVID-19 pandemic. Hermann (1963) argues that the key aspect of the crisis is that it poses significant challenges in normal routine operations and disrupts normalcy.

Mitroff (2004) argues that a crisis has four dimensions: unexpected, threatens the stakeholders, needs immediate action, and leads to irreversible changes. Moreover, a crisis unfolds in stages as Fink (1986) notes, starting with the initial shock, followed by break up and chronic stages, and finally a recovery or resolution stage as the case of the Covid-19 pandemic illustrated in subsequent chapters.

2.2 Types of Crises

In the realm of crisis communication, various types of crises have been identified. Crises have been distinguished as community and non-community crises, further categorized into natural, non-industrial, and industrial crises (Shaluf et al., 2003). Natural crises result from natural disasters like earthquakes, tsunamis, and floods, with the Covid-19 pandemic as a likely example. Industrial crises stem from socio-technical disasters such as rail crashes or building fires, while non-industrial crises arise from political and social conflicts. Non-industrial crises can be further divided into conflict-type situations and non-conflict-type crises. Although these categories are not directly relevant to my study, they provide a comprehensive understanding of crisis typology.

Coombs (1995) contributes to the typology of crises by distinguishing between external and internal crises. The organisation itself causes internal crises, while external actors or agencies instigate external crises. Coombs also introduces additional dimensions to crisis typology, specifically intentional and unintentional dimensions. It is classified as intentional if external or internal actors deliberately cause a crisis. On the contrary, the unintentional crisis is not caused by any actor. In the context of the ongoing Covid-19 pandemic, it is imperative to critically examine the categorisation of this situation as a singular crisis. While it is widely acknowledged that Covid-19 represents a global crisis, it is important to recognize the multifaceted nature of this phenomenon. In understanding the global crisis signified by Covid-19, acknowledgment of its varied dimensions and implications is crucial. By 2023, several interpretations and narratives surrounding this pandemic have emerged, each contributing to the collective understanding and response strategies adopted globally. Initially, Covid-19 was primarily perceived as an unforeseeable natural occurrence with global repercussions (Pereira et al., 2022). Additionally, there persists a general ambiguity regarding the duration of the crisis, manifesting differently across various regions (Leach et al., 2021), necessitating diverse, tailored approaches to address the unique challenges each region faces. Moreover, international endeavours are intensively channelled towards mitigating the pandemic's impact and expediting the recovery process (Lee et al., 2021). The prevailing hope and expectation are a global return to a semblance of pre-crisis normalcy. However, this optimism is accompanied by awareness and discussions on the lasting alterations to societal structures and norms, emphasizing adaptability and resilience in the face of such global disruptions (Prime et al., 2020).

However, there are lack of interpretations providing a comprehensive and logical understanding of the Covid-19 crisis. It is erroneous to categorize the Covid-19 crisis solely

as a natural phenomenon. Rather, it should be recognized as a complex interplay between natural and social phenomena. The impact of the crisis extends beyond its natural origins, as it profoundly affects society at large. The varying responses observed across different societies in tackling the pandemic demonstrate the significant role of social dynamics in crisis mitigation. As the World Health Organisation (2020) argues "the Covid-19 pandemic is much more than a health crisis; it is affecting societies and economies at their core" underscoring the significance of viewing it through a multidimensional lens.

2.2.1. The COVID-19 pandemic as a Public Health Crisis

The World Health Organisation (WHO) declared the Covid-19 pandemic a public health crisis in March 2020 and emerged as the most important public health crisis of the 21st century. Not only does it disrupt the health system of the world, but also the economies and social structures of every country. The rapid spread of the pandemic, along with its high level of mortality and morbidity rates, has led to public health interventions and widespread lockdowns everywhere (WHO, 2020). In such a scenario, government and non-government stakeholders implemented urgent responses, including mass testing, social distancing measures, and vaccination campaigns, to stop the spread of the pandemic.

Van Bavel and his colleagues (2020) argue that characterized by uncertainty, a pandemic like Covid-19 requires timely and clear information to manage public behaviour and to prepare them for the crisis. In this regard, effective crisis communication becomes significant to inform the public about preventive measures, mitigating disinformation, and other health-related guidelines (Seeger, 2020). Gostin and his colleagues (2020) claim that the Covid-19 pandemic foregrounds the embedded vulnerabilities in public health infrastructure and calls for better preparation in the future. It is reasonable to assert that the covid-19 pandemic has compelled policymakers and governments to confront their limitation regarding the preparedness and response to this crisis. While the covid-19 crisis offers a transformative opportunity across many governments and private sectors, like healthcare system, economic institutions, universities, etc, it also addresses a systematic deficiency in the mentioned sectors. The covid-19 pandemic thus reveals that the health crisis like this one cannot be controlled independently by an individual state. In fact, it urgently calls "to see health as a common and global good, hence requiring a broad perspective and more coordinated efforts among governments and policy makers across the world" (Vito, Lauriola, & D'Apice, 2022, p. 39).

Benach (2021) argues that "Covid-19 not only constitutes a serious public health problem and a global major threat to the poorest and most vulnerable social groups and

neighbourhoods of the world, creating a potential pandemic of inequality, but also poses an enormous challenge from the perspective of public health, ethics, economy, environment, and politics" (51). In this context, it is argued that the covid-19 pandemic initiates two public crises parallelly. The first is heath crisis, illustrating that the health system across the world is not ready to tackle health emergencies like Covid-19. Seeing its impact on the global market, it is clear that the second is economic crisis. The effect of Covid-19 is extended to other aspects, such as, environment, inequalities, and ethics, thus initiating social and environmental crises.

The pandemic highlights the crucial connection between public health and policy and policies' implications on the public health or health inequities. Jackson and his colleagues (2022) introduce the US-based Covid-19 database that will measure the impact of policy on health disparities. According to Lancet (2021), "In 2020, a virus that thrived on chronic disease and inequality became the great 'revealer'. COVID-19 revealed the fragility of civilizations built on social injustices, short-term policies, and a dangerous disregard for the environment" (63). Simply put, the Covid-19 pandemic reveals "health as the fundamental driver of the economic, cultural, and social development of our society" (Vito, Lauriola, & D'Apice, 2022, p. 40).

The Covid-19 pandemic has foregrounded several lessons for the future public health crises. It highlights the need for the robust health system that can have capability of early detection and can facilitate transparent and quick information sharing across nations (Sturmberg & Martin, 2020). Furthermore, there is a need to strengthen the whole health infrastructure, like investment in ICU capacity etc. The Covid-19 vaccination distribution points out the need for global mechanism for equitable access across nations (Wouters et.al, 2022). To sum pt, it is argued that the Covid-19 pandemic highlights the need for resilient healthcare system, global cooperation, and policies that prioritize equitable distribution of resources.

2.3 Management of Crises

The concepts of crisis management and crisis communication are often used interchangeably. However, crisis management is a broader notion that encompasses elements like logistic and operational aspects, whereas crisis communication specifically focuses on conveying the relevant information to the public. While the conjunction of communication and management within the same definition might suggest an inherent relationship, it indeed necessitates a more explicit delineation, as argued by Fall (2004).

The term "crisis" in the realm of crisis management has been subject to various interpretations and definitions. While Timothy Coombs offers a pivotal definition, describing a crisis as the realisation of risk causing potential detriment to stakeholders, organisations, and potentially human lives (Coombs, 2015, p. 29), it is vital to recognize the existence of alternative perspectives. Coomb (2015) argues crisis communication involves the timely dissemination of clear, accurate, and consistent information to mitigate and manage the crisis to maintain trust between government stakeholders and the public and safeguard the organisation's image. Given this context, Coombs (2007) argues that crisis communication aims to reduce uncertainty and demonstrate an organisation's commitment to addressing crisis while protecting its employees and those whose lives are at risk. The essence of crisis communication goes beyond the mere management of the crisis; it is an intricate balance of conveying relevant and accurate information while simultaneously maintaining or restoring stakeholder trust (Coombs, 2007). This conjunction can potentially engender more ambiguities, and thus, a precise explication of how communication serves in managing crises, navigating stakeholder perceptions, and expectations, is paramount to avoid conceptual blurring. First, it is essential to distinguish between the two concepts. Although crisis communication and crisis management are closely intertwined, they represent distinct aspects of crisis-handling. Coombs (2014) defines crisis management as a comprehensive process aimed at preventing or minimizing the damage caused by a crisis to an organisation and its stakeholders (p. 5). Coombs further identifies three key phases of crisis management: pre-crisis, crisis response, and post-crisis (Coombs, 2014, p. 5). This definition highlights that crisis management extends beyond the organisation itself and encompasses the well-being of its stakeholders. Similarly, Bundy et al. (2017, p. 1661) define crisis management as dealing with a disruptive and unexpected event that threatens the organisation or its stakeholders. On the other hand, crisis communication is a way by which information is shared with stakeholders to ensure accuracy, transparency, and timeliness of the message conveyed. This broader perspective emphasises the need for organisations to holistically address the challenges posed by crises. Furthermore, Boin et al. (2017) concur that crisis management involves complex and interconnected governance challenges (p. 4).

Conceptually dissecting the realms of crisis management and crisis communication unveils a complex interplay between these two imperative organisational functions, embodying a strategic relationship wherein both domains significantly intertwine (Coombs, 2014). Crisis management, as the broader term, encompasses the comprehensive strategies and decisions formulated by an organisation to navigate through, mitigate, and eventually resolve a crisis, incorporating aspects ranging from logistical, operational, to

communicational undertakings (Pearson & Clair, 1998). In this labyrinth of management strategies, crisis communication emerges as a sub-component yet holds paramount significance, serving as the conduit through which the organisation's strategies, intentions, and responses are articulated and conveyed to its diverse stakeholders (Coombs, 2007). Therefore, it is argued that crisis communication not only supports crisis management but acts as an active tool to frame a narrative to influence the perception of the public and to maintain the trust between stakeholders and the public during critical times. Essentially, while crisis management delineates the overarching framework within which an organisation coordinates its response to a crisis, crisis communication can be conceptualized as an intrinsic element within this framework, responsible for conveying the narrative, perceptions, and information flow during the crisis, thereby influencing stakeholder perception, and safeguarding organisational reputation (Ulmer et al., 2015). The success of crisis communication, in this case, directly impacts the reputation of organisation. Thus, crisis communication can be seen not merely as a subsidiary of crisis management but rather as a pivotal facet that plays a significant role in guiding the public's understanding of the crisis. Through the strategic use of language, clear messaging, and storytelling, crisis communication is framed in a way that can resonate with stakeholders to foster trust and to protect the organisation's credibility. Via the selection of words, tone, and narratives, crisis communicators can manage perception, maintain integrity, and manage relationships throughout a crisis.

In conclusion, crisis communication is critical in crisis management by managing meaning and information during the crisis process. Crisis managers must recognize a crisis' potential harm and take prompt action to minimize or prevent severe damage and harm. Crisis communication is designed to achieve specific aims, including ensuring safety, protecting stakeholders and organisations, limiting negative effects, and mitigating reputational damage. It involves managing information and meaning, focusing on instructing information, adjusting information, and reputation management (Charoensukmongkol & Phungsoonthorn, 2022) Organisations can shape stakeholders' perceptions by employing effective crisis communication strategies, effectively responding to crises, and maintaining their reputations. Given this context, crisis management as a broader notion must encompass the external challenges as well as internal concerns of the organisation. I believe it is essential to the dominant perspectives within crisis management which are organisational crisis and public (or emergency) crisis. They both differ significantly in scope, stakeholder focus, and objectives whilst involving managing threats to stability.

Referring to the threat, or disruption within a company or organisation, the organisational crisis -stems from internal issues i.e., the scandal of leadership, operational failures, or financial meltdown. Therefore, the primary aim of an organisational crisis is to protect the organisation's reputation, ensure the continuity of business processes, and maintain the trust of stakeholders (Coombs, 2007). Communication in this context only revolves around reassuring investors, customers, and employees while managing the narratives to minimize long-term damage to the organisation (Ulmer, Sellnow, & Seeger, 2010). This form of crisis focuses largely on internal communication and media relations to control the narratives in order to protect the public image of organisation.

In contrast, an emergency or public crisis involves large-scale events, such as security threats, pandemics, or natural disasters that impact the public. The focus, in this context, is to manage the immediate safety of people, provide clear information to minimize risk and to ensure access to basic needs (Reynold, & Seeger, 2005). Given this context, it is argued that the key distinction between the two lies in its focus on the audience and its objectives. While the organisation's crises focus on the protection of corporate interest, the public or emergency crises focus on public's welfare and safety (Coombs, 2021). In any public crisis, clarity and immediacy are vital elements of crisis communication, requiring collaboration among government stakeholders, health emergencies, and other public organisations. Therefore, each perspective requires different communication strategies. This research focuses on the emergency or public crisis. My research aims to investigate the crisis communication that happened on X by MoH and MoE during Covid-19 to protect the public welfare.

Keeping in view the complexities involved in public crisis, I believe it is imperative to address the relationship between stakeholders and the organisation. Relationship management significantly influences public perception and organisational response. Therefore, I believe that relationship management is a vital part of managing crisis, allowing organisations to foster cooperation and trust to navigate through challenges that arise amidst crises.

2.3.1 Relationships as part of Managing a Crisis

Relationship management theory is a fundamental framework in PR, highlighting the importance of relationships in effective communication and organisational practices (Ledingham & Bruning, 2000). This theory asserts that PR is vital for any organisational activity involving the public, as it establishes and nurtures mutually beneficial relationships that directly impact an organisation's success or failure (Cutlip, 1994). Relationships become

more significant in crisis management as they influence the perception and the response of the crisis by government stakeholders. Initially developed with a specific focus on PR and its potential to enhance organisational relationships, scholars have consistently emphasised the significance of relationship management (Ledingham & Bruning, 2000). Researchers, such as Ferguson (1984), have underscored the centrality of relationships within PR, both in practice and scholarly inquiry. Ehling (1992) advocates for a strategic approach in PR that prioritizes nurturing, building, and maintaining relationships(Broom et al., 2000; Grunig, 1993). Discussions by Ledingham (2011) have further reinforced the role of relationships in PR, clarifying their importance within an organisational structure and providing a framework to guide PR efforts toward achieving organisational objectives.

Numerous studies conducted by PR scholars have sought to measure and evaluate the impact of relationships on organisational goals (Bruning & Galloway, 2003; Bruning & Ledingham, 1999; Ferguson, 1984; Grunig & Ehling, 1992). Trust, openness, satisfaction, commitment, and control mutuality have emerged as common elements across these studies. Trust plays a critical role in determining the overall crisis response of any organisation in the context of crisis management. A lack of trust easily undermines an organisation's ability to manage any crisis. For instance, in such cases stakeholders may be less receptive to the information received regarding crisis (Veil, et.al., 2012). Interpersonal communication research has demonstrated that trust significantly impacts the quality of relationships among individuals (Brehm, 1992). For example, Veil et al. (2012) found that lacking trust led to deteriorating individual relationships. Furthermore, the influence of relationships on organisation-PR hips has been extensively explored, investigating how they shape public perceptions and engagement with organisations (Ledingham, 2006). Trust is crucial for crisis managers to facilitate smoother communication and to convey essential information (Coombs, 2007). It is argued that the presence of trust increases the likelihood that stakeholders will be more supportive of the organisation.

The research conducted on relationships in PR has predominantly concentrated on maintaining positive relationships. These studies have treated relationships as a dependent variable, examining how organisations can foster and sustain good relations with the public (Ledingham & Bruning, 2000). Control mutuality, a key element of relationship management, is crucial in extending good relations. It also determines the influence the organisation and its stakeholders have on any crisis. According to Bruning and Ledingham (2002), organisations that share information with stakeholders build sustainable, stronger, and more resilient relationships. Organisations that attempt to manipulate the public solely for their benefit cannot cultivate long-term relationships with the public (Bruning & Ledingham, 2002).

Another study by Bruning and Ledingham (2002) emphasises the importance of understanding the actions that the public and the organisation must undertake to initiate, maintain, and develop their relationships. Within this context, it is argued that relationships must be mutually beneficial for both parties to be sustainable and effective. Although Ferguson's call for attention to relationships has introduced novel perspectives in the field of PR, prior research has primarily focused on examining organisation public relationship (OPR).

In light of Ferguson's suggestion, PR scholarship has primarily directed its attention toward PR. However, when applied to crisis communication, relationships are seen as dynamic entities, influencing the way the public or organisation response to the crisis. Previous research in crisis communication has primarily concentrated on understanding crisis characteristics and identifying appropriate crisis communication strategies, including response types, crisis types, and responsibility types. Nevertheless, scholars like Coombs and Holladay (2001) have explored the connection between relationships and crises. In contrast to other PR scholars, crisis researchers do not view the relationship variable as a dependent variable. Rather, they investigate how relationships influence the public's perception of crises and acceptance of crisis strategies. Trust is again crucial here as it facilitates a quick and smooth recovery from a crisis. For instance, stakeholders who trust the organisation are more likely to follow the guidance, and explanation, and remain loyal during and after the crisis. It is essential to delve deeper into the dynamics of relationships within the crisis context to advance the understanding of crisis communication. Exploring the role of relationships in shaping public perceptions and responses during crises offers valuable insights into effective crisis communication strategies. This approach underscores the significance of relationships as critical factors in crisis communication, shedding light on the interplay between organisational actions, public perceptions, and relationship dynamics. By expanding the scope of research to encompass relationship perspectives in crisis communication, PR scholarship can contribute to developing comprehensive and effective crisis communication practices.

2.3.2 Integrating Relationship Management in Crisis Communication

Understanding the nuanced intersection between relationship management and crisis communication reveals the implicit demand for methodologically sound approaches to organisational communication, especially during tumultuous times. Ledingham (2003) accentuated that Relationship Management Theory (RMT) becomes pivotal not only in orchestrating effective management practices but also in diligently calibrating goal setting,

program planning, and subsequent evaluation in a PR context. It is important to argue that relationship management transcends mere communication in crises. It requires strategic management to maintain a strong relationship with stakeholders to navigate the uncertainty of the crisis. However, it necessitates a deeper delve to decipher which principles of RMT stand pertinent in crisis communication. Generally, it orbits around mutual trust, openness, involvement, investment, and commitment to adapt and grow amidst evolving circumstances and stakeholders' expectations (Ledingham, 2003). Coombs (2000) substantiated that these precepts of relationships, wrought with complexity, do weave into the fabric of crisis communication but necessitate elucidation on its applicability. Efficacious crisis communication is anchored in an organisation's ability to establish, foster, and maintain constructive relationships with its public (Ledingham, 2003). A positive organisational-public relationship, grounded in trust and mutual understanding, not only fortifies an organisation's standing in normative times but also serves as a bulwark during crises, facilitating smoother dissemination and acceptance of crisis messages among its stakeholders (Coombs, 2000; Hon & Grunig, 1999). Conversely, organisations mired in contentious relationships with the public often grapple with exacerbated challenges during crises, stemming from pre-existing scepticism and potential opposition from their stakeholders (Hon & Grunig, 1999). Hence, assiduously cultivating and sustaining robust relationships transcends mere PR practice, emerging as a quintessential element that intertwines with crisis communication, thereby influencing the trajectory of crisis management and mitigation efforts. Operating as a cornerstone in crisis communication, Trust here fosters the goodwill of stakeholders in recovery efforts (Coombs, 2007).

Given that crises are characterised by their unpredictability and potential to harm an organisation's employees, reputation, and goals, people naturally attribute crisis responsibility to organisations based on dimensions of the attribution theory: external control, locus of causality, personal control, and stability (Coombs, 2000). Additionally, the relationship between an organisation and the public provides a valuable context for interpreting crises. The history of the relationship, influenced by how organisations have treated the public in the past, significantly impacts crisis communication. For example, an organisation with a longer history of positive relationship is more likely be given the benefits of doubt by its stakeholders during the crisis. Coombs (2007) argues that an organisation's crisis response strategy should be informed by how the public perceives the organisation's relationship history. Positive relationship histories enhance trust and support during crises, while negative histories can breed scepticism and resistance. Thus, understanding relationship dynamics and historical context is pivotal in determining appropriate crisis response strategies.

In the realm of crisis communication, the application of a theoretical framework that incorporates a relational approach is crucial. Coombs (2012) posits that analysing crisis episodes from a relational perspective provides valuable insights. To support this argument, Coombs employs attribution theory, which explores how individuals seek to attribute causes to events. This is particularly pertinent in crises, characterized by their unexpected, unpredictable, and non-routine nature, often resulting in potential harm to an organisation's employees, reputation, and goals. According to attribution theory, individuals naturally attribute causes to unexpected events to effectively cope with them (Weiner, 1985). When a crisis occurs, people tend to assign crisis responsibility to an organisation based on four dimensions of attribute theory. The first dimension, external control, pertains to whether someone else can control the event's cause (Coombs, 2000). The second dimension, locus of causality, examines whether the cause lies within the organisation or is related to external circumstances. The third dimension, personal control, explores whether the organisation could control or prevent the event. The fourth dimension, stability, considers the frequency or likelihood of similar events occurring in the future (Coombs, 2000). In addition to the elements of attribution theory, the relationship between an organisation and the public plays a critical role in interpreting a crisis (Coombs, 2007). The history of the relationship depends on how the organisation has treated the public in the past, which shapes perceptions during a crisis. Coombs suggests that organisations can select an appropriate crisis response strategy based on how the public perceives the historical relationship with the organisation. Considering the significance of relationships in crisis communication, it becomes imperative to understand the theoretical framework that underpins their application. By adopting a relational approach and utilising attribution theory, researchers and practitioners gain insights into how the public attributes crisis responsibility and how past relationships influence crisis perception. These frameworks provide valuable tools for organisations to strategically manage crises and navigate the complexities of PR. However, further empirical research is needed to explore the practical implications of relationship-based crisis communication strategies and their effectiveness in different organisational contexts.

Furthermore, the impact of relationships extends beyond the development of crises and encompasses the crisis communication process itself (Bridges & Nelson, 2000). The relationship between an organisation and the public can shape the public's perception of a crisis. Communication practitioners are crucial in guiding and influencing the public's perception through strategic communication efforts (Lee, 2008). Organisations can select appropriate crisis communication responses that align with the public's perception and needs by understanding the dynamics of relationships and utilising a relational approach. Grunig and Huang (2000) emphasise the significance of PR in maintaining and cultivating

positive relationships with the public. They advocate for a relational approach to crisis communication, emphasizing its value in helping organisations effectively navigate various crises. Despite recognising relationships in PR, limited research has explored the practical effects of relationships in crisis communication. Previous studies have overlooked the influence of organisational PR (OPR) and the role of inter-organisational PR (IOR) in shaping the evaluation and perception of crisis communication. It is important to acknowledge that multiple organisations, including the media, non-governmental organisations (NGOs), government entities, activists, and individuals, are involved during crises. These diverse stakeholders necessitate a comprehensive examination of crisis communication, focusing on organisational PR (OPR) and inter-organisational PR (IOR). By exploring the intricate relationships and interactions among these entities, a deeper understanding of crisis communication within PR can be achieved. This study aims to fill this gap by critically examining the crisis communication strategies employed by Saudi organisations on the X platform during the Covid-19 pandemic, considering the interplay of organisational and inter-organisational relationships.

In the exploration of crisis dynamics and consequential responses, swift and calculated decision-making emerges as a vital component, particularly amidst the ambiguity inherent to crisis situations. A crisis, by its disruptive essence, infiltrates multifaceted systems, necessitating the media's engagement and scrutiny (Bajouk & Ferré-Pavia, 2023). However, delineating credible information sources remains a complex task in such turbulent periods (Jiang & Tang, 2022). While there is a semblance of public reliance on politicians, scientists, and professional bodies (Tian & Yang, 2022), the onus of articulate crisis communication predominantly rests with public administrative bodies and pertinent media entities (Jiang & Tang, 2022). The specificity of responsibility, however, is contingent upon the nature of the crisis; internal organisational crises may necessitate divergent channels of accountability and communication. Moreover, media entities serve a crucial function in crisis narratives by accentuating and contextualizing the crisis in accordance with the perceived severity, thereby impacting subsequent crisis management approaches (Krishnan et al., 2022). As emphasised by Infante and Mardikaningsih (2022), media outlets, with their access to diverse information reservoirs related to crises, hold substantial sway in determining the focus and framing of such events, influenced by the relative sensitivity of the disseminated information.

Given this context, it is argued that a range of stakeholders is required as the crisis unfolds not only to disseminate information but also to shape the public's understanding. In

this regard, it is important to understand the role of stakeholders in effective crisis communication.

2.3.3 Stakeholders Involved in Communication During Public Health Crisis

In scholarly discourse on public health crisis management, the concepts of stakeholders in risk communication and public health crisis are intricately interwoven yet distinct in their ramifications and focus (Covello, 2003). Stakeholders in risk communication essentially refer to the entities actively involved in the exchange, processing, and interpretation of information related to potential health risks. This communication paradigm emphasises mutual dialogue and understanding among diverse stakeholders, such as health experts, government agencies, and the affected populace, aiming to facilitate informed decision-making and to foster a sense of shared responsibility (Reynolds & Seeger, 2005). Conversely, a public health crisis denotes a large-scale and immediate threat to communal health, requiring coordinated efforts from various stakeholders for its containment and resolution. The convergence of these concepts is manifested when stakeholder-driven communication serves as an instrumental mechanism to navigate through public health crises, aligning disparate stakeholder interests and promoting synergistic action for crisis alleviation. It's crucial to delineate the differential and complementary aspects of these constructs to enrich the analytical depth and pragmatic relevance of health crisis research and interventions.

In navigating the myriad complexities of pandemic management, stakeholder engagement emerges not merely as a participative strategy but as an intrinsic component that permeates the decision-making, strategy formulation, and risk communication processes (Jardine, 2008). Stakeholders, defined as entities be they groups, individuals, or social actors that are substantively impacted by or have an impact on decisions, strategies, and risk processes, function as pivotal nodes within the informational and communicational networks (Freeman, 1984). These entities do not simply act as passive receivers or conveyors of information; rather, they represent dynamic, evolving participants whose roles and influences perpetually shift throughout the risk management process (Jardine, 2008). Integrating stakeholder engagement into communication is imperative, as this inclusivity fosters a more nuanced understanding of risks by amalgamating diverse perspectives and insights, thereby enhancing the credibility and trust accorded to the organisation (O'Connor et al., 2003). This engagement, however, should not merely be tokenistic or performative. It necessitates a genuine consideration of stakeholders' interests, concerns, and inputs throughout the organisational decision-making trajectory, engendering a collaborative ethos

wherein stakeholders are not merely consulted but are actively involved in co-creating strategies and solutions (Ndlela, 2018). This mutuality, where stakeholders share a collective responsibility for outcomes and missteps, predicates a reciprocity wherein their contributions are acknowledged, and their voices are substantively integrated into the organisational processes, ensuring that their exertions are not merely recognised but are strategically and ethically valorised.

In the context of public health crisis communication, the engagement of multiple stakeholders is imperative, given the inherent complexity and far-reaching impact of such crises, encompassing national, regional, and global dimensions (Ndlela, 2018). This need for comprehensive stakeholder involvement is exemplified by the ongoing Covid-19 pandemic, which underscores the critical importance of partnerships across various levels. The engagement of diverse stakeholders in public health crisis communication serves to facilitate the exchange of information, allocation of resources, and collaborative decision-making processes, thereby enhancing the efficacy of crisis communication and management strategies. Ndlela (2018) identifies several key stakeholders within this framework. Decision makers and policymakers, represented by health ministries, practitioners, and relevant agencies, are responsible for establishing the essential frameworks and policies that guide health service delivery. Moreover, collaborations and partnerships between governmental and non-governmental organisations, including influential figures, assume a pivotal role in navigating the complexities of crisis communication. Additionally, service providers are responsible for the practical implementation of healthcare and preventive services, while the contribution of manufacturers and suppliers of medical resources and pharmaceutical companies is indispensable in ensuring a comprehensive response to a pandemic crisis (Ndlela, 2018).

Once stakeholders are identified, it is crucial to tailor crisis information to their perspectives. Consistent and transparent engagement with stakeholders is essential for building trust. Trust is of utmost importance in public health crisis communication, as a lack of trust can negatively affect public health (Cairns et al., 2013). People may turn to untrustworthy or unscientific sources of information, undermining effective crisis management efforts (Paulik et al., 2020). Community stakeholders play a significant role in implementing pandemic outbreak measures. During the Ebola virus disease outbreak in Sierra Leone, community-based stakeholders successfully implemented community care isolation centres and related initiatives (Miller et al., 2018). Community leaders collaborated closely with the MoH, UNICEF, and district health management and helped establish and staff community care centres. Community engagement and dialogue sessions were

conducted with various stakeholders, including religious leaders, midwives, and community chiefs, to discuss outreach strategies and key messages related to the pandemic. This government strategy aimed to foster confidence and trust within local communities, empowering community members to respond sensibly to the outbreak. In addition to reducing suffering, this approach provided psychological and social support to community members (UNICEF, 2015).

2.4 Crisis Communication

According to Coomb (2015), crisis communication is "the collection, processing, and dissemination of information required to address a crisis situation" (Coombs, 2015, p. 38). The conceptualisation of crisis communication by Coombs underscores the strategic deployment of words, phrases, and actions to navigate meaning and information through the turmoil of crisis. The adoption of this definition in this discourse does not imply its unquestionable superiority or universal applicability but rather serves as a pivotal reference point for the ensuing discussion. Crisis communication is a multifaceted concept, with varying definitions focusing on different aspects such as the modulation of messaging (Coombs, 2007; Ulmer et al., 2010), information dissemination (Zimal & Aysar, 2021), and stakeholder engagement (Barton, 2001). The choice of utilising Coombs' definition is rooted in its encompassing approach to managing both meaning and information during a crisis, which is critical for maintaining trust and managing perceptions. However, it is imperative to continuously scrutinize, interrogate, and reflect upon the selected definition in relation to alternate viewpoints to construct a more nuanced understanding of crisis communication and its varying manifestations and interpretations in the field. This definition provides a broad view of crisis communication, which can be revised and refined based on the specific circumstances and scenarios of the crisis.

As a subset of crisis management, the focus of crisis communication is to disseminate accurate and clear information timely. Crisis management encompasses a broad range of activities during the crisis, such as recovery, mitigation, and prevention, crisis communication, on the other hand, manages the flow of information. In other words, crisis management involves logistics and operational coordination, while crisis communication deals with the engagement between stakeholders and the public (Coomb, 2007). Therefore, it is argued that crisis communication has a narrow scope within a broader crisis framework.

It is important to note that a crisis is not a single event or occurrence but rather a complex process with different phases. While some scholars argue that crises are not

always linear but rather complex processes (Roux-Dufort, 2007), crisis communication evolves and adapts as the crisis unfolds, and its perception changes over time. Crisis communication is closely intertwined with the crisis process, as different phases of a crisis demand specific communicative strategies from crisis managers (Coombs, 2015, p. 100). For instance, the pre-crisis stage revolves around information collection about crisis risk, making decisions accordingly, and training those involved in managing the crisis. The training includes the entire crisis team, i.e. crisis spokespersons or individuals helping with crisis response. Crisis communication involves the processing of information and crisis messages from the crisis team to people outside of the team. Post-crisis involves follow-up messages if required along with communicating necessary changes to people.

Crisis communication encompasses two integral elements: managing information and managing meaning. Managing information involves collecting and disseminating information, both internally and externally. Internal information management focuses on the efforts of the crisis team to gather and process information to aid in decision-making (Dave & Scott, 2010). External information management involves warning stakeholders about the dangers associated with the crisis (Coombs, 2015, P. 38). While managing meaning is a central component in crisis communication, posited by Coombs, it is pivotal to discern the dichotomy between the communicator's intent and the public's interpretation. Communicators can indeed shape messages with the intent to manage perceptions, but the ultimate interpretation and perception of such communications reside with the public. Thus, the interplay between conveyed messages and received meanings involves nuanced processes with different parties having distinct roles.

The effectiveness of crisis communication largely depends on the public's interpretation of meaning (Coccia, 2023; Glenn et al., 2021). Thus, crisis communication is primarily aimed at managing meaning, which can be categorized into three primary aspects: instructing information, adjusting information, and reputation management (Tian & Yang, 2022). Instructing information is focused on guiding individuals to help protect themselves physically during a crisis. This category mainly involves managing information dissemination (Ratten, 2023). For instance, issuing warnings to evacuate a building due to a hazardous chemical release exemplifies instructing information (Podloski & Kelman, 2023). On the other hand, adjusting information pertains to messages that help individuals cope psychologically with the crisis. This category involves a combination of meaning-making and managing information. Expressions of sympathy, counselling, and therapy are examples of adjusting information. In the realm of crisis management, a particular emphasis is placed on those crises involving victims, such as natural disasters, terrorist attacks, or health

epidemics. Sturges (1994) highlighted that in such situations, crisis managers should primarily adopt both instructing and adjusting information approaches. These strategies underscore their commitment to the welfare of the victims, aiming to provide timely and accurate guidance, and adapting responses based on evolving circumstances and needs. It is pivotal to note that while not all crises necessarily have direct victims, the strategies mentioned above are most pertinent to scenarios where immediate human harm or threat is evident. Lastly, crisis communication involves reputational management, which aims to repair or mitigate the reputational damage caused by the crisis. Coombs (2015) categorizes reputational management strategies into four categories: denial, diminish, rebuild, and bolster. Denial and diminished strategies focus on managing meaning by influencing how the crisis is perceived by blaming others or denying responsibility. Rebuild approaches involve positively addressing victim concerns, such as apologising or compensating. Bolstering strategies seek to associate positive messages and actions with the organisation, highlighting the organisation's positive contributions to the public (Coombs, 2015, p. 139). These rebuilding and bolstering strategies aim to shape the public's perception of the organisation during the crisis.

Crisis communication is influenced by impression management, image restoration, and apologia (Benoit, 1995; Coombs, 2006; Frandsen & Johansen, 2010; Schwarz, 2008). Arendt et al. (2017) conducted a comprehensive review of over 100 peer-reviewed research articles on crisis communication, corroborating the viewpoint put forward by (Coombs, 2015). Coombs (2015) acknowledges that crisis response strategies have traditionally heavily relied on apologies (Coombs, 2015, p. 273). The theory also emphasises the need to defend against blame attribution, which Coombs terms "crisis responsibility" (Coombs, 2015, p. 267). Furthermore, crisis communication encompasses a range of practices and functions that closely intertwine with the field of PR. Overall, the critical examination of crisis communication within the framework of PR via the X platform in the context of Saudi organisations during the Covid-19 pandemic necessitates a thorough understanding of crisis response strategies, the role of media, and the influence of impression management, image restoration, and apologia. By exploring these dimensions, researchers can gain valuable insights into effective crisis communication strategies and shed light on the complexities surrounding crisis management in today's highly interconnected and media-driven world.

Effective crisis communication, a term recurrent in scholarly dialogues, is multifaceted and extends beyond the mere timely transmission of information during crises. While the promptness of communication, as emphasised in numerous studies, is undoubtedly critical in crisis management scenarios (Arpan & Pompper, 2003), the essence

of 'effective' communication is more comprehensive. It encapsulates the accuracy, clarity, and relevance of the disseminated information, coupled with the adoption of appropriate communication channels, to reach the affected populations and other pertinent stakeholders. Moreover, effective crisis communication necessitates a proactive stance—disclosing crisis-related information early and pre-emptively to mitigate potential damage and mistrust. Such communication is not about 'Stealing thunder' denotes prematurely revealing issues to control narratives and reduce reputational harm, but about fostering transparency, building trust, and facilitating informed and collective responses to the crisis at hand. The multifarious nature of effective crisis communication underscores the importance of nuanced understanding and strategic implementation of communicative processes in crisis contexts (Sanjeev et al., 2021). Claeys and Opgenhaffen (2016) interviewed senior communication managers on stealing thunder and identified three reasons crisis managers engage in this behaviour. Firstly, some managers may hesitate to act promptly, preferring to handle the crisis internally to avoid public disclosure. Secondly, stealing thunder is seen as situational rather than an absolute strategy, depending on the external concerns and potential harm associated with the crisis. Lastly, managerial and legal implications regarding the perceived value of stealing thunder are considered. However, it is important to note that the efficacy of stealing thunder has limitations and depends on the nature of the crisis. For instance, in a crisis like the Covid-19 pandemic, crisis managers cannot afford to steal thunder; instead, urgent action and timely communication are imperative.

To determine the effectiveness of crisis communication, it is pivotal to assess the alignment of the response strategies with the objectives they are designed to accomplish. This involves evaluating the extent to which the conveyed messages reduce uncertainty, alleviate stakeholder concerns, and encourage beneficial behaviours, with a focus on maintaining or restoring reputation and stakeholder trust. Additionally, the effectiveness of crisis communication can also be gauged through the analysis of subsequent stakeholder perceptions, responses, and behavioural adjustments following the implementation of crisis response strategies (Coombs et al., 2015). In essence, effective crisis communication is multifaceted, combining strategic alignment, empathetic conveyance, and stakeholder-centric approaches to achieve optimal outcomes in crisis mitigation.

2.4.1 Emergency and Risk Communication

As a subset of crisis communication, risk and emergency communication share common objectives and encompass various dimensions, a point underscored by Reynolds and Seeger's seminal work in 2005. Crisis communication primarily concentrates on the

effective management of crisis events while simultaneously safeguarding the reputation of organisations. Conversely, risk communication is primarily concerned with the mitigation of risks and the prevention of emergencies through the exchange of information and persuasive efforts (Coombs, 2007). Crisis communication is communication during the crisis to maintain trust and convey important information, while emergency and risk communication focuses on conveying information about potential risks to public health. The distinction between the two lies in its focus and timing. While risk communication is proactive, crisis communication is reactive. Yet, both rely on effective communication strategies to ensure that the public understands the provided messages.

Renn (2008) expands upon this conceptual framework by incorporating elements such as information-seeking behaviour and the provision of health advice within the broader context of risk and emergency communication. Reynolds and Seeger (2005) present an extensive approach known as Crisis and Emergency Risk Communication (CERC), which encompasses the pre-crisis management to post-crisis recovery. This lifecycle commences with the pre-event stage, advances through the unfolding of the crisis, and extends to the post-crisis period, including the cleanup and recovery phases. The language also shifts from technical risk assessment at the pre-crisis stage to action-oriented and emphatic messages during the crisis, and trust-building narratives at the post-crisis stage. CERC, by addressing the multifaceted risks faced by society and its various stakeholders, provides a comprehensive framework for managing crisis and emergency communication. Importantly, this framework holds relevance in the context of infectious disease outbreaks and epidemics, making it highly applicable to persistent crises such as the ongoing Covid-19 pandemic where both risk and crisis communication are needed not just medical facts but also to address the public's cultural, emotional, and social concerns. Therefore, in the next section, a more in-depth discussion on the CERC will be given.

The interplay between risk and crisis communication is particularly visible in previous public health emergencies. Within the paradigm of recent pandemics, the ascension of community-based risk communication has been palpably noted, a learning scaffolded from previous health exigencies such as the Anthrax crisis and pandemics induced by the Ebola virus, SARS, and H1N1 influenza (Zimmerman et al., 2016). These crises highlighted the importance of public engagement in communication during crises, emphasizing the need for strategies tailored to address cultural, social, and community-specific barriers. This tailoring plays a critical role in influencing the acceptance and continued use of mitigation measures across diverse populations (Quinn et al., 2013). Language, framing of the message, and tone are critical, ensuring that communication is not only lucid but actionable and relatable.

Community-based risk communication, with its inherent interactive modality, facilitates perpetual bi-directional community engagement throughout every phase of infection mitigation, aspiring towards sustainable practices and behaviours amidst the societal entities throughout the crisis trajectory (Freimuth et al., 2014). Embracing a bottom-up methodology, risk communicators encourage the public to participate in the decision-making process, thereby reinforcing their role as problem-solvers (Utami, 2021). Zimmerman et al. (2016) posit that embedding the community within this socio-ecological framework engenders a bi-directional interaction, encompassing an array of elements from health statistics to behaviours and intentions, thereby perpetuating an unbridled dialogue between the community and leadership entities. This framework suggests that crisis communication is not a uni-directional flow of information but a continuous reciprocal process that accommodates the public's feedback and its cultural context. This approach to communication helps building sustainable behaviours and practices that persists even after the crisis. To sum up, I argue that the relationship between risk and crisis communication lies in their shared reliance on the use of language, narrative, and message to influence public behaviour. Crisis communication is reactive and immediate, risk communication, on the other hand, prepares the public for potential hazards. However, the success of both depends on its ability to craft a persuasive and clear message that resonates with the public.

2.4.2 Crisis and Emergency Risk Communication (CERC) Framework

For this study, the primary theoretical lens adopted is the Crisis and Emergency Risk Communication (CERC) framework, which offers a robust foundation for understanding the intricacies of emergency risk communication during crises.

The CERC framework, developed by the US Centres for Disease Control and Prevention (CDC), provides crisis, emergency, and disaster communication guidance (CDC, 2018). It consists of five stages: pre-crisis, initial, maintenance, resolution, and evaluation. The pre-crisis stage focuses on message development, relationship building, partnership establishment, policy creation, and community engagement in preparation and planning. In the initial stage, efforts are made to reduce uncertainty by providing information about emergency management, crisis circumstances, and action-oriented messages. The maintenance stage involves ongoing risk communication, including the provision of background information, addressing misinformation, and segmenting audiences based on risk. The resolution stage promotes vigilance, evaluates plans, and fosters community preparedness for future crises. Finally, the evaluation stage focuses on assessing the overall effectiveness of information and crisis communication strategies.

According to the CERC model, crisis communication is the strategic process of informing and alerting the public about unforeseen circumstances that are beyond the control of organisation and demand an immediate response. CERC emphasizes that the message purpose during a crisis is to "explain, persuade, and empower decision-making" (p. 5) and proposes six principles of effective communication: 1) be first, 2) be right, 3) be credible, 4) express empathy, 5) promote action, 6) show respect. Aligning with Coomb's notion of Reputational Management (2015), there is a risk of reputational harm to the organisation. Coomb's crisis management strategies include denial, diminishment, rebuilding, and bolstering. Among these, denial and diminishment focus on managing the public perception by either disclaiming responsibility or displacing blame. While rebuilding focuses on addressing the concerns of victims through the act of apology or offering compensation, bolstering seeks to emphasize the organisations' positive contribution to the public as illustrated in the messages of X in the proceeding chapter.

CERC combines crisis communication and risk communication and translates into practice in the form of the CERC model. This blended form of communication foregrounds "the developmental features of crisis and the various communication needs and exigencies of audiences at various points in the ongoing development of an event" (Reynold and Seeger, p. 49). It is initiated with the prevent stage of crisis, moving through the triggering event during the crisis phase, followed by a clean-up phase. For this reason, the scope and breadth of this model are broader in comparison to other traditional models. For instance, during the pre-crisis stage, audiences are educated regarding the potential threat to encourage them and prepare them for risk-reducing behaviours. This blended form of communication also incorporates the principle of effective risk communication. The CERC model works systematically: from risk to eruption, to recovery, followed by evaluation. This systematic approach reduces uncertainty and allows crisis managers to anticipate the needs and problems well. Not all crisis follows the same pattern due to a variety of factors. However, most epidemics and infectious diseases follow the same pattern. To sum up, this model acknowledges that crisis communication begins long before the events erupt and continues even after the immediate threat subsides.

The effectiveness of the CERC model is strengthened by drawing lessons from previous public health emergencies and incorporating insights from psychology, public health, and emergency risk communication. One key aspect of this approach is the active engagement of the community in the design and implementation of risk communication strategies. A sense of ownership is fostered by involving the community, ensuring the sustainability of the response to pandemics. Scholars such as Leach et al. (2010) and

Schiavo (2014) emphasise the importance of language and narrative, culturally resonant story-telling, further supporting the relevance and efficacy of the CERC model.

In contrast to other crisis models, CERC proves to be a staged and comprehensive approach. For instance, Coomb's (2015) Situational Crisis Communication Theory (SCCT) emphasizes primarily the organisation's reputation during the crisis. Given this context, SCCT is valuable in highlighting organisational strategies, it does not consider the broader public health communication that arises in a situation like a pandemic. Although reputational management is quite significant, the scope of COVID-19 requires a comprehensive model - one that considers the reputation of the organisation as well as the well-being of the public. In this regard, the CERC model is chosen for this research as it encompasses both the long-term and immediate communication of health emergencies, addressing engagement, public perception, and behavioural change. Further, the CERC model incorporates insight from public health, psychology, and risk communication, making it the most suitable for public health crises (Reynolds, & Seeger, 2005). For instance, misinformation spread rapidly during the Covid-19 pandemic and the Saudi government not only managed the transmission of accurate information but also countered the false information.

The CERC model is also selected because of its ability to communicate beyond the crisis itself. According to Zimmerman et al. (2016), CERC is significant owing to its ability to manage the ongoing crisis. A crisis like Covid-19 needs continuous crisis communication after the initial phase subsided to reinforce public vigilance and public health measures. In this regard, the CERC model is not only reactive but also proactive, preparing the public for future pandemics. Considering that the CERC model focuses on effective message propagation, audience engagement, and risk reduction, it proves to be a comprehensive approach to understanding Saudi stakeholder's response to covid-19.

2.5 Crisis Communication via Social Media

Vos et al. (2018) introduce a model that contemplates social media risk communication, positing that the propagation of risk messages via these platforms is contingent upon multiple factors, including the nature of the sender's account, the specific message topic, intrinsic message characteristics, and the configuration of the network that encompasses the account followers. Crisis communicators, thus, must engage in a meticulous analysis and strategic adaptation of their messages, ensuring alignment with these determinants, while specifically catering to the distinct socio-cultural, cognitive, and communicational nuances inherent to the targeted communities. For instance, the authentic, relevant, and

comprehensible crafting of messages, alongside judicious selection and utilisation of communicative channels that resonate with specific community norms and preferences, can potentially enhance message receptivity and impact (Oyeyemi et al., 2014).

The digital revolution, particularly the ascendancy of social media platforms, has dynamically reconfigured the contours of crisis communication. By empowering individuals to don the roles of citizen journalists, watchdogs, and photojournalists, social media has democratized information sharing, enabling real-time documentation and dissemination online (Cornelissen, 2020; Ellerup Nielsen & Thomsen, 2018). This metamorphosis in information sharing has markedly altered the operational nuances of crisis communication. Specifically, the shift is characterized by the erosion of traditional time and spatial boundaries that once limited immediate communication. Crisis narratives are now being crafted, revised, and relayed without delay, underscoring the ubiquity and immediacy emblematic of the digital age. Aligning with this perspective, the American Public Health Association accentuates the transformative impact of social media on risk communication. They advocate for a comprehensive re-evaluation of extant communication blueprints, emphasizing the indispensable role of social media during emergencies. Within this paradigm, social media is not just an auxiliary tool but a vital conduit for swiftly disseminating pivotal information to a vast, interconnected audience.

Integrating digital channels in crisis communication has become increasingly important in modern times. Crisis managers are still exploring the most effective ways to utilise these digital channels in their communication strategies. Traditionally, crisis communication primarily relied on television and print media, with news reports shaping public perception of an organisation's crisis response (Barton, 2001). However, with the emergence of digital channels, researchers in crisis communication have begun to investigate the potential utility of these new platforms. The literature review conducted thus far has identified two main uses of digital channels: 1) monitoring public reactions to the crisis and 2) monitoring public reactions to crisis communication efforts. Choi and Lin (2009) were among the first researchers to examine how digital channels can be used to assess public reactions during a crisis. Through coding various emotions expressed on online bulletin boards, they found that these platforms provided valuable insights into the emotions evoked by the crisis (Choi & Lin, 2009, p. 129). Goswami et al. (2022) have also researched integrating digital media channels in crisis communication. While there are numerous studies on using digital media channels in crisis communication within the corporate context, only a few studies have focused specifically on using these channels in crisis communication from a PR perspective. This research contributes to the existing body of literature by examining

the use of digital media channels, particularly X, in crisis communication with a special emphasis on PR.

Social media platforms have substantially reshaped the domain of crisis communication, catalysing a convergence and participatory engagement of individuals that amalgamates both innovative and traditional modalities. (Hughes et al., 2008) articulate that while social media dismantles temporal and geographical impediments, thereby amplifying participation in crisis communication, the foundational modes of participation ostensibly retain their traditional character, albeit now entertained by an augmented number of participants. However, to delve deeper into the assertion that behaviours manifested on social media during crises parallel offline behaviours, it is indispensable to discern and elaborate on the nuances between various physical actions and psychological states experienced by participants. For instance, anxiety and curiosity, as opposed to being behaviours, are arguably mental states induced by the prevalent crisis situation, demanding a clear demarcation from actual behaviours such as offering support or assistance (Pfefferbaum et al., 2014). The convergence, in this context, may be described as a synthesis of social actions and psychological states, wherein the virtual sphere and physical space potentially harmonize into a seamless continuum of crisis response and communication (Palen & Hughes, 2018). Precise dissection of this convergence reveals a tapestry interwoven with tangible behaviours such as support provision, exploitation, and recovery efforts, alongside emotional or mental states including anxiety, curiosity, and mourning. Consequently, in conceptualising and implementing crisis communication strategies, particularly within the realm of social media, it is not necessitated to completely revamp existing strategies. Rather, a meticulous reframing of messaging, cognizant of the nuanced divergences and convergences between online and offline participatory dynamics and mental states, is imperative to efficaciously engage with diverse target audiences, such as affected communities or global onlookers, each with their distinct informational needs and emotional bearings (Veil et al., 2011).

Integrating social media into crisis communication plans has become commonplace among many global organisations. A notable example occurred during the 2010 earthquake in Haiti, where traditional media outlets were unavailable, and social media emerged as the primary source of information for the outside world. The effectiveness and overwhelming response through social media prompted the state department's establishment of Haiti's Social Media Disaster Monitoring Initiative, aiming to promptly gather crisis-related information (Panagiotopoulos et al., 2016). Similarly, security centres worldwide have leveraged social media in rescue efforts and disseminating crisis information. For instance,

the Centre for Disease Control (CDC) utilised social media platforms to post information about hurricanes, reaching a wide audience (Finau et al., 2018). During the salmonella outbreak in 2009, the CDC's social media communications were recognized as highly successful by official authorities and hailed as an integral part of crisis management (American Public Health Association). The Federal Emergency Management Agency (FEMA) has also utilised X and blogs to raise public awareness during crises (Flew, 2019). Furthermore, social media platforms empower the public to actively participate in awareness campaigns (Lin & Kant, 2021).

González and Smith (2008) propose several steps to strengthen crisis communication by including social media. In the pre-crisis phase, new technologies can be leveraged to monitor and manage potential crises. As González and Smith (2008) assert, early identification of issues and a prompt, transparent, and honest response are crucial in preventing issues from escalating into full-blown crises and the distortion of facts through rumours. Conducting an early analysis of web-based content can provide valuable insights and serve as an early warning system, enabling organisations to develop appropriate plans and responses to avoid unfavourable situations (p. 4). During the crisis phase, they recommend utilising the internet as a platform for third-party information, such as blogs and chat tools, to initiate and foster stakeholder dialogue. Additionally, interactive tools like mini surveys can gauge stakeholders' views and perceptions. Social media platforms also offer opportunities to collect and disseminate information effectively (González & Smith, 2008).

By integrating social media into crisis communication strategies, organisations can adopt a new crisis communication model that addresses the unique characteristics of these platforms. It is crucial to consider the target audiences and their preferences throughout the different phases of a crisis. Not all audiences may be equally familiar with social media; in some instances, traditional communication channels may be more appropriate. Conducting surveys during the pre-crisis stage can provide valuable insights into audience behaviours and preferences, informing the organisation's communication strategies accordingly (González & Smith, 2008). In the post-crisis phase, organisations can utilise social media to actively monitor online media, including blogs and social media platforms, to assess public sentiment and perceptions. Expressing gratitude through online thank-you notes to individuals who contributed to crisis management efforts can also help strengthen organisational reputation (González & Smith, 2008).

In times of crisis, one of the primary needs for individuals is to find order amidst chaos, a process referred to as "sense-making" (Weick, 1988). Social media users play a crucial role in this sense-making process by sharing textual updates, photographs, and event

videos. Hughes et al. (2020) note that sharing photos during crises serve informative, newsworthy, and therapeutic purposes. The widespread availability of digital cameras and photo-sharing websites has expanded the arena for sharing photographic information, enabling greater participation and contribution to the crisis communication process (p. 1). This photographic information facilitates sense-making among social media users and provides critical insights to crisis managers, communicators, and stakeholders, aiding their understanding and response to crises. The accessibility of photos and videos through social media, facilitated by mobile technology, has brought about a significant transformation in crisis communication. Social media, while not a panacea for all crisis-related challenges, plays a pivotal role as a rapid information dissemination and exchange tool. This transformation has reshaped the entire landscape of crisis communication. In the past, organisations allocated substantial resources to maintain a physical presence on the ground during crises, as well as in regular circumstances, as a preventive measure against potential crises. In today's context, social media platforms have emerged as cost-effective and influential channels. Nevertheless, the crux of effective crisis communication lies in the careful planning and organisation of strategies to achieve the desired outcomes during times of crisis (Stark et al., 2014).

However, alongside its advantages, the rapid and easily accessible nature of social media can also pose disadvantages. Social media can potentially exacerbate and facilitate crises by spreading misinformation or negative information, accelerating the news cycle, and transcending geographical boundaries (González & Smith, 2008, p. 9). In such cases, crisis communicators face challenges in controlling the narrative surrounding the crisis. Within the context of crisis communication, when referring to stakeholders, it implies an array of entities including the public, government agencies, non-government organisations, and corporations, all of whom are integral in shaping and disseminating information during crises. It is indeed pertinent to scrutinize not just the propagation of accurate information but also to consider the prevalence and impact of misinformation that can be widely and rapidly disseminated through retweets or shares, emphasising the need for empirical evidence supporting these occurrences (Smith, 2018).

2.5.1 Navigating Misinformation in the Digital Age

During public health crises, the surge of online misinformation is a formidable adversary to effective crisis communication (Mian & Khan, 2020). Integral to crisis communication is the acquisition and subsequent dissemination of credible information, as this informs the public's grasp and interpretation of emergent challenges (Heydari et al., 2021). Yet, amidst

pandemics, the expeditious flow of information often culminates in what is termed an 'infodemic', wherein the public is besieged by a glut of information, with some being inaccurate or misleading, leading to consequential public misperception (Kulkarni et al., 2020). Though social media platforms are pivotal conduits for swift health advisories, especially in critical situations, they simultaneously potentiate the spread of misinformation (Sharma et al., 2017). The intricate task of debunking this misinformation demands a blend of tact and strategy, necessitating the cultivation of trust and fostering relationships to ensure effective communication (Larson, 2020). Instituting a mechanism to streamline the influx of information during health emergencies thereby becomes indispensable.

The World Health Organisation (WHO, 2020) defines infodemics as the overabundance of information, whether accurate or inaccurate, that happened during the crisis. This situation makes it difficult for people to trust reliable resources as it involves the rapid flow of misinformation and disinformation. Kulkarni et al. (2020) underscores the palpable complexity this represents for crisis communicators, especially within a saturated information environment. Within the sphere of public health crises, the astute management of misinformation becomes pivotal, as its unchecked dissemination may detrimentally impact public compliance with authoritative health messaging, thereby exacerbating the propagation of infectious diseases (Badell-Grau et al., 2020). Consequently, crisis communicators must ingeniously weave strategies that not only counteract misinformation but also constructively leverage the informational ecology to buttress and amplify accurate, actionable health information.

To address the challenges posed by the infodemic and utilise social media effectively during public health crises, the SPHER (social media and Public Health Epidemic Response) framework has been developed (Schillinger et al., 2020). The SPHER framework acknowledges that social media can act as both a source of contagion, where misinformation spreads and can harm the public, and as a form of treatment, where social media interventions can mitigate the harm caused by a disease if used appropriately. The SPHER framework guides how risk communicators can utilise social media to deliver accurate information that meets the communication needs of individuals during a health crisis.

An exploration into how digital natives retrieve information and the catalysts driving their informational behaviours is pivotal for crisis communicators. Empirical studies suggest that individual demographics, along with perceptions regarding the crisis, are instrumental in determining chosen information sources (Ali et al., 2020). In fact, primary information sources significantly sculpt individual cognitions concerning the crisis in question (Ali et al.,

2020). At the onset of the Covid-19 pandemic, a diverse populace manifested varied sentiments in response to circulating information (Xu et al., 2020). The initial phases witnessed a climate of trepidation and confusion, primarily spurred by the nascent information matrix of the time (Xu et al., 2020). As health emergencies unfold, unfettered access to veracious health information becomes a cornerstone. In this digital epoch, online mediums, with an emphasis on social media, have arisen as pivotal information sanctuaries (Zhao et al., 2020).

Prominent governmental entities, such as the Centres for Disease Control and Prevention (CDC) in the United States and the World Health Organisation (WHO) on a global scale, have effectively utilised various digital channels, including official websites, social media platforms like X and Facebook, and mobile applications, to communicate vital pandemic-related advisories to their citizens (CDC, 2020; WHO, 2021). However, the magnitude of social media transcends mere information relay, also moulding public sentiments and consequent behaviours about perceived threats. Illustratively, nascent X discourse during Covid-19 was disproportionately skewed towards political and fiscal ramifications, sidelining crucial public health advisories (Medford et al., 2020). Such an inclination towards non-health dimensions can inadvertently foster stigmatizing communication, thereby skewing user perceptions on platforms like X (Li et al., 2020). This underscores the pivotal role of social media and necessitates its judicious utilisation in the blueprint of crisis communication strategies.

A substantial body of literature shows that the spread of misinformation is primarily driven by individuals rather than organisations (Depoux et al., 2020; Kawchuk et al., 2020; Smith et al., 2020). Consistent monitoring of social media platforms is crucial in dispelling and tracking misinformation, and the active involvement of health organisations and professionals in combating false information is essential (Islam et al., 2020).The World Health Organisation (WHO) has utilised its information network and collaborated with social media platforms such as X, Facebook, and Weibo to filter misinformation and track false information related to the pandemic (Smith et al., 2020). Additionally, interactive platforms with real-time alerts and rumours can facilitate proactive and effective responses to address misconceptions associated with the pandemic (Depoux et al., 2020).

Efforts to dispel misinformation by prominent health organisations like WHO, NHS, CDC, and IFRC have shown some success; however, there is still room for improvement in managing misinformation effectively (Malik et al., 2021). The use of celebrity posts, clarification from government officials, and infographics can play a vital role in managing risk

information on social media platforms. Strategies proposed by Jacobsen and Vraga (2020) highlight key challenges in crisis communication, including information overload, information uncertainty, and misinformation.

During crises, such as the Covid-19 outbreak, the dissemination of accurate and trustworthy information is essential in combating the spread of false or misleading information. By prioritising clear and concise messaging, organisations can effectively counteract the information overload that often contributes to the proliferation of misinformation. Additionally, when information uncertainty prevails, acknowledging the limited available information and conveying that it may evolve as the crisis unfolds becomes imperative. This practice helps establish transparency and credibility, further aiding in the mitigation of misinformation, as the public is informed about the dynamic nature of the information at hand (Caceres et al., 2022). Addressing misinformation during crises is critical and involves disseminating accurate information while actively countering inaccurate content. Social media analytics and research can play a pivotal role in this effort, as they enable the identification of populations that might not be adequately reached through online platforms, allowing for alternative methods of information dissemination (Jacobsen & Vraga, 2020). Effective misinformation management necessitates ongoing monitoring, collaboration between health organisations and social media platforms, and the development of clear and targeted communication strategies. By implementing these strategies, public health authorities and organisations can combat misinformation, ensuring that accurate and reliable information reaches the public.

Furthermore, the relevance of this approach to misinformation is underscored by the substantial impact of the Internet on decision-making processes. Previous research, exemplified by Rainie and Fox (2000), has revealed that a significant proportion of internet users are influenced by online information when making treatment decisions. During epidemic outbreaks, individuals often turn to the internet as a rapid and easily accessible source of information, as demonstrated during the 2003 SARS outbreak when disease-related searches dominated internet activity (Morahan-Martin, 2004). Beyond information seeking, individuals actively engage in sharing and seeking health information through online forums and platforms, such as X, which has gained prominence for its real-time capabilities in accessing and disseminating health information. X facilitates discussions, resource sharing, and the formation of online health communities (R Lyles et al., 2013; Van de Belt et al., 2012). The interactive nature of X enables users to participate in conversations, seek advice, and connect with healthcare professionals and others who share similar health concerns. Additionally, X hashtags allow individuals to identify and contribute to ongoing

discussions related to specific health issues (R Lyles et al., 2013; Van de Belt et al., 2012). These online dynamics make the effective management of information and misinformation on platforms like X critically relevant to public health communication during crises.

The survey of the available literature shows that prominent health organisations like WHO, CDC, and NHS have succeeded in dispelling misinformation, however, there is still room for improvement (Malike et.al, 2020). Much of the literature focuses on global efforts to counter misinformation regarding the covid-19 pandemic, there is limited research on how the Saudi government responded to disinformation on platform X. My research aims to fill this gap by examining the strategies used by MoH and MoE to manage disinformation. It is evident in my analysis that both ministries counter the misinformation by employing techniques like directly refuting the false claims, promoting alternative credible sources of information, and timely providing advice. Moreover, my research illustrates the way localized strategies i.e., the role of religion, local cultural references in messaging, religious hadiths reference in messaging, for dispelling misinformation is adapted and implemented in public health crises.

2.5.2 Governmental Social Media Usage Amidst Crisis

In the throes of crisis, government agencies ubiquitously stand at the nexus of information dissemination, delineating crucial directives, and operationalizing concerted public actions (Wukich & Mergel, 2016). The contemporaneous digital age pivots these agencies towards an augmented reliance on social media platforms as vectors for strategic communication during tumultuous periods. This move is particularly pertinent when considering the antecedent scholarship, highlighting the engagement of government entities with pivotal stakeholders across assorted digital platforms (Carroll & Brown, 2022). The rationale for spotlighting government agencies and their use of social media in this research context, especially amid the discourse on functional fragmentation, seeks to delineate the intrinsic complexities and potential ramifications embedded within the informational dissemination processes during crises. This research explores this dynamic by focusing on the Twitter pages of Saudi MoH and MoE during the crisis to examine how government stakeholders communicate with the public.

Articulating a structured approach to governmental social media communication, Lovejoy and Saxton (2012) delineate a triadic classification comprising 'information,' 'communication,' and 'action' each dimension embodying distinct, albeit interconnected, operational imperatives. Contrasting the succinctness of this model, the ensuing narrative explores its pragmatic applicability, wherein 'information' pertains to the specificity and

accuracy of disseminated messages, 'communication' underscores the targeted engagement with demographically and psychotically varied communities, and 'action' entails the orchestration and communication of tangible, situationally pertinent activities, and directives. Gruzd et al. (2018) further substantiate the efficacy of this triadic approach, emphasizing its fruitful implementation on X as a medium adept at efficaciously addressing societal apprehensions. However, the nexus between temporal parameters and public engagement potency on X necessitates a deeper empirical exploration, thereby enhancing the comprehension of the dynamism embedded in digital government-public interactions. The segue into functional fragmentation serves as a conduit to navigate through the potential challenges that permeate governmental social media utilisation. Functional fragmentation typified by disparate use of digital modes across policy arenas, departments, and agencies, inducing inefficiencies in public service delivery (Yi & Cui, 2019) — emerges as a substantial impediment, especially palpable during pervasive crises such as pandemics (Zeemering, 2020). Consequently, a meticulous exploration into strategic navigations, aimed at assuring coordination amongst disparate governmental factions, becomes indispensable to obviate the pitfalls of functional fragmentation and to safeguard the integrity and efficacy of crisis communication.

To mitigate these challenges, government agencies must exercise caution and adopt strategies to avoid functional fragmentation. Mickoleit (2014) asserts that approaching social media systematically, through an institutional lens, can effectively promote government services by engaging the public and driving traffic to government websites. Social media facilitates the dissemination of policies and findings and fosters public engagement, positively influencing public policy (Hancu-Budui et al., 2020). The use of social media is mutually beneficial as it provides the public with direct access to government information while enabling the government to gain insights into public perspectives, thereby informing public policies accordingly (Heldman et al., 2013).

While social media presents an effective tool for government-public engagement, the government must carefully consider the methods of engagement. The government's utilisation of social media platforms raises challenges related to functional fragmentation, particularly during crisis situations (Zeemering, 2020). Functional fragmentation emerges when different departments and agencies adopt social media platforms, resulting in complexities in achieving a consistent and coordinated government response (Bennett & Manoharan, 2017). This fragmentation of authorities across policy areas, services, and departments within a single government leads to inefficiencies and ineffectiveness in delivering public services (Yi & Cui, 2019). Thus, functional fragmentation becomes a critical

issue that hinders a cohesive crisis communication response. Zeemering (2020) conducted an analysis of X data from three cities during the pandemic, revealing the consequences of functional fragmentation in coordinating social media efforts. The research underscores the importance of managerial roles within cities to ensure appropriate coordination of information for the public. The findings indicate that the public relies on the government for resources and information during emergency crises. The study emphasises the need to address functional fragmentation and highlights the significance of effective coordination in providing accurate and timely information to the public.

In the context of the health crisis under examination is significant as they provide tangible illustrations of the ways in which the public actively engages with and expresses their opinions through social media, subsequently influencing decision-making processes. For instance, the study conducted by Harris et al. (2014) delves into the utilisation of social media platforms by local health departments in the United States to disseminate educational information about diabetes. This research underscores the proactive involvement of government authorities in using platforms like X to deliver crucial educational materials to the public, particularly regarding diabetes. By showcasing how health authorities are increasingly harnessing the expansive reach and immediacy of social media for communicating vital health information, this case study serves as a relevant benchmark. However, when these findings are transposed into the context of public health crises, such as the one under current examination, they unveil the potential for varying messaging strategies employed by health authorities. These variations may, in turn, reveal gaps in their emergency social media responses. Therefore, these case studies become pertinent by highlighting the need for further investigation into the utilisation of social media during health crises and the identification of potential shortcomings that may exist in such emergency communication strategies. Furthermore, it is essential to expand upon the concept of "stakeholders" to clarify their identity and significance within this context, as emphasised by Tursunbayeva et al. (2017). Their work underscores the pivotal role of social media as a medium through which various actors, including citizens, advocacy groups, healthcare professionals, policymakers, and government authorities, exert influence on decision-making processes and policy formulation. This recognition of the diverse array of stakeholders and their vested interests underscores the multifaceted nature of the engagement and communication facilitated by social media. As a result, it is crucial to acknowledge these complexities when evaluating the impact and dynamics of social media within the realm of decision-making and health-related information dissemination. In summary, these studies serve to illustrate the real-world implications of social media engagement in healthcare and

underscore the need for a more comprehensive examination of its role in the context of health crises.

2.5.3 X

X, introduced in 2006, has evolved into a vital platform for information dissemination, offering its extensive users' base access to a wide range of global content. Recent data reveals that X, with nearly one billion monthly visitors, 82% of whom access it via mobile devices, has become deeply ingrained in information sharing, including its significant impact in Saudi Arabia where various institutions have utilised it extensively for disseminating critical Covid-19-related information (Chen & Wang, 2021). In Saudi Arabia, governmental sectors have placed particular emphasis on their X communications to address various aspects of the Covid-19 situation and convey essential safety and preventive measures. This practice stands in contrast to public health authorities in other regions like England, Singapore, and the United States, where a preference for using Facebook for Covid-19 communication has been noted (Raamkumar et al., 2020).

X, with 368 million monthly active users as of December 2022 (Dixon et al., 2022) and a consistent increase in adult user engagement over time (Duggan et al., 2015), has become an essential research tool in the field of Public Relations (PR) (Sinnenberg et al., 2017). Numerous studies have leveraged X to monitor health trends and extract valuable insights (Sueki, 2015). During the pandemic, X has demonstrated its effectiveness not only in providing access to essential information but also in organising health campaigns and offering social support (Alhassan & AlDossary, 2021). Public engagement on this platform via retweets or comments is particularly significant as it endorses public agreement with the shared post. The retweet on X amplifies the message's visibility and it reaches to broader audiences, hence shaping the public discourse. In my study, the retweet function reflects the public agreement with the communication strategies employed by Saudi Moh and MoE. Global governmental entities, including those in Singapore, have primarily used social media platforms like Facebook for public health information dissemination (Lwin et al., 2020), in Saudi Arabia, public health organisations and officials have significantly favoured X due to its widespread popularity within the nation, using it as a key channel for communication with the public (Guidry et al., 2017). This is why I have chosen to explore communication via X in my thesis. This study seeks to address this gap by examining crisis communication on the X platform at the national or public level, focusing on Saudi institutions. Social media, including X, has become essential for shaping public opinion and providing health information during disasters and crises. However, it is important to acknowledge that social media platforms are

also susceptible to misinformation, making the role of governmental agencies even more critical in educating the public and dispelling myths and misinformation.

This study aims to explore how PR communication functions in Saudi institutions within the modern world of social media during the Covid-19 crisis, particularly examining the alignment of their strategic communication with the Crisis and Emergency Risk Communication (CERC) framework. By examining how Saudi institutions align their communication practices with the CERC framework, this study aims to contribute to understanding crisis communication in the context of the Covid-19 pandemic. By foregrounding the strategies employed by MoH and MoE on X, my research demonstrates how these communication efforts counter the misinformation and contribute to public understanding.

In examining crisis communication within the context of social media platforms, it becomes evident that the Crisis and Emergency Risk Communication (CERC) framework, although originally designed for offline environments, has been adapted and applied to social media crisis communication. Expanding on this framework, my study focuses specifically on the X platform of Saudi institutions, aiming to investigate how these institutions have embraced the Western CERC framework. X is a widely used social media platform that attracts a diverse range of demographic groups, making it a vital channel for the dissemination of information. The retweets' function serves as a measure of public engagement, with a high level of retweets reflecting public support of the information shared by government stakeholders. Understanding the dynamics of crisis communication on X is therefore crucial for examining the efficacy of communication strategies employed by Saudi institutions and their alignment with the CERC framework.

By investigating how two prominent Saudi institutions utilise the X platform to communicate information about the Covid-19 crisis, my study aims to bridge the existing knowledge gap. Considering clear government guidelines regarding social distancing and lockdown measures, the reliance on social media platforms for health-related purposes has significantly increased in recent years. Consequently, since the onset of the Covid-19 outbreak, knowledge about the pandemic has rapidly evolved, necessitating frequent updates and revisions of health guidelines and information. Against this backdrop, my research seeks to expand the CERC framework by shedding light on the role of social media, particularly X, in the domain of crisis communication. The Covid-19 pandemic serves as an opportune context for understanding the dynamics of social media platforms in crisis communication. Specifically, I examine the predominant focus of posts issued by the selected institutions on the X platform and analyse the specific communication strategies

employed throughout the five stages outlined in the CERC framework to describe and address the Covid-19 crisis.

Chapter 3: Saudi governmental organisations and crisis communication

This chapter provides a comprehensive analysis of crisis communication practices within the Saudi Arabian context. The chapter focuses specifically on governmental organisations in Saudi Arabia and their strategic use of communication during crises, particularly the Covid-19 pandemic. By examining the unique socio-cultural and communicative landscape of Saudi Arabia, this chapter aims to provide a contextual understanding of crisis communication efforts undertaken by Saudi governmental organisations. The chapter begins by exploring the concept of PR within the Saudi Arabian framework, considering the Western communication model and its adaptation within the local context. Subsequently, the chapter delves into the significant role of social media platforms in the Saudi Arabian context. Additionally, the chapter examines the pivotal role of social media in promoting health campaigns and raising awareness among the population and the development of the Covid-19 situation. The final section of this chapter focuses on providing concrete examples of how governmental organisations have harnessed the power of social media to respond strategically to the Covid-19 pandemic. Overall, this chapter aims to contribute to the understanding of crisis communication within the unique context of Saudi Arabia, shedding light on the strategies employed by governmental organisations in effectively managing and communicating during times of crisis, specifically during the challenging period of the Covid-19 pandemic.

3.1 Western Communication and PR Concepts in Saudi Arabia

In the realm of PR, the prevailing understanding and interpretation of the concept largely stem from a Western perspective. Western theorists, such as Parsons, Berlant, and Macdonald, have contributed to the conceptualisation of the field (Almahraj, 2017). However, it is crucial to consider the application of PR concepts and practices within Islamic countries, such as Saudi Arabia, to gain a comprehensive understanding of the discipline. According to (Ferguson, 1990), public communications entail the exchange of information and cultural symbols among media, institutions, products, and the public. It plays a crucial role in shaping public discourses and the circulation of cultural symbols and as a mediator between PR clients and the media, influencing the public representation of client organisations (Almahraj, 2017). However, in the context of Saudi Arabia, the full development of PR becomes challenging because the government strictly controls media outlets, and the dissemination of free information is heavily restricted. Abdelhay (2014) asserts that freedom of expression is

deeply intertwined with the region's social, political, cultural, religious, and economic development. The government blocks numerous internet sites and websites that are deemed contradictory to Islamic or political beliefs. Literature on the subject reveals that Saudi Arabia has laws allowing the selective sharing and circulation of information on TV and local newspapers, censoring any content that contradicts political beliefs or Islamic values (Abozyad, 2007). In light of these circumstances, it can be argued that legislative constraints and the influence of Islamic values on the creation and dissemination of communication hinder the development of PR in Saudi Arabia.

Administrative management in the context of this discussion refers to the governance and allocation of resources within organisations. It encompasses decisions related to financial resources and budget allocation for various initiatives, including public relations (PR). In Saudi Arabia, as highlighted by Alanazi (2013), administrative management provides only limited support for PR initiatives and allocates a restricted budget for them. This situation in Saudi Arabia is distinct from practices in Western countries, where PR often holds a more central and influential role within organisations. In Western contexts, PR practitioners are typically involved in policy-making and decision-making processes, contributing to strategic planning and communication efforts. This comparison highlights the discrepancy in the involvement of PR practitioners in Saudi Arabia, where they are frequently excluded from these crucial processes. These challenges hamper the full realisation of PR's potential in Saudi Arabia. It is evident that the unique socio-political and cultural context of Saudi Arabia significantly shapes the practice of PR within the country. The control exerted by the government over the media and the influence of Islamic values necessitates careful navigation and adaptation of PR strategies. Understanding these contextual factors is crucial for scholars and practitioners seeking to engage effectively in PR within the Saudi Arabian context. Further research is needed to explore how local PR professionals navigate these challenges and develop strategies that align with cultural and religious sensitivities while achieving their communication objectives.

The perception of public relations within Saudi Arabian companies has frequently been characterised by misconceptions, wherein PR is often regarded as an administrative function rather than a communication function (Almahraj, 2017). Within Saudi organisations, PR practitioners tend to prioritise secondary activities, including the development of strategies to address PR challenges and the coordination of events. However, this emphasis on secondary activities tends to overshadow the adoption of a truly strategic approach to PR. The literature reveals that many Saudi PR practitioners lack the proper education and training required for their role, often being hired based on personal connections and initial

skills rather than educational qualifications (Al-Jenaibi, 2016). This lack of trained PR professionals and the gap between higher management decision-makers and the PR department hinder the development of the industry (Almahraj, 2017). Research conducted by Al-Jaralh (2011) found that a significant portion of companies in Saudi Arabia rely on higher management to manage crises, while only a small percentage hire PR consultant. However, with the rise of social media usage, Saudi PR practitioners are now being exposed to international influences and trends, leading to a growing recognition of the importance of PR in the country (Almahraj, 2017). The Saudi government has also recognised the need for PR to keep the public informed, especially as the Saudi population becomes more active on the Internet and seeks authentic information from the government (ACTIVE PR, 2012). Consequently, many international and national firms and companies in Saudi Arabia have established their own PR divisions, and the government has encouraged all organisations to have dedicated PR units (Almahraj, 2017; Pearce, 2008). By 2013, over 90% of organisations in Saudi Arabia, including large and small companies, had launched their PR divisions (Arab News, 2013). This growth of PR in the Kingdom is further underscored by the increasing number of PR firms operating in Saudi Arabia, with over 219 agencies working in the country in 2016 (Alhamamy, 2022; Saudi Arabia Business Directory 2016). This phenomenon highlights the recognition of the vital role played by effective communication and PR in Saudi Arabian organisations, both in the private and public sectors. As the communication landscape continues to evolve, PR practitioners are adapting to new trends and international practices to effectively engage with their target audiences. However, further research is needed to explore the specific challenges and opportunities, as well as the strategies employed to navigate the country's unique cultural and institutional dynamics (Abdullah & Ahmad, 2022).

In a more recent examination of the PR landscape in Saudi Arabia, it's discerned that public relations' conceptual understanding remains somewhat unique to its cultural context (Al-Saleh, 2021). Historically, the role of PR in Saudi Arabia has been predominantly linked with protocol and administrative responsibilities, owing much to the nation's socio-cultural fabric wherein family-run businesses hold sway and interpersonal trust is of paramount significance (Alanazi, 1996; Alkadi, 2007). This has led to PR professionals often being tasked with administrative roles, like managing visas and handling logistics, rather than delving into strategic PR initiatives that are more prevalent in Western contexts (Al-Saleh, 2021). Although there's a perceptible scarcity of adept PR experts in Saudi Arabia, it's noteworthy that corporate spending on PR training and resources remains less than optimal. While there's an increasing trend of private universities introducing PR courses, there's scepticism regarding the quality of content and instruction, particularly given the limited

involvement of seasoned PR professionals in curricular design (Al-Dubaikhi, 2013; Fahad, 2018).

Cultural nuances and religious influences, particularly those of Islam, profoundly shape PR practices in Saudi Arabia. Saudi Arabia's communicative style reflects a high-context culture, wherein messages are frequently conveyed in indirect, symbolic, and non-confrontational manners. It's anticipated that the public can discern intended meanings without them being explicitly articulated (De Mooij, 2021). Islam isn't merely a religion in Saudi Arabia but forms the bedrock of societal norms and values. A person's societal standing is closely tethered to their dedication to Islamic tenets (Al-Ahmed, 1987; Al-Rasheed, 2019). Such pervasive religious influence permeates the very fabric of PR communication modalities in the nation. For PR endeavours to bear fruit in Saudi Arabia, it's imperative to grasp these cultural and religious dynamics comprehensively. PR professionals should astutely adapt to the distinct cultural milieu, ensuring their strategies resonate with indigenous cultural practices and religious sensitivities. A successful PR strategy in the Saudi context might often entail using an intuitive and indirect communication style, integrating religious motifs in messaging, and accentuating Islamic ethos in campaigns.

Public Relations (PR) in Saudi Arabia is deeply embedded within the Islamic cultural and religious fabric, guiding the profession with principles congruent to Islamic values (Abdullah, 2004; Almahraj, 2019). The widespread belief is that a formalised code of ethics in Saudi Arabian PR firms may be superfluous, given the inherent ethical guidelines offered by Islam (Afifi, 2007). This perspective is underpinned by the argument that Muslims intrinsically adhere to an Islamic ethical code, which presumes that PR professionals in the country naturally espouse ethical standards rooted in their religious convictions. This intrinsic code of ethics is echoed across other professions in the region, highlighting Islam's role in delineating professionalism and ethical conduct in the Middle East (Abdulghafour, 2009; Abdullah, 2004; Hasan, 2013).

Comparatively, while specific codes of ethics in PR may be absent in Saudi Arabia, it is noteworthy to explore if similar beliefs exist in other Muslim-majority countries and how they juxtapose with PR practices globally. Within Saudi Arabia itself, while PR may lack formal ethical codes, other professions, steered by the Ministry of Information, ensure their adherence to religious tenets by censoring controversial or inappropriate content, underscoring the role of Islam in regulating public communication (Abozayd, 2007; Almahraj, 2019).

In an era, preceding 2018, the field of PR in Saudi Arabia witnessed consequential developments, particularly marked by the Saudi government's allocation of substantial funds to hire US firms, a move aimed at augmenting the nation's visibility internationally (Alanazi, 2013). These US PR entities facilitated communication among business leaders, Saudi officials, and the US media, implementing strategies intended to increase foreign investment and enhance economic development (Almahraj, 2019). Additionally, the engagement between Saudi officials and US PR firms aimed not only to establish legislative guidelines for PR practices in the region but also to develop training programs designed to enhance the skills of PR professionals in the Kingdom. Almahraj (2019) and Alanazi (2013) noted the introduction of PR concepts in Saudi Arabia was predominantly steered by foreign companies, especially those from the United States, as local professionals employed therein acquainted themselves with PR practices, thereby subtly shaping the trajectory of PR in Saudi Arabia.

3.2 Rapid Digital Transformation in Saudi Arabia

By 2023, Saudi Arabia observed a notable rise in social media engagement, with figures indicating around 29.5 million active users. This digital shift prompted commercial entities to increasingly capitalise on these platforms as avenues to foster connections and amplify their brand visibility (Majumder, 2023). Concurrently, a report by Kemp (2023) underscores the digital saturation in the region. As of the initial phase of 2023, Saudi Arabia boasted of an impressive 36.31 million individuals connected to the internet, mirroring a nearly ubiquitous penetration rate of 99.0 percent. Furthermore, January of the same year documented the presence of approximately 29.10 million Saudi residents on social media platforms, representing a significant 79.3 percent of the nation's populace. In tandem, cellular connectivity surged, registering around 42.50 million mobile connections, a figure that intriguingly surpassed the total population, accounting for 115.9 percent (Kemp, 2023).

In examining the trajectory of social media utilisation in the Kingdom of Saudi Arabia, it is important to compare historical and contemporary usage statistics to establish a clear understanding. In an earlier contextual framework, specifically between 2020 and 2021, the nation witnessed an 8% increase in social media engagement, a phenomenon fuelled by elements such as pervasive smartphone utilisation and the ubiquity of high-speed internet connections (GMI, 2022). The rise of the digital era in Saudi Arabia saw governmental entities astutely harnessing social media platforms during crises, such as the pandemic, where these digital realms were utilised to disseminate crucial health protocols, convey

Covid-19 updates, and harness public engagement, all while acting in compliance with public health strategies.

Transitioning to a more contemporary analysis, 2022 emerged as a critical juncture, noting approximately 25 million active social media users, equating to roughly 73% of the total populace, coupled with an average daily online engagement duration of 3 hours and 2 minutes (GMI, 2022). Unravelling the complexity of platform-specific engagement, YouTube spearheaded the digital engagement by captivating 89.5% of users. In parallel, Instagram and Facebook etched their digital footprint significantly, amassing 26.8 million and 25.92 million active users respectively (GMI, 2022). Moreover, X unfolded as an instrumental platform, not only as a vessel for individual expression but also as a pivotal channel for governmental communication (BBC Trending, 2014). Within the constrictions of Saudi Arabia's socio-cultural paradigm, this burgeoning digital sphere has transcended beyond mere platforms for social interaction to becoming mediums facilitating civic engagement, discourse, and advocacy for societal metamorphosis, negotiating through the nation's relatively restrictive societal and political contours (Hayman, 2017; Salem & Mourtada, 2012).

As social media continues to shape Saudi Arabian society, it becomes increasingly important for organisations and institutions to recognise and adapt to the preferences and behaviours of their target audience. The extensive use of social media presents opportunities for government agencies and organisations to effectively communicate and engage with the public, particularly during crises such as the Covid-19 pandemic. Understanding the dynamics and preferences of social media platforms, such as X, Instagram, and YouTube, enables these entities to leverage these platforms strategically to disseminate accurate information, address public concerns, and foster transparent and meaningful communication (Kaplan & Haenlein, 2010). The critical study of crisis communication issued by Saudi organisations via the X platform during Covid-19 becomes vital to explore how these organisations navigate and utilise social media platforms to effectively engage with the public and manage crisis situations.

Saudi Arabian society has traditionally exhibited low levels of political participation, political rights, civil liberties, and overall freedom, as indicated by Chan et al. (2022). However, the advent of social media has sparked a significant transformation in Saudi society. Interactive platforms have empowered individuals to effect social and political changes, as demonstrated using social networking websites during the Arab Spring revolutions in various Arab countries, including Egypt (Howard & Hussain, 2013). Social media has provided women in Saudi Arabia with a platform to launch campaigns advocating

for their right to drive, resulting in collective action and social approval, ultimately leading to cultural shifts and opportunities for change (Alhajri & Pierce, 2023). The influence of social media has played a role in Saudi Arabia's progression towards modernity (Ben Ltaifa & Derbali, 2022).

The rise of digital technologies and the emergence of social media have brought about significant changes in Saudi Arabia. Social media platforms have empowered individuals to express their opinions and shape public opinion across various aspects of their lives (Zaid et al., 2022). This shift has prompted the Saudi Arabian government to adjust and transform its bureaucratic organisations to foster a closer connection with the people and encourage growth and change, which is essential for nurturing the region's economy. However, it is important to acknowledge that internet freedom in Saudi Arabia remains restricted. While the government aims to expand internet access, it also exercises control over online information. Activists and critics who challenge the established norms have faced severe consequences, including arrest and harassment (CoronaTracker, 2020). The balance between expanding internet access and maintaining control over information highlights the complexities surrounding internet freedom in the country.

In the realm of adept PR communication leveraging social media, ARAMCO, a notable Saudi oil exploration entity, stands out as a paradigm. Predating the pandemic, ARAMCO encountered a cyber onslaught on its website in 2012. This challenging situation prompted ARAMCO to implement specific PR strategies to manage the crisis, highlighting the adaptability of their communications approach (Alanazi, 2013). Venturing beyond mere crisis management, ARAMCO's proactive commitment to fortifying its PR fabric was evident. Collaborating with a US-based firm, they were not only intent on cementing PR foundations but also intricately weaving in the sociocultural and religious nuances endemic to Saudi Arabia. This involved the pioneering move to institute dedicated PR divisions that orchestrated training programs for Saudis, synchronously cultivating a profound appreciation of Saudi traditions and religious sensibilities among their American counterparts (Freitag & Stokes, 2009). Transitioning to the unprecedented Covid-19 pandemic that swept the globe, the strategic role of social media in PR came to the fore in Saudi Arabia. Entities like the World Health Organisation, in concert with Saudi Arabian governmental healthcare institutions, initiated compelling social media drives. These campaigns were aimed at galvanizing the masses towards embracing vaccination and instituting preventive protocols, such as consistent hand hygiene and mandatory face mask usage, underscoring the indispensability of social media as a potent tool for health advocacy and public engagement (Alnasser et al., 2020).

Social media platforms have revolutionized the retail industry and how local brands connect with customers. In Saudi Arabia, social media has played a pivotal role in brand development and raising awareness of online shopping (Al Saud & Khan, 2013). The popularity of online shopping apps like Amazon. Sa, Shein, Noon, Ajmal, and others have surged among social media users in Saudi Arabia, contributing to the growth of e-commerce in the region.

Additionally, social media platforms have proven effective in encouraging engagement in blood donation campaigns and addressing blood shortages in the country (Alanzi & Alsaeed, 2019). Furthermore, Alsuraihi et al. (2016) and Alyoussef et al. (2019) emphasised the undeniable role of social media in improving education, particularly among medical students. Platforms like YouTube have been utilised for educational purposes across different fields, enhancing students' understanding and increasing their engagement levels.

Saudi Arabia's societal structure, characterized by family-owned businesses and a strong emphasis on familial ties, sets it apart from other countries. Islam, the predominant religion in Saudi Arabia, places great importance on maintaining social connections within one's family (Al-Saggaf, 2004). Consequently, individuals in Saudi Arabia often rely on family members to establish social relationships and create business opportunities (Long, 2005). However, rapid modernisation and increased interaction with the outside world have brought significant changes to the Saudi social landscape, impacting business practices in the kingdom (Askool, 2012). Social media has permeated every aspect of Saudi Arabian society, catalysing unprecedented cultural, behavioural, social, and political transformations.

3.3 Government Approaches to social media Risk Communication

In the realm of crisis communication, government and governmental agencies are often the primary sources of guidance and support for the public during times of crisis (Wukich & Mergel, 2016). The existing literature on risk communication emphasises the significant role that government entities should play in communicating risks throughout crises. Given the increasingly technological nature of society, it is essential for governments to adopt modern approaches to effectively support the public (Zeemering, 2020). In line with this, the Saudi government has recognised the value of social media as a communication tool and has increasingly utilised it to engage with the public during the Covid-19 pandemic.

Before delving into the specifics of the Covid-19 situation in Saudi Arabia, it is important to first explore the government's adaptation of social media risk communication.

3.4 Governmental public engagement on social media

Navigating through the labyrinthine challenges of effective public engagement during the pervasive Covid-19 pandemic, the Saudi government has orchestrated a nuanced and multi-faceted policy with regards to social media engagement. Mickoleit (2014) posits that social media provides a viable channel through which governments can not only amplify their services but also engage public sectors by facilitating a two-way dialogic communication platform. This platform inherently paves the way for governments to promulgate evidence-based data and emergent updates, inherently sculpting and positively modulating public opinion through the dissemination of credible and substantiated information (Hancu-Budui et al., 2020). However, to delve deeper into the comprehensive policy purportedly adopted by the Saudi government for bolstering its social media engagement during the pandemic, it's pivotal to excavate detailed and specific strategies, guidelines, and initiatives embedded within.

For instance, elements such as the communicative tone, thematic areas of focus, platform selection, targeted demographics, and feedback mechanisms potentially embedded within the policy would be pivotal to understand the nuanced and tactical approach underpinning the government's strategy. Furthermore, investigating how these strategies navigate the complex tapestry of misinformation, digital literacy, and access disparities would illuminate the strategic depth and foresight embedded within the policy. Unfortunately, the availability of comprehensive data regarding the detailed stratagems within the Saudi government's social media policy, especially in the public domain, necessitates further research and exploration to delineate its substantive content and structural framework. Thus, while a mutually beneficial relationship is fostered between governments and the public, through insights into public perspectives and assuring access to accurate information via social media, a detailed and exhaustive exploration of the Saudi government's specific policy nuances, strategies, and implementations remains a crucial endeavour for future investigations and discourses.

3.5 The Covid-19 situation in Saudi Arabia

In December 2019, the world experienced a widespread infectious disease outbreak that caused severe symptoms and fatalities (Al-Khani et al., 2020). In February 2020, the World Health Organisation (WHO) declared the disease a global pandemic (WHO, 2020a). Saudi Arabia, renowned for its sacred religious sites such as Mecca and Medina, faced a significant number of Covid-19 cases during the initial outbreak period from April 2020 to June 2020 (WHO, 2020a). The population of Saudi Arabia is approximately 35 million, with a significant proportion (37%) residing in major cities like Riyadh, Mecca, Jeddah, Dammam, and Medina (Statistics, 2020). The MOH reported that the majority of Covid-19 cases and deaths were concentrated in these cities, with over 80,000 cases, a recovery rate of over 50,000, and nearly 450 deaths during the subsequent period from July 2020 to September 2020 (MoH, 2020).

Ascertaining the effectiveness of Saudi Arabia's management of the Covid-19 outbreak necessitates an exhaustive exploration of various dimensions including case management, containment strategies, and public communication, prior to positing a relationship between the handling of prior outbreaks and the present situation. The onset of the Covid-19 pandemic, marked by the announcement of the first case on March 2, 2020, set into motion a cascade of incidents and responses that demanded decisive governmental intervention (Natto & Alshaeri, 2021). This initial case, followed by a consequential spread to the patient's wife and further travel-related transmissions, posed an emergent and multifaceted challenge to the nation's healthcare and administrative apparatus. The escalating number of cases from both travel and local transmission vectors compelled the Saudi government to enforce a halt on all transport into and out of Qatif, a historic coastal oasis, resides on Saudi Arabia's eastern shore, aiming to mitigate further transmission (Natto & Alshaeri, 2021). Subsequent travel-associated cases further pressed the government to instigate entry restrictions for individuals from specific countries and induce an educational institutional shutdown.

This unfolding scenario brought to the fore an array of strategic interventions and measures, which warrants a meticulous analysis to substantiate the claim of effective management of the Covid-19 outbreak. Drawing a parallel with Saudi Arabia's prior confrontation with the Middle East respiratory syndrome coronavirus (MERS-CoV), there is an implication that antecedent experience with managing viral outbreaks might have galvanized and informed the nation's response mechanisms to the Covid-19 pandemic (Al-Dorzi et al., 2016). Yet, to affirmatively correlate this experience with efficacy in the Covid-19

management context, a thorough examination of tangible metrics, policy efficacy, public adherence, and outcome data during the ongoing pandemic would be indispensable. In this multifaceted dynamic, where the nation navigated through epidemiological, healthcare, and socio-economic challenges, the underlying effectiveness of the implemented policies and strategies, and whether the experiences with MERS-CoV tangibly translated into an enhanced ability to manage Covid-19, becomes a nuanced discourse warranting an intricate and detailed investigation.

In response to the Covid-19 pandemic, the Saudi government implemented various measures to limit the spread of the virus and protect cities across the country. These measures included placing the Qatif area under lockdown, cancelling festivals, events, and domestic travel, as well as closing educational institutions and suspending e-Visa entry (Al-Tawfiq & Memish, 2020). In late March 2020, all international flights were cancelled, and social gatherings such as weddings were banned. Daily prayers in mosques, including the important Friday prayer, were also prohibited (Al-Tawfiq & Memish, 2020). Furthermore, a strict 24-hour curfew was imposed in major cities like Riyadh, Medina, Dammam, Jeddah, and Mecca, while the rest of the country had a limited curfew from 3 pm to 6 am (Al-Khani et al., 2020). These curfews aimed to restrict social gatherings by mandating the closure of retail and business establishments (Al-Khani et al., 2020; Yezli & Khan, 2020).

In Saudi Arabia, Mecca and Medina hold immense religious significance for Muslims worldwide, serving as the focal points for the annual pilgrimage known as Hajj, as well as for visits throughout the year for Umrah. The outbreak of the Covid-19 pandemic prompted authorities to take decisive measures to curb the virus's spread. As a response, the authorities implemented a ban on the Umrah pilgrimage in late March 2020 (Ebrahim & Memish, 2020). Simultaneously, there was significant uncertainty surrounding the fate of the Hajj pilgrimage for that year. This decision to delay the announcement of the Hajj pilgrimage's status in 2020 reflects the complex considerations and challenges faced by the Saudi government, which were driven by a historical context. Historical evidence has indicated that the Hajj pilgrimage played a notable role in increasing infection rates during the 1957 flu pandemic (Benkouiten et al., 2019). The postponement of the decision on the Hajj pilgrimage in 2020, therefore, underscores the careful evaluation of public health risks and religious traditions that authorities had to navigate during the Covid-19 pandemic. The decision to put the Hajj pilgrimage on hold in 2020, albeit temporary, was emblematic of the Saudi government's commitment to safeguarding public health during a global health crisis. The complexity of balancing religious practices with public safety is evident, and the delay in announcing the decision highlights the meticulous approach taken. This period of

uncertainty, as elaborated in subsequent sections, allowed for thorough deliberation and consideration of various factors, including historical precedents and the potential implications for public health. The careful evaluation and ultimate decision regarding the Hajj pilgrimage in 2020 provide valuable insights into the challenges posed by the pandemic and the responsible decision-making that aimed to protect both the faithful pilgrims and the broader population.

During the Covid-19 pandemic, Saudi society experienced significant tension and stress as social and personal lives were heavily affected by measures such as lockdowns, curfews, social distancing, and quarantine (Iqbal et al., 2020; Zhang, 2022). These restrictions disrupted the normal functioning of society, limiting social gatherings and impeding personal interactions. However, despite the challenges posed by the pandemic, Saudi Arabia reported a relatively lower mortality rate of approximately 0.86% among infected individuals compared to the global average of 3.4% (WHO, 2020c). The healthcare system in Saudi Arabia faced numerous challenges as the pandemic progressed through different stages, including early infection, rapid spread, decline, stabilisation, and a second wave (Al-Khani et al., 2020). The MOH implemented strict control and social distancing measures, along with the adoption of digital health technologies, to mitigate the negative impact of the virus. Additionally, cancelling the Hajj pilgrimage was a crucial step taken to curb the spread of the virus and prioritize the population's safety (Al-Khani et al., 2020).

The public health system in Saudi Arabia responded to the pandemic by establishing specialized medical, educational, and health infrastructure to effectively control the disease (El Sayed, 2020; Yezli & Khan, 2020). Measures such as patient screening and ensuring hospital preparedness were implemented to minimize the widespread transmission of the virus. These efforts aimed to enhance the healthcare system's capacity to manage the influx of cases and provide optimal care to those affected. As the pandemic progressed, control measures and safety restrictions were gradually eased during the second wave in April 2021, as the spread of the virus was not as intense (Hassounah et al., 2020). People began to resume their daily lives while adhering to necessary precautions, such as wearing face coverings in crowded places. Vaccination programs became mandatory in June 2021, enabling individuals to return to workplaces and engage in public activities (Ledraa & Aldegheishem, 2023; Zhu et al., 2022). By September 2021, face masks were no longer required, and most social distancing measures were lifted as the country observed a low spread rate of Covid-19 (Ledraa & Aldegheishem, 2023; Zhu et al., 2022). Restrictions on international travel and the entry of non-vaccinated individuals into the country were

gradually lifted. Eventually, in July 2021, the Hajj pilgrimage resumed (Ledraa & Aldegheishem, 2023; Zhu et al., 2022).

The Covid-19 situation in Saudi Arabia exhibited varying epidemiological trends, including fluctuations in the number of new cases, mortality rate, and critical cases (Salam et al., 2022; Zrieq et al., 2022). From March to May 2020, efforts were focused on identifying and managing the early stages of infection. Subsequently, in June and July 2020, there was a significant increase in the spread of the disease. From September 2020 onwards, the country experienced a rapid decline in the virus. This was followed by a stabilisation phase from September 2020 to April 2021, as indicated in the provided table. A second wave occurred from April to September 2021. Finally, from October 2021 onwards, the country entered a phase of full control over the situation (Salam et al., 2022). These fluctuations highlight the dynamic nature of the pandemic and the ongoing efforts to manage and respond to its impact on public health in Saudi Arabia.

3.6 How Saudi Governmental Organisations Responded to the COVID-19 pandemic using social media.

3.6.1 Background of the Saudi MoH

The MOH in Saudi Arabia assumes a critical role in the healthcare system of the Kingdom of Saudi Arabia (KSA). It exercises regulatory oversight over healthcare delivery, providing free services to approximately 35 million citizens residing in 13 governorates across different geographical locations (MoH, 2009). Recognizing the challenges faced by individuals in remote areas with limited access to basic health units, the MOH is committed to extending healthcare services to these underserved populations. Moreover, the private sector contributes to the healthcare system by offering specialized care facilities, further enhancing the healthcare landscape in Saudi Arabia (MoH, 2009).

In the pursuit of providing equitable healthcare services, the MoH of Saudi Arabia has progressively amplified its budget over the years, exemplifying a profound commitment to bolstering both public and private healthcare sectors. For example, in 2012, the MOH budget constituted 3.2% of the country's GDP (World Bank, 2012), escalating substantially to account for 19% of government expenditure by 2019 (MoH, 2019). To fully comprehend the ramifications and efficacy of this financial allocation, a comparative analysis with other nations could be enlightening. While this investment signals a dedicated effort to enhance basic health facilities and safeguard universal healthcare access (Alasiri & Mohammed,

2022), juxtaposing Saudi Arabia's health outcomes and financial allocations against those of other countries could provide a comprehensive understanding of its healthcare landscape. Furthermore, it's imperative to acknowledge that despite these financial endeavours, the MOH faces myriad challenges including resource limitations, healthcare practitioner shortages, and evolving disease patterns, alongside systemic and technological hurdles like the absence of a coherent national crisis management policy and underexplored electronic health solutions (Almalki et al., 2011). The triangulation of financial investments, comparative international analysis, and systemic challenges might pave the way for a more nuanced understanding and future strategy formulation for the healthcare sector in Saudi Arabia.

A study conducted in 2015 highlighted the dissatisfaction among people in the Kingdom of Saudi Arabia regarding the quality of outpatient services and primary healthcare clinics (Al Fraihi et al., 2016; Alnemer et al., 2015). The Saudi MoH initially implemented plans inspired by the "Agency for Healthcare Research and Quality" in the United States to address this issue. These plans aimed to establish a culture of quality with a focus on a "patient first" model (Al Fraihi et al., 2016). However, the implementation of these plans faced challenges due to scepticism and the lack of clear motivational specifications for employees and managers within the public structure of the Saudi MOH (Hassanain, 2017). Unlike private healthcare institutions, the salaries, and budgets within the MOH are determined based on the number of beds rather than performance. Additionally, the lack of quality and performance measures, such as key performance indicators, further hindered the effectiveness of these initiatives (Hassanain, 2017).

In response to growing discontent among patients and healthcare executives, the Saudi MOH shifted its focus to performance-enhancement programs that were aligned with performance-based approaches (Hassanain, 2017). The MOH began allocating budgets based on performance, recognizing the need to prioritize quality healthcare provision over infrastructure development alone. This change in approach aimed to address the discomfort experienced by individuals and their concerns regarding the absence of effective healthcare facilities (Hassanain, 2017). As the largest player in the Saudi healthcare system, the MOH plays a critical role in shaping the overall healthcare landscape (Al Yousuf et al., 2002). Recognizing the need for continuous improvement, the MOH recently appointed a Deputy Ministry for Planning and Institutional Excellence to uphold the highest standards of quality and facilitate the process of improvement (MoH, 2019). By examining the institutional configuration of the Saudi MOH, we gain insights into how initiatives can be undertaken to address crises and improve the overall healthcare system in the country.

In an adept convergence of technology and public health during a global health crisis, Saudi Arabia witnessed the swift adaptability of health platforms and initiatives amidst the Covid-19 pandemic. Notably, the Sehhaty mobile application, initially launched in 2019 with a focus on promoting health campaigns and facilitating healthy lifestyle adoption, seamlessly transitioned its functionalities to address emergent pandemic-related needs by incorporating a symptom checker feature, which empowered users to evaluate potential Covid-19 symptoms and schedule appointments at designated clinics such as Tetamman (Al-Rabiah, 2020). Concurrently, the Health Economic Surveillance Network (HESN), responsible for national infectious disease monitoring, played an important role in public health protection by establishing the Taqasi patient tracing unit in March 2020, systematically conducting contact tracing across the kingdom. In parallel, the Saudi Ministry of Health, the principal health authority and service provider, spearheaded e-Health initiatives that epitomized the intersection of healthcare and technology, exemplified by the institution of the 937-call service to field Covid-19 related inquiries and the innovative deployment of remotely controlled robots in at least one hospital's intensive care unit to judiciously monitor patients, thereby evidencing a forward-thinking approach to leveraging technology in healthcare service provision amidst a global crisis.

3.6.2 Social media response by the Saudi MOH

The Saudi MOH has harnessed the power of social media, particularly through X, to cement a potent online presence and fortify the trust of its audience. The MOH, which boasts a substantial following the specifics of which merit further verification to ensure temporal accuracy has been employing its X account, inaugurated in 2020, as both a conduit for the dissemination of health-centric materials and as an educational platform (Alhassan & AlDossary, 2021). Utilising a rich tapestry of formats, including photos, videos, and graphics, the MOH has been steadfast in disseminating a wide array of health-related information to its nearly 3 million followers. The content, invariably evolving and adapting in stride with the emergence of new developments, particularly amid the pandemic, has demonstrated a nimbleness in information sharing. Additionally, in a nod to the linguistically diverse audience, the MOH has communicated crucial information in multiple languages, such as Arabic, English, Portuguese, French, and Urdu, thus ensuring a broader reach and comprehension among the populace.

In the Kingdom of Saudi Arabia, the Covid-19 pandemic began with the first reported case on March 2, 2020, in the city of Qatif, Eastern Province, linked to an individual who had travelled to Iran and returned via Bahrain (Al-Tawfiq & Memish, 2020; Shi et al., 2020). In

response, the MOH implemented measures to contain the virus's spread and raise public awareness (Al-Tawfiq & Memish, 2020; Algaissi et al., 2020; Shi et al., 2020), including the launch of the "My Health" app to disseminate information. Recognizing the power of social media, the MOH acknowledged its significance, and the potential risks associated with it, particularly during crises. The World Economic Forum (WEF) highlighted the threat posed by social media if used to spread baseless fears or rumours (Statista Research Department, 2022). Given the substantial number of X users in Saudi Arabia at the time (around 12 million), it became crucial to examine how PR professionals responded to the Covid-19 crisis through social media (Statista Research Department, 2022). This area remained largely unexplored, necessitating further research to understand the role of PR professionals in crisis communication during the pandemic.

Before the pandemic, the MOH had been gradually building its presence on various social media platforms. Its X account, established in April 2011, had garnered over 6 million followers by 2022. Similarly, its Facebook account, created around the same time, had approximately 3 million followers by 2022. However, during the pandemic in 2020, these accounts experienced a surge in visibility and followers as they provided daily updates on Covid-19 cases. The MOH also utilised YouTube effectively, with its videos amassing nearly 49 million views. In 2017, the MOH ventured into Instagram and, by 2020, had posted over 900 times and gained a million followers. While social media had been used for information dissemination in the past, during the Covid-19 pandemic, government officials and stakeholders specifically utilised these platforms for PR communication, signalling a shift in focus towards using social media, particularly X, not only to engage and inform the public but also to foster trust in the government (El Kheir et al., 2021).

To effectively raise awareness and educate the public, the Saudi MOH utilised social media platforms to disseminate numerous videos on X, Facebook, and Instagram. These videos aimed to educate citizens about the virus, proper handwashing techniques, mask usage, curfew regulations, and the importance of social distancing in controlling the virus's spread (MoH, 2021a). Additionally, the MOH released guidelines in multiple languages, targeting both national and international residents in Saudi Arabia. These guidelines were widely distributed through the MOH's website, social media accounts, and SMS messages sent to all residents (MoH, 2021b).

Research conducted by Alotiby (2021) highlighted that social media was the primary source of information for the Saudi population during the Covid-19 pandemic. Alotiby (2021) reported that videos released by the Saudi MOH accounted for 71.5% of the viewed videos within the Kingdom, followed by videos from the World Health Organisation (13.6%). This

finding aligns with the research Kwok et al. (2020), which emphasised the reliance on the Saudi MOH for information during the pandemic, surpassing more prominent organisations such as the WHO. This trust can be attributed to the MOH's effective management during the 2012 Middle East Respiratory Syndrome (MERS) pandemic, which established its credibility (Aldarhami et al., 2020).

Even before the Covid-19 pandemic, the Saudi MOH had proactively utilised digital platforms and services to educate and assist residents. Several e-service apps were developed for residents' convenience. One such app, "Seha," allowed patients to communicate with doctors through chat, voice, and video calls, providing a feedback feature to evaluate the service received during consultations (MoH, 2018). Another app, "Mawid," enabled patients to book, cancel, or reschedule appointments at medical centres, including primary healthcare centres (PHCs). It also offered an e-prescription service to obtain specific prescription-only medications after an in-app consultation, eliminating the need for an in-person doctor visit (MoH, 2020b, 2020c). To provide technical support and enhance healthcare service accessibility, the Saudi MOH established a call centre offering services such as appointment scheduling, consultation, and e-prescriptions (MoH, 2020d). This call centre played a crucial role during the pandemic, receiving approximately 3 million calls in July 2020 alone. In response to the Covid-19 outbreak, the MOH introduced the "Tetamman" app, along with a dedicated WhatsApp number for interactive communication with MOH representatives (MoH, 2020e). "Tetamman" provided information, health status updates, and a countdown display for individuals in quarantine, offering services aimed at ensuring their safety and expedited recovery (MoH, 2020f). The Saudi MOH's successful implementation of these digital tools and services underscores its commitment to crisis communication through social media platforms.

Addressing the challenges and perturbations instigated by the Covid-19 pandemic, the pervasive influence of social media became notably instrumental in disseminating both veracious and spurious information. Numerous insubstantial claims, such as the purported preventive or curative properties of various natural ingredients against the virus, propagated across platforms, posing tangible threats to public health and safety by fostering misinformed practices (Ang et al., 2020; Lissiman et al., 2014). Amidst this milieu, cases such as the chloroquine overdoses in Nigeria, spurred by unfounded media rumours, underscore the peril of unverified information (Busari & Adebayo, 2020). While natural remedies do harbour intrinsic health benefits, affirming their efficacy as preventative or therapeutic agents against the virus is not substantiated by scientific evidence (Al Akeel et al., 2018).

The Saudi Arabian government embraced a structured and anticipatory approach to crisis management and communication by navigating through the healthcare and informational challenges of the pandemic, Leveraging learnings from the unfolding pandemic in nations like China and Italy, the government, resonating with Olaniran and Williams (2008) emphasis on pre-crisis planning, implemented comprehensive pre-crisis communication, aimed at not only mitigating and managing the impending crisis but also nurturing a trust-infused rapport with the public. This entailed astute measures such as opening a control room for effective message transmission, issuing clear guidelines, and ensuring robust resourcing of hospitals. Through mechanisms like the centralized information system and discerning stakeholder communication, the government adeptly orchestrated cohesive, consistent, and specialized informational flow across varied stakeholder segments. Centralizing crisis communication acted as a linchpin, safeguarding against informational conflicts and fortifying the continuity, speed, and acceptance of crisis narratives amongst stakeholders, thereby underpinning an environment conducive to cooperative crisis navigation (Sanjeev et al., 2021). Furthermore, adapting communication to cater to the linguistic diversity of the population, including expatriates, underscored a commitment to inclusivity and mitigation of potential misinformation (Mufsin & Malakar, 2020).

3.6.3 The Saudi MOE's Response to the COVID-19

On February 3, 2020, a Royal Decree was issued in the Kingdom of Saudi Arabia to address the Covid-19 outbreak. As a response, the Saudi MOE (MOE) announced the closure of schools on March 8, 2020, starting with those in the Qatif governate and transitioning to online learning (MOE, 2021). Online education was adopted as a substitute for face-to-face learning, and the MOE oversees the educational operation, including educational directorates, offices, and schools throughout the country.

In addition to school closures, universities were also compelled to shut down and shift to distance learning. Traditional learning management systems (LMSs) have been utilised in higher education for managing and delivering educational content. Furthermore, other educational platforms such as Google Classroom, Webex, and Zoom were incorporated. The Saudi MOE introduced special platforms to be utilised by schools nationwide, including IEn (http://www.ientv.edu.sa/) and Madrasati (https://schools.madrasati.sa/). The "IEN National Education Channel" consists of 12 open educational channels on satellite and YouTube, providing daily lessons for kindergarten to Grade 12 students. Similarly, Madrasati is an integrated educational tool the Saudi MOE offers to facilitate online learning.

Saudi Arabia's precursory endeavours into the realm of distance learning, inaugurated as early as 1990, signify a longstanding commitment to technological and educational fusion (Aljaber, 2018). After this, in 2002, the country pioneered its initial foray into e-learning by introducing a portal that housed an assortment of online lessons and educational activities, thereby laying a foundation which was subsequently built upon in various educational initiatives. One of such is the "Future Gate," a collaborative venture between the Tatweer Education Holding Company and the Saudi Ministry of Education (MOE), which aimed at both enhancing educational competencies and delivering robust online content for teachers and students alike. Furthermore, the meticulous crafting of targeted online platforms such as the "Virtual Kindergarten" demonstrates an attentiveness to specific educational stages by proffering virtual classes and activities for children aged between 3 and 7. Notably, during the unanticipated educational disruption caused by the Covid-19 pandemic in 2020, the MOE not only sustained but also amplified its communication and online educational services. For instance, within merely two days subsequent to school closures on March 9, 2020, the MOE website became a hive of activity, publishing 28 news pieces, thus highlighting a concerted effort to maintain robust communication during a period of heightened uncertainty (Alqurashi & Assulaimani, 2021). The escalation of virtual educational engagements during this period is further evidenced by the staggering 60 million views on the IEN National Education Channel, the orchestration of over 400,000 virtual classes, administration of upwards of 700,000 tests, and the issuance of approximately 1.8 million assignments (Alqurashi & Assulaimani, 2021).

In the throes of the Covid-19 pandemic, the Kingdom of Saudi Arabia strategically harnessed digital technology across various sectors—such as public health, healthcare services, education, telecommunication commerce, and risk communication—exemplifying a nimble and proactive approach to crisis management. By leveraging a digital framework, the government was able to rapidly implement crucial measures, fulfilling public needs promptly and efficiently (Hilton et al., 2022). Considering that a staggering 89% of the Saudi population is internet users, the digital offerings, including services specific to the pandemic's exigencies, were significantly expedited (Kemp, 2020). This encompassed not only the usage of social media platforms for communication but also the development of dedicated informatics tools crafted for Covid-19 communication.

Moreover, the education sector, encapsulating approximately 1,353,619 students across both government and private domains (General Authority for Statistics, 2020),

confronted substantial hurdles amid the pandemic, catalysing the Ministry of Education (MOE) to establish an e-Learning Centre, thus ensuring the perpetuation of education through remote means (National Centre for e-Learning, 2020). Eminent universities, such as King Saud University and King Khalid University, among others, seamlessly transitioned into this e-learning paradigm to uphold educational continuity amidst the pandemic. Furthermore, telecommunications entities like Mobily and Zain Saudi Arabia became pivotal in buttressing both e-learning and healthcare services by offering complimentary data services to pertinent educational and health platforms. Simultaneously, internet providers facilitated access to vital information from the MOE and Ministry of Health (MOH) without exhausting users' personal data, while also leveraging network names to disseminate health advisories and awareness messages subtly yet effectively, such as "stay home," amplifying the reach of health education during this unprecedented era (Hassounah et al., 2020).

In the fervent battle against Covid-19, the Saudi government exhibited a stern stance against the proliferation of misinformation, particularly amidst the crisis, by initiating a division explicitly oriented towards identifying and mitigating the dispersion of fake news through accurate, validated communication (Chung et al., 2020). This division, steered by high-ranking bureaucrats, not only aimed at mitigating misinformation but also took actionable steps against individuals promulgating unverified information, even leading to arrests in certain instances (Mathrubhumi, 2020; Raghunath, 2020; Shen, 2020). The utilisation of social media channels underscored a strategic approach towards crisis communication, ensuring that authentic information permeated even the remotest regions of the Kingdom. Additionally, the Saudi government, demonstrating a tangible expression of its crisis management strategies, engaged in supportive actions such as delivering medications to vulnerable populations and establishing additional healthcare and quarantine facilities to boost healthcare capacity during the crisis (Singh & Neog, 2020).

Moreover, community kitchens were initiated to assure meal provision for the poor, thereby ensuring societal inclusivity during these tumultuous times (Gopika, 2020; PTI, 2020). This not only catered to immediate needs but also strategically positioned the government in a positive light, fostering trust and establishing a commendable public relation. In analysing the communication strategies of Saudi organisations during the pandemic, a meticulous approach towards examining content, language, and embedded meanings within tweets was adopted, revealing intriguing insights such as the strategic timing of tweet postings to optimize public engagement. Furthermore, in the analytical process, a rigorous filtering and refining of datasets were executed, removing irrelevant, duplicate, and spam content, ensuring a focused and pertinent qualitative analysis, thereby

mitigating the risk of delving into unrelated material (Chew & Eysenbach, 2010). This scrupulous approach underscores the significance of exactitude in evaluating communication strategies and public engagement during a global crisis.

3.7 Conclusion

This chapter has provided an in-depth analysis of PR concepts and practices in the Kingdom of Saudi Arabia, focusing specifically on the challenges posed by the Covid-19 pandemic. It is important to recognize that the governmental institutions and PR practitioners in Saudi Arabia have faced the unprecedented task of managing the crisis effectively. In response, the MOH and the MOE have implemented various measures, heavily relying on digital platforms and social media for their crisis communication strategies. The details and evidence supporting these strategies will be presented comprehensively in subsequent sections, providing a deeper understanding of their implementation.

The effective crisis communication strategies employed by the Saudi government ensured the provision of reliable and timely information to citizens, keeping them informed about government policies. These strategies fostered active stakeholder participation and acceptance of government initiatives. Notably, due to the implementation of these effective strategies, the Kingdom of Saudi Arabia was relatively successful in managing the pandemic compared to some other countries. The government's commitment to effective crisis communication, supported by telecom companies and internet providers, played a vital role in facilitating education and healthcare services during the pandemic. By leveraging technology and ensuring the flow of accurate information, the Saudi government has been able to mitigate the challenges posed by the Covid-19 crisis and maintain public engagement and trust in its initiatives. The subsequent sections will delve into the specific strategies employed by the MOH and the MOE, providing a comprehensive examination of their approach.

Chapter 4: Research Methodology

The central aim of this thesis is to conduct an extensive and nuanced analysis of the crisis communication strategies employed by the Saudi MOH and MOE through their official X accounts within the unique context of the Covid-19 pandemic. Given the unprecedented nature of this global health crisis and its profound impact on institutions and society in Saudi Arabia, it is imperative to understand how these organisations navigated the complexities of crisis communication. This chapter presents the research's methodology, including data collection and analysis techniques, while also addressing the ethical considerations integral to the study.

4.1 Research Questions

This study aims to dissect the communication content and strategies employed by the Saudi MOE and MOH on X amidst the 2020 Covid-19 crisis, how the X platform was used to enhance awareness and prevention towards Covid-19, and how the public engaged with this content. The following research questions were asked:

RQ1: What predominant themes emerged from the tweets by the Saudi MOH and MOE on X during the Covid-19 crisis in 2020?

> **RQ1a:** How was Covid-19 presented and characterized in MOE and MOH tweets?

> **RQ1b:** What are the main sub-themes that emerged from the tweets of both Ministries on X during the Covid-19 crisis in 2020?

RQ2: What was the role of Arabic language and other languages in the context of the tweets?

RQ3: How did individuals interact and engage with the communications from the Saudi MOE and MOH regarding the Covid-19 pandemic on X?

RQ4: What explicit crisis communication strategies were reflected in the MOE and MOH's tweets during the pandemic?

The above research questions are essential to explore the crisis communication strategies used by both ministries on X during the pandemic. For instance, the first question is designed to identify the key narratives, i.e. the predominant themes, of both ministries while the second question focuses on the inclusivity and effectiveness of the language used on V

considering the multilingual society of the Kingdom of Saudi Arabia. The third research question would help me to understand public engagement and interaction on X and the fourth research question specifically focuses on the crisis communication strategies used by both ministries. I believe these research questions would help provide a comprehensive analysis of the government's crisis communication during the pandemic, assessing the context of the tweet and the public perception.

4.2 Philosophy of the Undertaken Research

Research philosophy serves as a foundational belief system that guides researchers in collecting, analysing, and utilising data. It plays a crucial role in making informed decisions regarding research design, methodology, and data collection. The underlying research philosophy often influences the selection of research methods and tools (Easterby-Smith et al., 2021; Walliman, 2021). Therefore, this chapter begins by justifying the philosophical stance adopted in this study and subsequently explores the research approaches, methods, and tools for data collection and analysis. In the realm of social science research, various approaches exist, including positivism, post-positivism, interpretivism, critical theory, social constructionism, and pragmatism. For this research, a social constructivist approach is embraced.

Considering the dynamic nature of crisis communication and the evolving circumstances, certain realities must be considered when formulating social media crisis communication strategies for organisations. This entails acknowledging the ever-changing nature of the crisis landscape and adapting strategies accordingly. By recognizing these realities, organisations can develop effective crisis communication approaches that address stakeholder needs and public opinion while leveraging the capabilities of different media platforms. As defined by Coombs (2010), crisis communication involves collecting, processing, and disseminating information to address crisis situations. However, the process of collecting, processing, and disseminating information is not fixed or universal; it varies depending on the circumstances. Therefore, the adoption of a social constructionist position is warranted for this research, as it recognizes that the nature of realities and concepts, such as racial discrimination and social class, are contingent on the inquirer and the context of the crisis. Social constructionism, rooted in sociological theory, posits that meanings and knowledge are socially and culturally constructed through social interactions and processes (Berger & Luckmann, 2023; Gergen, 1985). From this perspective, crisis communication is seen as a process whereby social stakeholders construct and interpret accounts of a crisis (Scott & Marshall, 2009). Adopting a social constructionist view in crisis research

complements crisis management by incorporating cultural and social considerations (Diers-Lawson, 2017). Given the intricate nature of crisis communication discourse, encompassing various crisis types, the involvement of multiple media channels (including social media), the material aspects of crisis communication, and the diverse claims and voices associated with crises, a social constructionist approach is argued to offer comprehensive and valuable insights in this research field.

Furthermore, the Covid-19 pandemic has brought about significant societal transformations. Technological advancements and increased interconnectivity have ushered in a paradigm shift, enabling a more participatory society (Diers-Lawson, 2017). Given the complexity of the crisis, the diverse media landscape, and the rapid changes associated with the pandemic, it becomes evident that adopting a social constructionist perspective in crisis communication research provides a broader understanding and greater relevance. As Scott and Marshall (2009) suggest, social constructionist approaches to crisis communication focus on elucidating the processes through which social actors describe, explain, and account for crises. Incorporating social and cultural considerations through a social constructionist lens complements the managerial lens of crisis management, as highlighted by Diers-Lawson (2017).

Social constructionism is a widely adopted theoretical approach in the field of Social Sciences due to its capacity to comprehensively address the nature of reality (Andrews, 2012). Crises encompass multifaceted dynamics involving diverse stakeholders and undergo evolution over time, necessitating corresponding changes in communication strategies. The communication efforts of governmental and non-governmental media platforms wield significant influence over the perception of crises and shape behavioural responses to perceived threats. The evolution of crisis communication can be conceptualized through Fink (2020) four-stage model, encompassing the prodromal, breakout, chronic, and resolution stages. The selection of tweets in this study effectively captures these stages, reflecting initial moments of heightened anxiety and subsequent transitions towards resolution, where government guidelines become less salient. By embracing a social constructionist approach, this study aims to discern the crisis communication strategies employed by various institutions to cultivate successful PR.

Social constructionist perspectives emphasise the interpretation of reality based on individuals' experiences and behaviours (Andrews, 2012). While crisis communication research offers valuable insights into the development of social media crisis communication strategies, it also reveals the absence of universal or consistent approaches to crisis management. Thus, my research aims to examine how different Saudi Arabian institutions

address the public's need for crisis information. The data for this study are derived from discussions on the social media pages of selected organisations during the Covid-19 pandemic, specifically from the X platform. Additionally, this research explores the social interpretation of communication from the Saudi MOH and MOE on social media platforms.

4.3 Qualitative Research

A qualitative research approach is employed in this study to gain a deeper understanding of the collected data. Qualitative research is particularly well-suited, as it allows for the exploration of individuals' concerns, needs, and preferences (Maison, 2018; Nuttavuthisit et al., 2019). Unlike quantitative research, which primarily focuses on numerical data, qualitative research enables an examination of emotions, expressions, and reactions (Palinkas et al., 2015; Syrdal & Briggs, 2018). Since the present study does not primarily concern itself with numerical details or X metrics but rather aims to understand how crisis communication evolved during the pandemic in Saudi Arabia, a qualitative approach is deemed most appropriate.

Qualitative research plays a crucial role in evidence-based research, offering valuable insights into complex and multifaceted challenges. Kozleski (2017) and Rowley (2012) emphasise that qualitative research is particularly well-suited for addressing the challenges that often accompany studies in the field of evidence-based research. However, it's important to specify what these challenges are. These challenges may include the need to explore the intricate and context-specific aspects of a phenomenon, such as the Covid-19 pandemic, which can vary across different regions, communities, and populations. Moreover, qualitative research provides a platform to delve into the nuances of how various stakeholders, including the public and government entities, perceive and respond to the pandemic. It enables researchers to capture the depth and diversity of experiences, perspectives, and practices that may not be fully understood through quantitative methods alone. In the context of a global health crisis like the Covid-19 pandemic, understanding the multifaceted challenges faced by individuals, communities, and governments is paramount for informed decision-making and effective crisis management. Qualitative research can help shed light on these challenges, offering a deeper understanding of the sociocultural, economic, and psychological factors that influence responses to the pandemic.

Qualitative research is often evaluated based on its adherence to established criteria and standards, such as the Consolidated Criteria for Reporting Qualitative Research (COREQ) and the Standards for Reporting Qualitative Research (SPQR) (Tremblay et al., 2021). These criteria and standards serve as benchmarks for assessing the quality of

qualitative research studies. While debates persist about what constitutes high-quality qualitative research, there is a consensus among researchers that certain fundamental elements play a crucial role in ensuring research rigor and credibility. One of these critical elements is the clarity of the research question. Researchers must formulate clear and well-defined research questions that guide their qualitative inquiry. A well-structured research question not only provides direction to the study but also contributes to the transparency of the research process. Methodological rigor is another essential aspect of high-quality qualitative research. Researchers need to rigorously design and conduct their studies, including data collection and analysis, to ensure the validity and reliability of their findings. Additionally, transparency throughout the research process is paramount. This involves providing a detailed account of the research methods, data collection procedures, and analytical techniques used. Transparent reporting allows readers to assess the study's credibility and trustworthiness.

In qualitative research, establishing trustworthiness is a fundamental objective. Trustworthiness entails ensuring that the research findings accurately reflect the experiences and perspectives of the participants. To achieve trustworthiness, researchers must align the various components of the research process and adopt a reflexive stance. Reflexivity involves self-awareness and acknowledgment of the researcher's social, cultural, political, and ideological perspective. By recognizing their own biases and subjectivity, researchers can mitigate potential sources of bias in the study. This reflexive approach enhances transparency and credibility in qualitative research, as it allows readers to assess how the researcher's perspective may have influenced the findings. In summary, qualitative research strives for high-quality outcomes by adhering to criteria, maintaining methodological rigor, and embracing reflexivity to ensure trustworthiness in the research process. In this study, I have comprised both thematic and discourse analysis stages. Thematic analysis involves interpreting and constructing meaning from the data, incorporating an interpretive lens (Berbekova et al., 2021; Ozuem et al., 2022). It aims to uncover data patterns, themes, and insights to address the research questions. Concurrently, the discourse analysis stage scrutinizes the language, rhetorical devices, and power dynamics evident in the data, offering a nuanced understanding of how language shapes and is shaped by social contexts. Both methods complement each other in providing a comprehensive view of the research subject.

4.4 Deductive or Inductive Reasoning

In the realm of reasoning, two fundamental approaches exist: deductive and inductive. Deductive reasoning employs a top-down methodology, commencing with a generalized theory and then narrowing it down to formulate specific hypotheses that can be empirically tested (Bryman, 2008; Trochim et al., 2017). This method involves the researcher formulating hypotheses derived from the overarching theory and subsequently testing them to either validate or refute the initial proposition. In contrast, inductive reasoning takes a bottom-up perspective, initiating from specific observations and patterns identified in the data to derive generalisations and theories (Bryman, 2008; Trochim et al., 2017) . It allows for the emergence of new theories or insights based on the empirical data collected.

Inductive reasoning, characterized by its open-ended and exploratory nature, commences with specific observations, and unfolds to generate theories or conclusions rooted in the data (Bryman, 2008; Trochim et al., 2017). It provides the flexibility for unexpected insights and theories to surface, which may not have been anticipated initially. In the context of social science research, both deductive and inductive reasoning approaches are frequently employed at various stages of the research process. In this study, an inductive approach is adopted to explore and analyse crisis communication on X by the Saudi MOH and the Saudi MOE during the Covid-19 pandemic. This approach does not begin with preconceived hypotheses but rather seeks to derive insights and conclusions from the observed data.

4.5 Data Collection and Sampling

the data collection procedure encompassed a sweeping aggregation of tweets issued by the Saudi MOE and the MOH from January to December 2020. The onset of the process involved an extraction of tweets, followed by a screening aimed at discerning those that harboured a significant level of engagement, as evidenced by retweet metrics

Adopting a methodological stance inspired by Chew and Eysenbach (2010) in their exploration of Ebola virus communications, this study excluded tweets that incorporated the '@' notation, which symbolizes conversational exchanges or responses amongst X entities, recognising the inherent analytical complications associated with contextual understanding in such instances. Concurrently, other forms of media, such as links, videos, and images, were also systematically excluded from analysis, underpinning a concentrated focus on textual content and its communicative efficacy amid the Covid-19 crisis. This textual focus

aimed to unearth nuanced insights regarding the linguistic attributes and their indicative reflection of the prevailing crisis communication strategies adopted during the pandemic, thus ensuring a focal consistency within the research scope.

I must acknowledge the common dependency on keywords and hashtags, as exemplified by methodologies illustrated by Demirel (2020) and Nautiyal et al. (2023). However, this approach is not devoid of limitations, primarily its potential to inadvertently overlook pertinent data by not recognizing tweets that implicitly reference the topic but without a specific keyword, or inadvertently incorporating tweets that, despite containing specified keywords, diverge from the core research objectives.

Step 1
Decide on Time Frame:
January 2020 – Dec 2020

Step 2
Data Collection via API scraping
Total number of tweets on MOH page: 3,431 (three thousand and four hundred thirty one)
Total number of tweets on MOE page: 3,070 (three thousand and seventy)

Step 3
Translation of full dataset to English

Step 4
Sampling
Final selected tweets from both Government institutions' pages: 200 (Two hundred)
(100/Hundred tweets/each Ministry)

Figure 2: Data collection process

4.5.1 Data scraping from X platform

In conducting a methodical exploration of the official X pages of the Saudi (MoH) and (MoE), I employed an array of keywords that were an amalgamation of both English and Arabic terms. The study ensured to distinguish between the languages to maintain linguistic accuracy and cultural relevance, adhering to the practice of rigorous and impartial academic inquiry. This distinction not only enhances the specificity of the research but also underscores the importance of linguistic context in understanding the dissemination of information by government entities. These keywords included terms such as "Coronavirus," "Covid-19," "outbreak," "social distancing," "Quarantine," "Coronavirus outbreak," "stay

home," "plague," "coronavirus pandemic," "masks," "vaccine," "virus," as well as hashtags including "#Korona," "#Corona," "#AllofUs," "#Wearealltogether," "#remotelearning," and "#remoteteaching." The choice of using both English and Arabic keywords reflects the bilingual nature of communication in Saudi Arabia, where English is often used alongside Arabic, especially in official and educational contexts. This comprehensive search strategy facilitated the identification of tweets specifically related to the Covid-19 pandemic based on their publication date. The most frequently utilised hashtag on both the MOH and the MOE's X pages was found to be #Covid-19, followed by # كلنا (meaning "all of us" in Arabic) and #stay-home. This approach allowed for a more inclusive search process, considering the bilingual communication landscape in the Saudi context.

Table 1: English, Arabic Keywords & Hashtags table

English	Arabic
Korona, Corona, Covid-19, vaccination, mask, Coronavirus, Covid-19, outbreak, social distancing, Quarantine, Coronavirus outbreak, stay home, plague, coronavirus pandemic, masks, vaccine, virus, #Korona, #Corona, #AllofUs, #Wearealltogether, #remotelearning, #remoteteaching	حظر. كورونا. كلنا. صحتي. لقاح. كوفيد. كلنا أمن. لقاح#كورونا. #جائحة.#كلنا. #تعليم #تعليم_عن_بعد

An application programming interface (API) is a standardized set of instructions or protocols that allow access to web-based tools or software (Ordenes & Silipo, 2021; Roos, 2015). In the case of X, the API enables researchers to retrieve data from X's platform (Chen et al., 2020; Ordenes & Silipo, 2021). In X research, two main types of APIs are commonly used: the streaming API and the search API (Gaffney & Puschmann, 2014). The streaming API,

also known as a push-based service, is predominantly utilised in quantitative X research (Gaffney & Puschmann, 2014). It provides a continuous stream of tweets based on specified criteria. On the other hand, the search API, also known as a pull-based service, functions similarly to the search feature available on the X web or mobile platforms. With the search API, researchers can retrieve specific data relevant to their research needs. Many studies have utilised both streaming and search APIs to collect data from X, as they offer cost-effective and efficient options for data collection.

For this study, the search API was employed to collect the relevant data necessary for analysis because of its helpful features such as 1) allowing access to structured data from various sources, which makes it easier to retrieve data from different platforms and integrate it into researchers' analysis. 2) Automation: API enables automation of data retrieval processes. Instead of manually data collecting. 3) Real-Time Data: Many APIs provide near-real-time data, which is crucial for applications where up-to-date information is required for analysis, decision-making, or monitoring. 4) Authentication & Authorisation: API can ensure that data access is secure and that only authorized users or applications can retrieve the data. 5) Consistency: consistency is a key to accurate analysis, Data accessed through API is typically consistent and reliable because it's provided directly by the sources.   6) Customisation: Many APIs allow researchers to customize the data they retrieve, specifying parameters to filter or refine the results. Notably, APIs are valuable tools for collecting and analysing data because they offer efficient, reliable, and structured access to data from a wide range of sources. Using the above features of API, I scrapped a corpus of three thousand four hundred and thirty-one tweets from the Ministry of Health page, and three thousand and seventy tweets from the Ministry of Education page. This entire corpus is further reduced to two hundred tweets in total (one hundred tweets from each page) using data sampling.

4.5.2 Data sampling

The research focused on a specific sample of the 200 most retweeted posts from each ministry. This sample was not arbitrarily chosen but was the result of a stratified and purposive sampling method. Stratified sampling involves dividing a population into subgroups and then taking a sample from each subgroup, while purposive sampling involves selecting items based on specific characteristics. The tweets in question were identified through their prominent feature of high engagement, particularly the volume of retweets they garnered. The rationale behind focusing on retweets, as opposed to likes or replies, is rooted in the communicative value they represent. A retweet primarily functions to amplify the

original message by extending its reach beyond its immediate audience, hence adding to its virality. While some scholars suggest that retweets imply endorsement or deemed importance of the content (Boyd et.al, 2020), other argues that retweeting can be a strategic or neutral act, not necessarily reflecting personal agreement or endorsement (Metaxas et.al, 2011; Morstatter, et.al, 2013). Given these definitions in mind, it is argued that users may retweet for several reasons, including visibility, irony, criticism, or for information sharing, rather than validation or endorsement alone as Garimella and his colleagues (2018) note. Given this context, I believe it is accurate to say that retweets function as disseminating messages rather than a definitive marker of validation. In the context of crisis communication, the frequency of retweets can signal the urgency and relevance of messages, thus serving as a reliable indicator for selecting a robust sample. Moreover, focusing on retweeted content aligns with the research question concerning language use. Tweets that are extensively retweeted can provide insights into the language that resonates most with the audience, whether it be the simplicity, clarity, or emotional appeal of the message. The selected dataset comprised 200 tweets from the official X pages of MoH and MoE. Each ministry contributed 100 tweets, chosen based on the volume of retweets—a direct measure of engagement and reach. Retweeting is the unique feature of X, and X users use this option to "speed up the information sharing process" (Mahdikhani, 2022, p. 72). Given this context, it is argued that retweeting represents "X users' interest on a large scale" (Mahdikhani, 2022, p. 72). The popularity of tweets is measured by checking the number of retweets. In line with the same idea, the study of Kwak et al. (2010) argue that the volume of retweets has a stronger impact and represents public engagement. Therefore, I selected the 200 most retweeted posts, 100 from each ministry. These tweets are original posts, not retweets because the goal was to explore what original content each ministry pushed out to the public. In addition to the selected two hundred tweets, public engagement is also examined by incorporating one hundred and twenty comments associated with the selected tweets. These comments are selected systematically. For instance, I identified the three most engaging comments that I measured by likes and replies under the forty most retweeted tweets. In so doing, I ensure that the analysed comments are the most interacted and visible, providing insight into the ways the audience engages with and interprets the original tweets. To analyse the engagement and the original tweets, I used Braun and Clarke's thematic analysis, tagging them according to the emerging themes as mentioned in the next chapter. By analysing the comments, I could assess whether the key themes in my selected tweets are endorsed, contested, or expanded by the audience.

4.5.3 Data translation and analysis

the original tweets were written in Arabic, as they were intended for the Saudi public. The aggregate number of tweets obtained from both organisations was exactly 6,500, representing a substantial corpus of data. A rigorous backward and forward translation technique was employed to ensure the accuracy and consistency of translations in qualitative research involving different languages.

First, a bilingual translator proficient in Arabic and English translated all 6,500 tweets from (Arabic) to (English). Subsequently, another bilingual translator, who was unaware of the original Arabic text, undertook the back-translation of the materials from (English to Arabic). This second translator also reviewed the back-translated materials to ensure fidelity, coherence, and cultural appropriateness of the Arabic version. By scrutinizing the original and back-translated Arabic versions and validating the accuracy, consistency, and cultural relevance of the translations in the forward translation process, the translation's integrity and reliability were upheld. The responsibility of translating the tweets into English was entrusted to Nuha Alharbi, a lecturer at King Abdul Aziz University in Saudi Arabia, who is currently pursuing a PhD in Linguistics at Sheffield University. Furthermore, the English version underwent scrutiny by Nasir Alsubai, an Assistant Professor of Translation Studies at Imam Muhammad ibn Saud Islamic University, Saudi Arabia.

Along with Arabic language, some tweets are posted in other languages (for instance, Urdu, Bengali, English, and French). It is worth mentioning here that Saudi Arabia is a global community where expatriates from various countries reside and work. A large population of expatriates comes from Pakistan, India, and Bangladesh (Kirat, 2007). Urdu and Bengali are specifically chosen to cater to specific demographic groups like Indian, Pakistani, and Bangladeshi. The English language serves international audiences whereas French serves the audiences of Francophone countries. I identified 37 tweets posted in Italian, English, Urdu, Bangladeshi, and French languages out of the selected 100 tweets by the MoH and 19 tweets posted in the above-mentioned languages by the MoE from their 100 sampled tweets.

4.5.4 Time Framework of the Tweets

I have separated the crisis communication into several timeframes. Keeping in view Fink's structural division of crisis messages, these tweets are also categorized into four timeframes equally: Prodromal Tweets (early tweets), Breakout tweets, Chronic Tweets, and Resolution tweets (Fink, 2002). In so doing, I have looked at tweets of each stage of the crisis from Jan

2020 to Dec 2020. This gives me an overview of how the selected institutions keep shaping their crisis communication according to the situation. The collected data at this stage was then deeply analysed using critical discourse analysis.

Table 2: Time frame of the pandemic during Covid-19 in KSA

Phase	Time frame	Significant Events in Saudi Arabia
Prodromal (pre-crisis) Stage	Jan – Mar 2020	Warning signs about the infection from abroad. The first domestic case of Covid-19 was confirmed in March.
Breakout Stage	Apr – Jun 2020	Fast spreading of Covid-19. The Eid al-Fitr celebration occurred during this time.
Chronic Stage	July – Sept 2020	Peak of the pandemic in Saudi Arabia. Two major Islamic rituals, Eid al-Adha and Hajj, took place during this time.
Resolution Stage	Oct – Dec 2020	Number of cases decreased and the country moved to a relaxation of rules.

The collected data was divided into different subsets for phase-wise analysis. Considering the overall situation in the Covid-19 pandemic, I divided the data according to the time span into different phases provided by the MoE and MoH. Each phase is classified according to Fink's (2002) four-stage model. Fink (2002) provides a four-stage model that "examines a crisis as an extended event with sufficient warning signs that precede the event" (p. 5).

The Prodromal stage, in other words, the Pre-Crisis stage, is determined to span from Jan 2020 to March 2020. Normally at this stage, crisis managers attempt to identify the impending crisis. The role of crisis management professionals is not reactive at this stage but proactive. This stage occurred prior to the start of infection in Saudi Arabia, as signs of the pandemic were already observed in other countries like China and many European Countries. No case has been identified during this time in Saudi Arabia yet. However, the X handler of the Ministry of Health and Ministry of Education start posting risk tweets that include information about the Corona Virus, its symptoms, and its transmission mechanism. The first confirmed case was reported in March in Saudi Arabia. According to World meters, the first case of Covid-19 in the Kingdom of Saudi Arabia was announced on March 2, 2020.

The second stage where the actual crisis begins with a trigger is also known as an acute stage or Breakout stage. The initial stage starting from April 2020 to June 2020 covers the recording of all initial cases in Saudi Arabia and it spreads to major cities in Saudi Arabia, indicating a breakout stage of a crisis in Saudi Arabia. During this period, "there were 157,600 confirmed cases of Covid-19 in the country" (Alhassan & AlDossary, 2021). Considering the scenario of pandemics at this stage, it can be considered the breakout stage of Covid-19. During this time, warning tweets highlight dangers and risk factors associated with Covid-19. Both subsequent stages reflect the phases when the pandemic becomes even more serious. At this stage, communication changes (for instance, the frequency of warning tweets was increased) and increases due to the rising level of perceived threats. There are several peaks at this stage that I discuss later in the chapter. This stage is followed by the Chronic stage (July 2020 – Sept 2020) which is considered the peak stage of the pandemic. This is the reason that most risk and warning tweets are posted during this stage.

The previous research illustrated the relaxation phase as the pandemic subsided after a lockdown (Kapoor & Ravi, 2020). The relaxation of the lockdown took place in two phases in Saudi Arabia. The lockdown was partially revoked in the first step when small shops were allowed to open under the condition of masks and distancing. In a second phase, the decision of easing the lockdown was left for the federal districts to decide according to the pandemic scenario in their respective districts. During this time, many services like hairdressing were allowed to work with restrictions. Moreover, restaurants and larger shops, and shopping malls were also operated under the strict conditions of social distancing and mask obligations. This phase can be termed, what Fink calls, the Resolution stage and took place during October – December 2020. During this stage, the uncertainty regarding perceived threats was reduced and some normality in life was re-established. At this stage, reassurance and efficacy tweets are posted by the Ministry of Health and the Ministry of Education. Not only does the government keep posted about personal preventive measures and individual responsibility but also provides information about government intervention to the public and expresses its gratitude to health workers and to the public who are behaving responsibly during all this time.

Further analysis is carried out in the next chapter based on each phase. I analyse the tweets regarding each subset in detail. It is worth mentioning here that the various stages of the CERC model have not been yet clearly operationalized within the context of infectious disease. My study is applying the CERC Model to the Covid-19 pandemic. The original CERC model assumes that "crisis will develop in largely predictable and systematic ways"

(Reynolds & Seeger, 2005, p. 48). However, infectious disease outbreaks such as Covid-19 occur spontaneously and may last for months or even years without clear boundaries in comparison to other crises (like floods and earthquakes). In this study, outbreak stages were determined based on specific events of the Covid-19 pandemic in Saudi Arabia and the CERC model. It's worth noting that, while this period captures the bulk of the outbreak, it does not account for subsequent developments, such as the second wave in 2021.

4.6 Thematic analysis

As the research questions evolved over the course of the research, it became apparent that thematic analysis is needed to gain in-depth insights to address the research question of this study. Braun and Clarke (2006) argue that

> Thematic analysis is a method for identifying, analysing, and reporting patterns (themes), within data. It minimally organizes and describes the data set in (rich) detail. However, it frequently goes further than this and interprets various aspects of the research topic (p. 79).

Thematic analysis was chosen for this qualitative study as it enables a comprehensive and detailed analysis of the collected data (Steckler et al., 1992). By following Braun and Clarke (2006) six-phase framework, the analysis process involved familiarizing with the data, re-reading the data to identify patterns, searching for themes and sub-themes, revising, and refining the identified patterns and themes, condensing the data into a thematic map, and finally writing the results.

Thematic analysis, as elaborated by Braun and Clarke (2006), emerged as a suitable tool, offering a structured means to achieve this end. Using Braun and Clarke's six steps, I first arranged my data, I then read and re-read to identify common themes and patterns in the selected data. I then grouped them and classified them into different themes followed by the analyses of those tweets according to the identified themes. The thematic study of tweets provides a comprehensive understanding of crisis communication strategies during the Covid-19 pandemic as illustrated below. Such an arrangement not only helps in deducing the nuances of the data but also unveils patterns that illuminate the communication strategies undertaken by Saudi organisations on the X platform amidst the pandemic.

4.6.1 Themes of the selected Tweets

A few studies delve into what aspects of crisis communication are happening in these messages. In their study, Heverin and Zach (2010) made a distinction between opinion-related tweets and information-based tweets which is further expanded by Cho et al. (2013). They introduced a new typology and new distinction in the informational tweets. Wang et al. (2021) generated 16 more themes based on Cho et al.'s work after examining the type of crisis communication that happened at the national, state, and global levels during different pandemics or crises.

Wang et al. (2021) present 16 thematic categories on the basis of content analysis of tweets. They named the tweet according to what the language is about. Here I present a brief overview of all 16 thematic categories before I present my themes. Wang et al. (2021) argue that tweets that describe preventive strategies to minimize the spread of infection are termed precautionary measure tweets, whereas tweets including recommendation and advice are called preparatory tweets. Tweets that convey information regarding the associated risks are known as information tweets while the tweets passing executive orders were called order tweets. Likewise, tweets conveying information regarding personal hygiene are called efficacy tweets, the ones representing gratitude to people are known as thank you tweets. Resource provisions are those tweets that describe the relief measures taken by the government to alleviate the impact of the pandemic. Tweets that denote constructive criticism or blame the actions of the government or opposition party are called constructive criticism. Similarly, tweets denoting public briefings, press conferences, and discussions are referred to red as media engagement tweets, whereas tweets boosting the spirit or morale of people are termed as morale-boosting tweets. Collective focus tweets, as the name indicates, refer to collective unity to fight the pandemic together. Tweets that describe the leader's calcinations are called leader pro-activeness tweets. In line with the same idea, self-bolstering tweets include praising their own party's actions by government agencies. Tweets denoting critical commentary, ideas, or opinions regarding the pandemic are called opinion and commentary tweets. Tweets representing donations and volunteering practices or seeking donations or volunteer called volunteer or donation tweets. Lastly, tweets that represent gratitude, and appreciation for any specific group or individuals are called follower's worth.

Keeping in view this study, I initially identified six themes. Using Braun and Clarke's thematic analysis, the selected tweets are tagged according to the descriptions. It is then clustered and classified to generate themes reflecting the latent meanings, descriptions, and main purpose of each tweet. During this process, two initial themes were found to be

overlapping each other, leading to the integration of broad categories. This process ensures a more rigorous classification and coherence. Consequently, a final set of four themes is created providing a more structured and clearer interpretation of data. The individual tweet was the unit of analysis. The date of the tweet, on which it is published, was recorded.

Each tweet is primarily organized based on content by seeing certain repetitive keywords and hashtags, such as: #Coronavirus, Covid-19, outbreak, #social distancing, #Quarantine, #Coronavirusoutbreak, #stay home, #plague, coronaviruspandemic, masks, vaccine, virus, #Korona, #Corona, #AllofUs, #Wearealltogether, #remotelearning, and #remoteteaching, etc.

I follow five phases to analyse the themes of the selected tweets. In the first phase, I familiarized myself with the data by reading hashtags and keywords associated with each tweet. This helps me to obtain the initial list of themes. In the second phase, initial themes are generated that are defined by Covid-19 and its consequences along with associated hashtags. Hashtags are particularly useful in describing the content of tweets. For instance, not only do #remoteteaching and #remote learning emphasise the importance of remote learning and teaching during the pandemic but also refer to educational tweets. I then analyse the content or language of the selected tweets to generate themes and sub-themes in the third phase. For instance, #Lockdown, #quarantinelife, and social distancing refer to the sub-thematic category "restrictions at home". In the fourth phase, I reviewed themes, and where necessary I refined and combined them, followed by the fifth phase where I separated them into themes and sub-themes. Names are also assigned at this stage to help readers to comprehend the meaning of themes.

4.7 Critical Discourse Analysis

After I organised my tweets in different themes, I have done the discourse analysis of the selected tweets. This study employs Fairclough's (1989, 1995) three-dimensional model of Critical Discourse Analysis, which facilitates a layered understanding of how language constructs and reflects social realities. This framework enables a systematic exploration of textual features, interpretive processes, and socio-cultural contexts, allowing for a comprehensive analysis of public discourse during the Covid-19 pandemic on the X platform. Fairclough's model consists of three interrelated levels: (1) textual analysis, which focuses on the linguistic features and structure of the tweets; (2) discursive practice, which considers how the tweets are produced, disseminated, and interpreted; and (3) social practice, which connects the discourse to wider socio-cultural and institutional contexts. This multi-level approach is particularly suited for understanding how public discourse is shaped by and reinforces institutional authority, national culture, and crisis dynamics. The framework allows

for an in-depth examination of both the explicit content and the implicit values embedded within the government's online crisis communication.

By applying critical discourse analysis (CDA), this research undertakes an examination of selected tweets, conscientiously embedding them within their expansive social matrix. CDA, grounded in the theoretical underpinnings articulated by Fairclough (2013) and echoed by Titscher et al. (2009), emerges as a paradigm aimed at providing insights into social issues. It does so by deciphering the linguistic mechanics that scaffold the organisation and transmission of knowledge within social constructs (p. 7; p. 252). CDA inherently seeks to decipher the symbiotic relationship entwining society, text, culture, and discourse, consequently probing into the foundational reasons and resultant implications of societal issues.

Diving deeper into the linguistic realm, CDA substantiates its pivotal role in deciphering the language embedded within texts and conversational exchanges, its efficacy invariably hinged upon the interpretation of utilised language. McGregor (2010) accentuates that in both oral and written communicative modalities, the connotations harboured by words serve as a ripe ground for analysis, enabling discernment of latent intentions. Language, whether manifested in spoken or written discourse, inherently guides, or governs those perched upon pedestals of power, rendering CDA an irreplaceable analytic tool when manoeuvring through social and political landscapes, as it aids in interpreting, describing, critiquing, and dissecting social issues as reflected within texts. Consequently, the demystification of relationships amongst texts, social interactions, and practices, and the interpretative lens through which discourse is viewed, becomes imperative, as underscored by Rodgers et al. (2005). This analytic modality extends beyond mere textual analysis, propelling the inquiry into a critical examination of broader societal practices.

Embedding this analysis within the framework of crisis communication, especially through the X platforms of diverse Saudi entities during the pandemic, this research finds an apt analytical companion in Rodger et al.'s model of CDA, employing its tripartite stage of description, interpretation, and analysis/explanation. Such a methodological trajectory endeavours to illuminate the crisis communication phenomena that permeated through the X domains of various Saudi institutions during the pandemic's timeline. The enactment of CDA elucidates the thematic undercurrents pervasive within posts, casting light upon the strategic crisis communication techniques leveraged by the MOH and MOE, aimed at optimally disseminating information and catalysing effective public engagement. As a comprehensive analytic scaffold, CDA permits a deep dive into linguistic facets and their extrapolated societal implications, particularly within the sphere of crisis communication amidst the Covid-

19 pandemic, unravelling the nuanced interplay between discourse, public perception moulding, and information dissemination, all whilst dissecting the concealed meanings and socio-political repercussions embedded within X-based crisis communication.

Employing a hybrid methodology that integrates thematic analysis and CDA allows for a multifaceted exploration of the research context, harnessing the strengths inherent within each analytical approach. The thematic analysis provides a structured method to identify, analyse, and report patterns (themes) within the data, thereby offering an accessible and theoretically flexible approach to analysing qualitative data (Braun & Clarke, 2006). Meanwhile, CDA, as propounded Fairclough (2013), transcends mere linguistic analysis, delving into the socio-political and cultural implications embedded within textual data. CDA aims to explore how discourse reproduces social power and ideologies, thereby providing a lens through which the research can decipher not only what is communicated but also the broader socio-cultural and political contexts within which such communication is nested.

The convergence of thematic analysis and CDA generates a nuanced analytical lens, where thematic analysis facilitates the identification and exploration of emerging patterns and themes, and CDA assists in unravelling the intricate interplay between language and power, shedding light on how discourse shapes and is shaped by social structures and power relations (Fairclough, 2013; Wodak & Meyer, 2015) This methodological amalgamation offers not merely a bi-dimensional analytic lens but provides a sophisticated, stratified methodological framework that enables a rich, nuanced analysis of the communicative phenomena under investigation, ensuring that the research conclusions are both robust and contextually embedded.

4.8 Quality of Research

4.8.1 Trustworthiness

Ensuring the trustworthiness and rigour of a study is paramount in maintaining the quality of research. Polit and Beck (2020) define trustworthiness as the extent of confidence in the methodology, data analysis, and interpretation employed to ensure the integrity of the study. It is the researcher's responsibility to establish and assure the trustworthiness of the study, which can be achieved through systematic data analysis. Employing a qualitative research methodology approach, particularly rigorous CDA, can yield trustworthy and insightful findings when conducted in a systematic step-by-step manner. Thus, in this study, the structural division of the selected sample into four distinct timeframes was carried out, and a thematic analysis based on Braun and Clarke (2006) framework was conducted prior to engaging in critical discourse analysis.

To assess the trustworthiness of qualitative research, four key aspects are considered: dependability, transferability, credibility, and confirmability (Lincoln & Guba, 1985). Dependability refers to the stability and consistency of the data over time. Transferability entails the ability to generalize findings from a specific sample to a broader population (Maxwell, 1992). Credibility is established by comparing participants' perspectives with the researcher's interpretations, ensuring alignment between their expressions and the researcher's original intentions (Lichtman, 2013). Confirmability involves matching and examining the similarities among data collected by different researchers to enhance accuracy and relevance. In this study, all four aspects of trustworthiness have been systematically addressed during the data collection and analysis process. The selected data encompasses a complete year, from January to December 2020, capturing various patterns and fluctuations in crisis communication over time. This one-year data serves as a representative sample of the broader pandemic, which has persisted for over three years (November 2019 - ongoing). This selected one-year timeframe (January–December 2020) encompasses critical phases of the Covid-19 pandemic that have been well-documented by health authorities such as WHO and the Saudi Ministry of Health. This includes the declaration of Covid-19 as a global pandemic in March 2020, nationwide lockdowns initiated between March and May 2020, the shift in public adherence and sentiment over the year, and the initial rollout of vaccines starting in December 2020. These events are reflected in publicly reported statistics such as infection rates and government announcements (MoH, 2020; WHO, 2020). Analysing this pivotal period thus offers robust and representative insights into how crisis communication strategies evolved and adapted to changing circumstances throughout the pandemic.

4.8.2 Ethical consideration

In accordance with the ethical principles outlined by UKRI, this study carefully considers the six core principles of ethical research. Firstly, the study aims to maximize individual benefits and minimize potential harm and risks associated with the research. Secondly, the rights of participants, in this case, X users, are respected, ensuring their privacy and confidentiality. Since X is a public platform accessible to anyone with internet access, the study adopts the position that X data is public data (Beninger et al., 2014). It does not require subscriptions, payment, or passwords to access. As a private and non-commercial study, copyrights, designs, or patent act do not apply. As there are no participants involved in this study, but rather the data is collected from the public tweets of the two Ministries, voluntary participation does not apply. Moreover, the collected data does not involve sensitive topics, eliminating potential risks or conflicts of interest.

Throughout the research process, transparency and integrity are maintained. The study adheres to clear lines of accountability and responsibility, ensuring that the research is conducted

responsibly and accountable. Any potential conflicts of interest are explicitly stated at the outset of the study. By considering these ethical guidelines, the study upholds ethical research principles, respecting individuals' rights and ensuring that the research is conducted with transparency and integrity. The utilisation of publicly available X data, devoid of sensitive content, further mitigates potential risks or conflicts of interest.

Chapter 5: Analysis and Discussions

This chapter presents the findings and discussions derived from the analysis of X data during the Covid-19 pandemic. The aim of this chapter is to delve into a detailed thematic and discourse analysis of the selected tweets posted from January 2020 to December 2020. By examining the tweets' content, themes, and linguistic features, this study aims to gain a deeper understanding of the crisis communication strategies employed by Saudi government organisations on the X platform during this unprecedented period. The analysis conducted in this chapter contributes to the existing literature on PR and crisis communication, shedding light on the effective use of social media platforms, particularly X, for engaging with the public during times of crisis. The thematic and discourse analysis also offers insights into the underlying social, cultural, and linguistic dimensions of the crisis communication messages conveyed through X. The analysis offers a nuanced understanding of the X communication landscape during the Covid-19 pandemic, highlighting the importance of leveraging digital platforms for transparent and timely communication in the face of public health emergencies.

In the study of infectious disease progression and management, various models have been developed to better understand and predict the spread and impact of diseases. One such model, which offers a comprehensive framework for categorising the various stages of a disease's spread, is particularly salient for the context of the Covid-19 pandemic. Cooper et al. (2022) provide insights into the application of an SIR model for the spread of Covid-19 across different communities. This model delineates the progression of a pandemic into four distinct stages. The initial Prodromal Stage captures the early signs and preliminary cases of the disease. This is followed by the Breakout Stage, where the disease witnesses a rapid increase in the number of cases and begins to garner significant attention. Buchwald et al. (2020) discuss the importance of infectious disease transmission models to predict and evaluate the trajectory and interventions during Covid-19. The subsequent chronic stage represents the zenith of the disease's prevalence, marking the period when the highest number of cases is recorded. Finally, the Resolution Stage ensues, signifying a decline in new cases and the beginning of a return to normalcy. Incorporating this model provides a structured lens through which the trajectory of a pandemic can be assessed, thereby facilitating a more nuanced understanding of the disease's progression and the corresponding measures that ought to be implemented at each juncture.

5.1 Key events during the 2020 Outbreak

In order to provide a comprehensive analysis of the discussions that occurred on X during the relevant period, it is essential to review the contextual events that transpired during that time. The table below presents an overview of the events that unfolded during the specified period. By examining these events, we can better understand the contextual factors that influenced the discussions and discourse on X regarding the outbreak. This contextual review contributes to a more nuanced interpretation and analysis of the data collected from the X platform.

Table 3: Timeline and Progression of Covid-19 in Saudi Arabia: Significant Events and Stages (January - December 2020)

Timeframe	Events	Ministry of Health tweets/ stage	Ministry of Education tweets / stage
Prodromal Stage Jan - Mar 2020	The first case of Covid-19 was confirmed in March	600	300
Breakout stage Apr-Jun 2020	Eid (one of the major Islamic events) occurred during this time, and Covid-19 spread fast.	831	770
Chronic stage Jul–Sept 2020	Two major Islamic rituals (Eid and Hajj) took place during this time, and the pandemic was at its peak in Saudi Arabia.	1500	1500
Resolution stage Oct – Dec 2020	The cases were decreasing, and thus the	500	500

	country moved to the relaxation phase.		

the MOH X page comprised a total of 3,431 relevant tweets during 2020, while the MOE X page consisted of 3,070 relevant tweets. These statistics highlight the respective organisations' active engagement and communication efforts throughout the first year of the Covid-19 crisis. The fluctuations in the number of tweets during the period reflect the dynamic nature of crisis communication on the X platform, as organisations sought to provide timely updates, disseminate information, and engage with the public during this challenging period. The analysis of these tweet numbers provides a quantitative understanding of the communicative activities carried out by the MOH and the MOE on their respective X platforms. See the figure below:
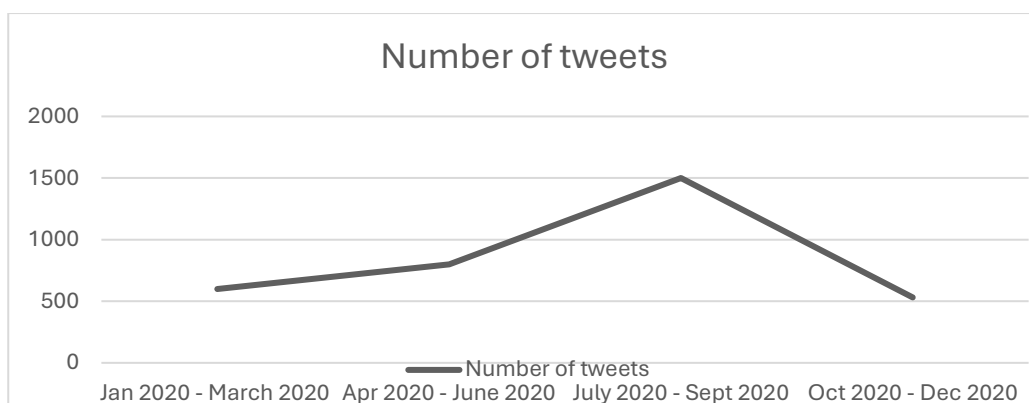
Figure 3: number of posts on the MOH page. (N = 3,431)
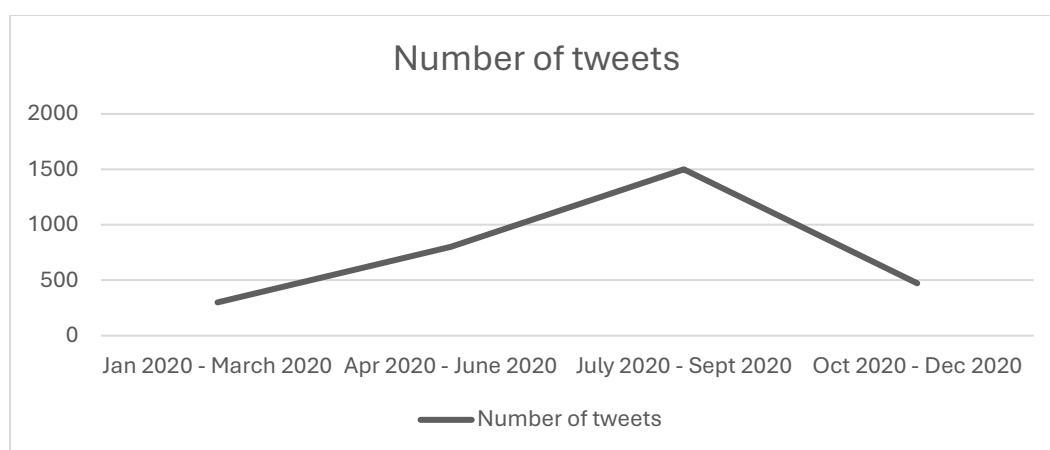
Figure 4: number of posts on the MOE page. (N = 3,070)

The previous tables provide a depiction of the distribution of total tweets posted throughout the selected timeframe (January 2020 - December 2020) in this study. It is evident that the number of tweets steadily increased until September 2020, followed by a gradual decline on both the Ministries' X pages. As previously mentioned, during the final phase, when the Covid-19 situation was under control, a slight decrease in the number of posted tweets is expected and reasonable.

5.2 Themes of the Selected Tweets

The close analysis of the selected tweets illustrates the existence of four themes and seven sub-themes. I analyse my collected tweets and identify themes "within the surface meaning of the data" (Lindekilde, 2014, p. 200). While themes represent the general topics or concepts, sub-themes are more specific in nature. Following are four themes:

- News and updates

- Call to action
- Awareness and Education
- Reassurance and empathy

Whereas sub-themes are illustrated on the following page:

- Medical encompasses medical-related issues
- international includes inter-nation affair-related issues
- restriction/home/lockdown is characterized by the issues related to restriction, lockdown, or staying home and deals with issues like how the lockdown is affecting families in the kingdom.
- Spread this sub-theme of spread revolves around the issue of preventing the spread of the Covid-19.
- Religion tweets in which government officials advised the public using religious references
- Information tweets that combat the misinformation, disinformation or to dismantle the propaganda news associated with the Covid-19
- economy this sub-theme deals with the economic consequences of the pandemic. While the main themes are broad and encapsulate the main findings of my thesis, sub-themes are more specific elements that enhance the main themes. Keeping this in mind, each of the subthemes is related to the main themes as given below.

Theme 1: Awareness and Education
- ➢ Medical messages
- ➢ Religion messages

Theme 2: News and Updates
- ➢ Medical messages
- ➢ Countering Misinformation messages
- ➢ International messages

Theme 3: Call to Action
- ➢ Restriction, Stay Home, Lockdown messages
- ➢ Spread messages

Theme 4: Reassurance and Empathy
- ➢ Economy messages
- ➢ Religion messages

While the above structure illustrates the hierarchal relationship between themes and sub-themes, it also shows that they are overlapping. For instance, considering that awareness

and education convey awareness regarding the coronavirus, medical tweets were often seen under this main theme. However, they were also present under the News and Updates theme as they contain information regarding the disease and its transmission. Similarly, Religion messages also feature under Theme 1, Awareness and Education, as well as Theme 4, Reassurance and Empathy. In the following pages, all these themes and sub-themes are discussed, and I investigate how the proportion of these themes changes during 2020 to gain an understanding of how the Covid-19 discourse evolved and shifted longitudinally. Before, I present the detailed thematic analysis, it is important to highlight the sub-themes and their related vocabulary in the selected tweets. This will provide a context for the subsequent explanations and allow for more comprehension.

Table 4: Words associated with different themes

Sub-Theme: Medical	Sub-Theme: International	Sub-Theme: Restriction	Sub-Theme: Spread of pandemic	Sub-Theme: Economy	Sub-Theme: Countering the misinformation	Sub-Theme: Religion
Doctors	WHO	Lock down	Positive	Economic crisis	wrong information	Custodians of holy mosques
Masks	Cases	Stay home	Tested	Support	rumours	Fasting
Vaccine	Deaths	Online shopping	Mitigation of infection	Government	misinformation	Ramadan
Covid-19		Quarantine	Health protocols	Packages	disinformation	Eid
Care		Suspension of study		Pay	official sources	Cleanliness
Patients		Remote education			news	Faith
		E-learning				Allah

The above table shows the most closely associated words with each theme. Before I move on to explain the trajectory of these sub-themes phase wise, I want to give a brief overview of what these sub-themes stand for. The sub-theme Medical elucidates the communication approaches utilised by the Saudi Ministry of Education (MOE) and Ministry of Health (MOH) in diffusing critical health information and advocating for collective public action during the Covid-19 crisis. The International sub-theme broaches the sphere of international dynamics, collaborations, and the global narrative of the pandemic as reflected within the MOE and

MOH's X communications. The tweets under this sub-theme potentially navigate through international health guidelines, global pandemic status, international collaborations, and comparisons, thereby providing a global context to the national efforts and scenarios. Restriction covers enforcing restrictions, safety protocols, lockdowns, and stay-at-home orders. This theme is pivotal to understanding how the MOE and MOH communicated restrictive measures and safety guidelines to the public via X during the pandemic. The spread of the pandemic involves tweets that communicate the progression, severity, and multifaceted impacts of the pandemic within Saudi Arabia. The Economic theme encapsulates tweets that communicate the economic implications, strategies, and recovery efforts initiated in the face of the COVID-19 pandemic. The sub-theme "Countering the Misinformation" cohesively binds tweets that are centred around disseminating varied information, updates, and guidelines concerning the pandemic, thereby serving as a vital channel of continuous communication between the ministries and the public. Lastly, the sub-theme, religion, focuses on how religious practices, values, and events were interwoven in the communication strategies of both Ministries. In a religious country like Saudi Arabia, religion plays a key role in shaping people's responses and behaviours. Therefore, tweets under this sub-theme represent the religious perspectives on health and safety measures.

When analysing the overall data, the dramatic increase of tweets related to restriction, in the first phase (prodromal stage) is seen. It is noteworthy that tweets related to this theme are posted throughout the selected time frame and in every phase. A similar trajectory is observed in the sub-theme of spread with the exception that we see a sudden drop in tweets related to spread in the end phase. Discourse on international issues is mainly dominated in the first phase with a substantial drop seen in the rest of the phases. The discourse of medicine, religion, and information seems to be dominated throughout the period. Both selected government institutions seem to update the tweets dealing with medical throughout the selected time frame (in each phase). Lastly, the dramatic increase is seen in the tweets dealing with the economy. It is noteworthy that no tweets related to the economy are seen in the first two phases. They are only dominated in the last two phases. The interesting aspect is that all kinds of Tweets of both Ministries increase or decrease simultaneously though with different ratios as illustrated below in the line graph of both ministries.
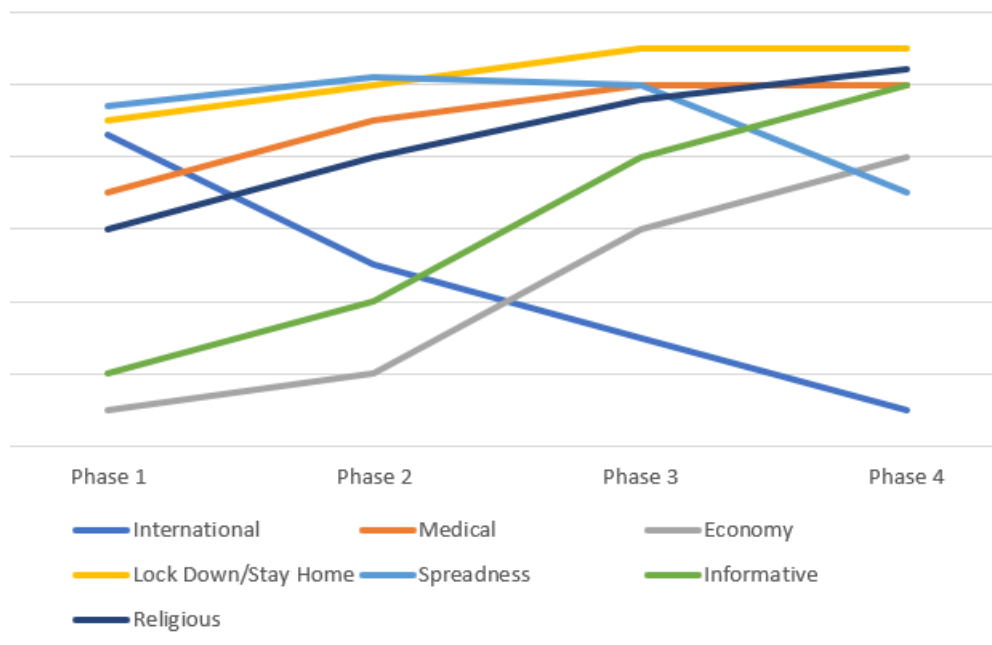
Figure 5: Line graph of the different tweets by Ministry of Health
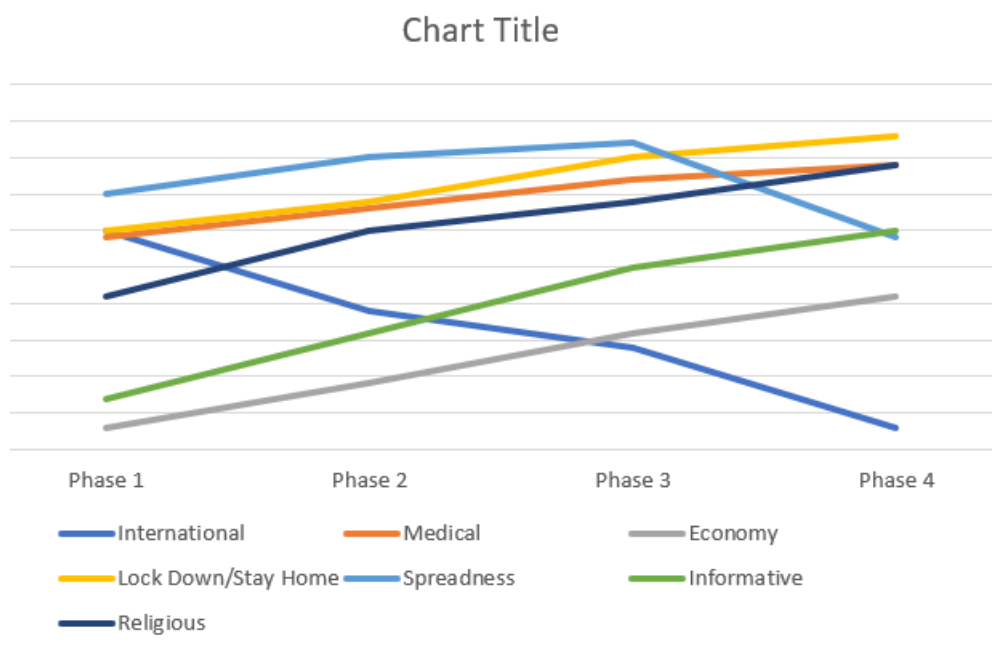
Figure 6: Line Graph of the different tweets by Ministry of Education

Given this context, the difference across periods is clear. The above line graph of both Ministries shows that the theme of international is consistently the most negative with respect to polarity. In contrast, the theme of the economy which is quite negative in the beginning becomes substantially positive over time. The theme of lockdown/stay-home and medical remains positive across the phases. Following the same trajectory, the topic of

information and religion remains positive across all four phases. Lastly, the topic of spread is also positive in the first three phases but then experienced a negative shift in the last phase.

Overall, the initial phase is comparatively characterized by the low frequency of covid-19 tweets. The Covid-19 tweets in the first phase focused on the pandemic in China, Iran, and Italy – so the polarity of international tweets was positive – and the number of cases and deaths reported in those regions. The second phase was dominated by hygiene, medicine, religion, and spread issues. The third phase shows a dramatic increase in tweets related to lockdown, religion, and information to counter misinformation and a substantial drop in tweets related to international affairs.

5.3 Thematic Analysis of the Selected Tweets

Themes 1: Awareness and Education

This theme includes posts that convey awareness, education, and advice regarding the coronavirus pandemic. Of the overall 200 messages, 63 (31.5%) were identified as awareness and educational tweets, out of which 28 tweets were posted by MoH and 35 were posted by the MoE.

Table 5: Awareness and Education tweets distribution

Stages of the pandemic	Number of awareness and education tweets posted by MoH	Number of Awareness and Education tweets posted by MoE
Prodromal stage	05	10
Breakout stage	09	11
Chronic stage	10	09
Resolution stage	04	05
Total	28 (45%)	35 (55%)
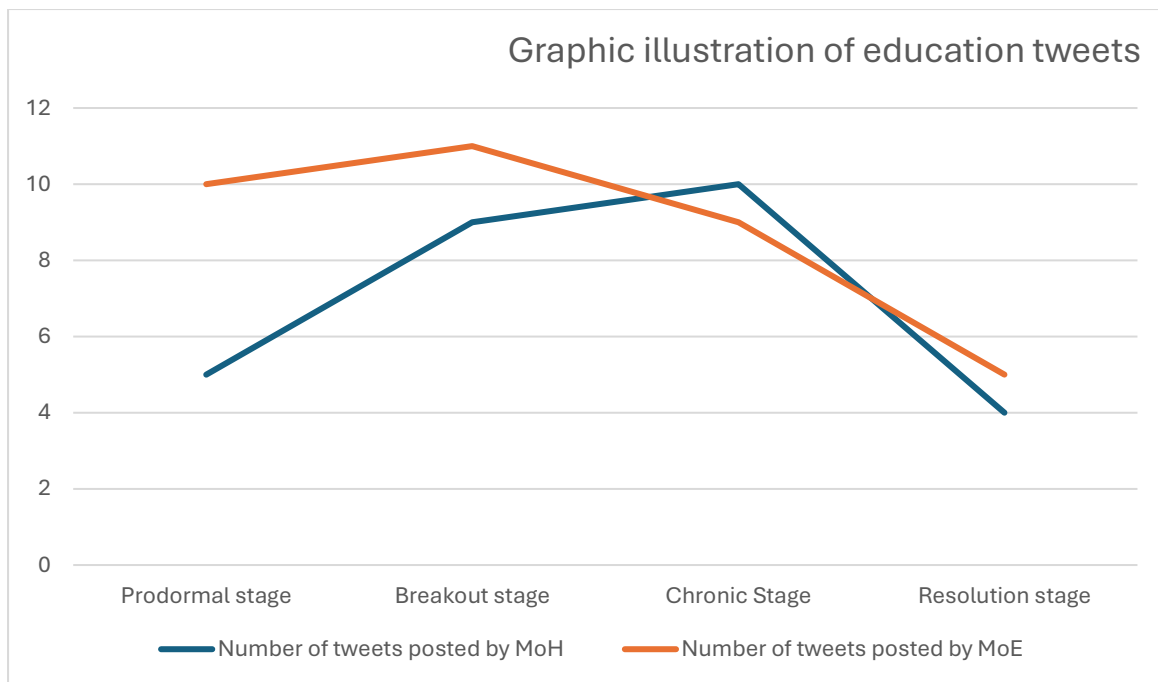
Figure 7: Breakdowns of awareness and education tweets

The above graph illustrates the number of breakdowns of awareness and education tweets of both Ministries throughout the pandemic. The graph shows that most awareness and education tweets were posted by the MoE. The frequency of posting awareness and education tweets by the MoE was seen to be higher during the first two stages. Whereas the frequency of posting the same tweets by the Ministry of Health was seen as higher during the chronic stages. The least number of education tweets postage was seen during the last phase, the resolution stage by both Ministries. This difference could be best explained by the nature of both Ministries. Since the Ministry of Health is more concerned with precautionary measures and warning signs and symptoms, the frequency of such tweets was seen higher by the Ministry of Health. In contrast, the Ministry of Education posted more educational tweets considering that MoE is more concerned with education.

Critics of crisis and risk communication are of the view that all tweets' posts related to coronavirus convey certain kinds of information related to the pandemic (Seddighi & Salmani, 2020). From early warnings, rapid assessment, and recordings of public sentiments, to informing people, X has many functions in managing the disaster (Seddighi & Salmani, 2020). I found this claim true however, certain tweets are particularly providing education and awareness to the public. Therefore, the language of education and preparation tweets is instructive. For example, the Ministry of Health posts many practical guides regarding coronavirus that guide people step by step as

8 steps to protect yourself from #coronavirus (09/04/2020, MoH 67).

Another tweet says

*pregnant and worried about coronavirus? Stay safe with the following simple tips (*24/06/20, MoH 84).

In the same way, I found many posts regarding
*a handy guide to home quarantine, (*21/07/20, MoH 65).

Another tweet
*When you should quarantine, (*21/05/20, MoH 57).

Upon analysing these tweets, it is clear that these tweets are contextually instructive, meaning that government officials are instructing people according to the context and providing guidelines for managing the crisis. Similarly, the guides and instructions are occasionally posted for diabetic and heart patients as well. It is worth mentioning here that guidelines and instructions for patients were normally posted either in the form of video or links – something which is not the concern of my research (my research only takes tweets excluding the videos and links). This illustrates that government organisations make their message appealing for the targeted audiences by incorporating videos. Along with these instructive tweets, these are a few examples that educate people about the different aspects of the coronavirus.

In another tweet, government officials on the Ministry of Education page say that

Awareness is the key, brothers, and sisters, for your health, for the health of your community, keep yourself informed and inform others about coronavirus updates. Stay safe everyone, (03/04/2020, MoE 80).

Not only are the above tweets gentle reminders to the public to stay committed but also the word "awareness" is foregrounded. The tweet started with "awareness is the key" and the rest of the tweet is an elaboration of the idea. This elaboration on awareness could be read as a government emphasis on educating the public. It is noteworthy that, along with providing education on social media, government officials also educated people outside the social media space. For example, almost every 6th tweet is an announcement of a social awareness campaign held at different places in Saudi Arabia on the Ministry of Health page

*The Ministry of Health launches an awareness campaign regarding the pandemic in the remote area of Saudi Arabia, (*16/06/20, MoH 59).

This tweet shows that an offline   campaign regarding the coronavirus pandemic was also held along with a virtual campaign, which demonstrates the strategic combination of offline and online efforts for public health awareness. This dual approach of the Saudi Ministries shows that government organisations are aware that digital campaigns may not be helpful in remote areas where internet technology is inaccessible. The use of X is noteworthy in this context. While studies illustrate that social media plays a crucial role in disseminating health information (Matteo, et.al, 2020), research also indicates that digital campaigns work best when accompanied with offline interventions (Farao, 2020). The language in the above tweets is not only informative but also policy-oriented where government officials are reiterating their policy that they are launching the awareness campaign. I found such tweets significant because they show the government's efforts to ensure that information is reached at all levels. According to the Global Median Insight, although X is the most famous social media platform used in Saudi Arabia, there are still people who do not use the X platform (https://www.globalmediainsight.com/blog/saudi-arabia-social-media-statistics/?). Social campaign regarding coronavirus outside of the networking world ensures that crisis information reached as many population groups as possible This shows the government's effort to integrate the virtual campaign with the real-space campaign. WHO (2021) acknowledges the digitisation of the healthcare system in the wake of the Coronavirus pandemic. Yet at the same time, they also recognize that every country needs an integrated approach according to their resources. This is evident in the above post. For instance, in many developing countries like the Kingdom of Saudi Arabia, the government is involved in digitizing the healthcare system, yet the far-flung areas of those countries do not have internet connectivity (Vision 2030, n.d.). For such areas, the government has to arrange offline healthcare awareness campaigns.

Along with providing education and awareness, government authorities consistently communicated updates on the measures taken to keep the people aware of their plans and ongoing efforts. Such tweets are known as resource provisions in which government bodies tweet about relief measure, their plans, information, etc (Liu et al., 2018). One such example is the way government authorities counter the coronavirus rumours. Countering the misinformation on X can be categorized as awareness campaign and hence can be placed under awareness and educational tweets. For example, the Ministry of Health and the

Ministry of Education both frequently tweeted regarding rumours as evident in this tweet from the Ministry of Education

> *we reaffirm the importance of taking information from its official sources and do not believe in rumours. All information regarding the new coronavirus variant is announced through official sources through the Saudi News agency and daily press conferences. (23*/07/20, MoE 51).

In another tweet, the Ministry of Health official confirms that

> *the Ministry of Health is not forwarding any messages on the WhatsApp group. All information on the new coronavirus was issued by the account of the official ministry the Saudi news agency and the daily press conference only, (*21/06/20, MoH 76).

The Ministry of Health also confirms many times on their X handler that

> *we are updating our X page about all policies instantly. We are not forwarding any messages on the WhatsApp group*, (30/06/20, MoH 80).

The language of the above tweets is directive and avoids excessive exaggeration. In very simple and plain language, the government officials not only counter the rumours associated with Covid-19 but also inform people that they can only find authentic information here on the government's X handle. In so doing, the government officials are running a virtual awareness campaign against misinformation. It is worth mentioning here that the outbreak of the infodemic started at the beginning of the pandemic. This is perhaps the reason that many governments in the world include the fight against misinformation as a priority in Covid-19 measures: "1. providing guidance to social media companies on taking down contentious pandemic content, 2. Establishing special units to combat disinformation, 3. Criminalizing malicious coronavirus falsehood, including in relation to public health measures" (Radu, 2020, n.p). Considering this policy of many governments, we see that the Kingdom of Saudi Arabia also started combatting the disinformation regarding the Covid-19 in their X posts.

I would particularly mention that a high percentage of educational tweets are posted by the Ministry of Education. Apart from providing education and countering the rumours, the Ministry of Education also used X space as a substitute for schools in remote areas. For example, the Ministry of Education started posting recorded lectures and tutorials on its X

page. The recorded lectures and tutorials used to broadcast on TV channels are referenced in this tweet

> *The tutorial of the twelfth grade will be broadcast at 6 o'clock via Al-Ain channels. #remoteaching, #remotelearning, (*04/06/2020, MoE 10).

The language of this tweet is information-oriented and target-oriented where in a direct language the government is informing the target audience. The Ministry of Education even set up e-learning that would arrange Webinars on different topics for different students. The recorded webinar used to be available on X for students to access at any time (Al-Mayman, 2020). The above tweet also shows that government officials used X as an online learning hub. The report "Teaching and Learning with X" prepared by the United Nations Educational, Scientific, and Cultural Organisation (2018) argues that educators use the X space as the digital classroom. The report claims that X space could be used to "prepare students to be informed, creative, engaged, empowered, as well as how to express themselves" (p. 5).

Apart from promoting awareness and educating pupils, platform X also emerges as a space for educators' professional development where educators from around the world participate in professional activities. In his study, Gee (2020) argues that a word space should be used for a platform like X where everyone could contribute without any discrimination instead of calling it a community. The word space is an inclusive term emphasizing open participation and exchange of ideas irrespective of shared identity and values whereas, community suggests a group of people with shared interests and values. During a time of crisis, platform X emerges as a space in which informal learning occurs. This space is used by educators for a range of educational experiences and expertise where they learn from each other's experiences. In line with the same idea, the report Teaching and Learning with X (2018) also argues that "X is a great tool to get ideas from other educators, to stay connected to education, and edtech conferences you cannot attend in person" (p. 5). Given this context, X is called an "ideal tool to aid professional development and continuous learning" ("Teaching and Learning with X", p. 5). Alongside this, the Ministry of Education also arranged many professional training webinars that they ran occasionally on X. The purpose of these webinars was to train their teachers for remote teaching as evidenced in this post

> *Institute of Professional Development in the Ministry of Education launches a remote teaching training platform and business partnership with universities to sustain*

development process for teachers. #remoteaching, #remotelearning, (05/04/2020,
MoE 37).

The communication strategy extended beyond mere dissemination and ventured into educational realms, showcasing a commitment to continuous learning and professional development even amidst crisis scenarios. Consider the tweets:

The Ministry of Health launches awareness campaign aimed at social spacing and leaving a distance. (16/06/2020, MoH 59).

These messages underscore a dual commitment to public health and the continuity of education, thereby reflecting a strategic balance in managing diverse societal needs amidst the pandemic. It embodies an approach that is not only reactive to the immediate health crisis but also proactively ensures the sustenance of educational processes, thereby reflecting a foresight in managing collateral impacts of the pandemic.

It is worth mentioning here that such tweets could be categorized as updates. However, considering the content and the hashtag of such tweets, they make their place under awareness and educational tweets. The X platform also allowed teachers to make their learning public which could benefit others. For example, it gave access to those parents, who supported their children's learning from home due to Covid-19 and might have looked to the information and advice posted by educators. By hosting a flexible environment, the X platform also helped educators provide real-time support to each other. It is argued that even during times of disruption and uncertainty caused by Covid-19, platform X offers value and order to the lives of students and teachers.

Moreover, the language of the above tweets is also noteworthy. The direct and instructive language of the tweets sounds like digital schools on X space where children were taught different lessons. Unlike traditional teaching, this tweet shows that teachers and educators can now make their teaching and learning practices public and available to all that do not only benefit their students but also those parents who were struggling with their children's learning from home during the pandemic (Carpenter & Shelton, 2021). Another significant part of such tweet posts is they are always followed by the hashtags #remoteteaching and #remotelearning. This hashtag helps these X posts to stand out among all and it shows that this tweet is particularly related to any teaching or learning activities as illustrated in the subsequent pages. It is also noteworthy that these tweets were the most retweeted posts with additional comments or captions, something I describe in the next section in detail. The caption with these retweeted posts clearly shows that it is mostly

retweeted by students. For instance, the above tweet "The tutorial of twelfth grade *will be broadcast at 6 o'clock via Al-Ain channels. #remoteaching, #remotelearning (04/06/2020, MoE 10)*" were retweeted fifteen hundred and sixty-seven times with captions like "The science lesson" or "Our science lesson" etc.

It is worth mentioning here that beyond general public awareness, a significant portion of this discourse also delivers medical guidance, ensuring that the public remains informed and aware of the public health protocols, safety measures, and government efforts to combat the pandemic. therefore, medical is identified as one of the sub-themes of Education and Awareness Tweets.

Sub-theme 1: Medical

As mentioned previously, this theme refers to critical health information. A notable increase in the discourse around medical issues is seen in phase 2 and it keeps on growing in every phase. The reason is that both government institutions keep their public updated throughout revolving around the issue of medical. For example, one can see many posts in which the Ministry of Health is giving advice to people with different health issues on how to deal with Covid-19

> *Tips on Heart Health, with Dr. Abdul Rahman Al Qahtani via live broadcast tomorrow Sunday, 19 Apr 2020 at 1 pm, (*18/04/2020, MoH 49).

Like this, another tweet provides directions to diabetic patients as stated

> *Tips for diabetics in # Ramadan, with Dr. Nagi Al-Juhani via live broadcast on Wednesday, 22 Apr 2020 at 1 pm, (*29/04/2020, MoH 57).

The language of the above tweets shows the concern of the government officials for every aspect of their society. They are significant because government officials are specifically alerted of diseased patients in their country and thus devise TV programs for them. In a clear and direct manner, the government officials update the timings of the program for their target audience. The government seems to be mindful of every aspect related to medicine during the pandemic because there are many tweets in which the Ministry of Health provides advice to pregnant ladies on how to deal with COVID-19

> *Pregnant and worried about coronavirus? Stay Safe with These Tips. # Covid19*, (24/06/2020, MoH 81).

The salience of retweet activity associated with tweets addressing medical concerns. is deserving of attention. Although retweets were not the primary focus of this analysis, their prevalence cannot be overlooked, particularly in highlighting the reach and resonance of such messages. Specifically, the content of tweets from the Ministry of Health that centre around guidance - as evidenced by their tailored advice like "tips for diabetics" or "tips for pregnant ladies" - suggests a strategic intent to engage with distinct segments of the population. By employing language targeting specific groups, the tweets likely elicited a heightened level of interaction and dissemination. The higher frequency of retweets, therefore, may be indicative of the tweets' pertinence to the targeted audience segments and the possible success of the ministry's deliberate communicative strategy. This underscores the significance of content specificity in enhancing audience engagement, especially within health communication contexts.

Theme 2: News and Updates

As the name indicates, the theme News and updates contains information about the disease and its transmission and the related recent developments. These tweets are descriptive in nature and mostly use active voice. A total of 56 (28%) of tweets out of 200 tweets were identified as news and updates tweets with (42 tweets) coming from the Ministry of Health and (14 tweets) posted by the Ministry of Education. These tweets primarily inform the public about the disease, its transmission, and its symptoms. In so doing, the government authorities either foreground the consequences of not following certain guidelines ("the cost of non-compliance with recommended action") or the advantages to adhering them ("the benefit of compliance") (Dorison et al., 2022, p. 577). For instance, tweets highlighting the rising infections due to not following health measures refer to the risk of non-compliance, whilst posts demonstrating the success of preventive measures reinforce the benefits of compliance, as I illustrate in the following pages. One can see such posts recurrently posted throughout the day, especially at the beginning of the covid-19. These tweets communicate the risk associated with the pandemic. they either frame messages around health loss, where the emphasis is given on suffering and sickness that will be incurred if a recommended action is not taken – something I discuss under situational tweets, or around health gain information, where the emphasis is given to preventive measures and protecting or retaining good health – something that I discuss under precautionary measure tweets.

Olmastroni et al. (2021) argue that there is no one-size-fits-all message that could combat the pandemic and the associated risk and loss. From the macro-level (countries) to micro-level (household), personal characteristics to a variety of ethnicities, everyone responds differently to health-gain and health-loss messages. This insight is particularly

relevant to the current research, as it foregrounds the necessity of tailoring health communication differently according to the diverse audience. The study of Lunn et al. (2020) illustrates that health-loss messages emphasise that a particular behaviour of a person may result in affecting the vulnerable group, thus indirectly promoting social distancing, whereas health-gain messages promote social consciousness in a direct manner and promoting self-care behaviour. Considering this definition, I examine the selected tweets through two key themes: situational messages and Precautionary measure messages. These tweets could be placed under News and update tweets that promote news, and information regarding risk perception either using the health-gain or health-loss frame. For instance, Situational Tweets frame messages using a health-loss frame (the risk of non-compliance as described above), and Precautionary measure Tweets frame messages by using a health-gain frame (the benefits of compliance. In the following section, precautionary measure Tweets "emphasise the benefits or the positive outcomes that are accrued through adopting the behaviour" and situational Tweets "attempt to persuade by pointing at the negative consequences or costs incurred by not adopting the recommended behaviour" (Gantiva et al., 2021, p. 2). Both kinds of messages are effective in motivating certain kinds of behaviours in human beings depending on age, personality, time, space, etc. This is probably the reason that government officials frame their messages in both ways during the pandemic.

Precautionary Measures Messaging

Precautionary measure tweets are framed using health gain formula, and they particularly highlight preventive measures and precautionary strategies that one can follow to minimize the spread of infection and protect oneself, thus minimise risk. It is noticed that tweets with information regarding health gain are higher than tweets with health loss framing. These Tweets are imperative in nature in which government officials are seen to request the public. Therefore, tweets that come under this category are seen as emphasizing the benefits of adopting or engaging in certain behaviours to combat Covid-19. For example, I can see many X posts regarding 'wear a mask, wash your hand, and social distancing'. In the same way, a tweet on the Ministry of Health's X page

> *My dear brothers and sisters, be sure about the method of prevention. Take care of your health and those you love. Wash your hands regularly, wear the mask, and keep your distance.,* (20/04/20, MOH 8)

In another tweet, government officials from the Ministry of Health posted that

> *We will see the good days with good health if you follow preventive measures. Allah will help us. Just follow the rules and stay away from gatherings*, (12/05/2020, MOH 23)

One can find such tweets posted recurrently that show government authorities' concern for their own people. The language of these tweets is noteworthy where government officials construct the grammar of solidarity with the public by calling them "my dear brothers and sisters" and at the same time advising them by talking to them with confidence. Moreover, government officials are also using religious connotations. For instance, whilst saying that we should keep our distance, it is a good reminder to people that if they help themselves *Allah will help them as well* as the above tweets claim. Moreover, the usage of positive and hopeful language as we will see good days reinforces health gain framing. Not only such messages do encourage compliance with preventive measures but also instil a sense of optimism regarding the future. Such tweets inspire collective actions assuring the public that this is a temporary phase and that good days are yet to come.

I argue that precautionary tweets focus on actions either at the individual level or collectively. Along with the Ministry of Health, the Ministry of Education also plays an important role in educating the public about precautionary measure tweets. Throughout the time of the pandemic, the Ministry of Education stresses the importance of following precautionary measures for the safety of everyone. It is also noticed that even during the resolution stage, the Ministry of Education emphasised following precautionary measures. For example, a tweet from the Ministry of Education says that

> *Although we are back, we are committed to following health protocols against the coronavirus*, keep 2 meters distance and wear the masks. (05/06/2020, MoE 14).

Such reminders are posted occasionally on the Ministry of Education's X handle, and this shows that people in the Ministry of Education play the role of educating the public during the pandemic. In another tweet

> *based on the guidance of the Minister of Health, it is our national duty to follow the preventive measures against Coronavirus. Download the application and book your appointment.,* (23/03/2020, MoH 25).

The language of this tweet is highly significant. Taking preventive measures is considered a civic duty for everyone. Calling it a national duty, the Ministry of Education appeals to

people's sense of responsibility, encouraging voluntary compliance through moral persuasion rather than legal enforcement. Using the health-gain frame, the MoH appeals to the civic sense of people, fostering a collective responsibility of the community. This kind of language motivates people to act according to public health recommendations. The message framing is quite important during the pandemic because it is not only a matter of informing the audience but also convincing the audience to act accordingly is what makes messages powerful. In this regard, persuasion plays a key role in shaping people's behaviour where compliance with health measures can significantly limit the spread of disease. Cialdini (2017) argues that persuasive messages persuade individuals to act in ways that benefit the public health of people. In the context of the pandemic, such messages also indicate positive outcomes as described above that "good days will come" appeals to people's desire for a safer environment. Moreover, it evokes a sense of moral obligation and collective responsibility. This is perhaps the reason that government officials considered taking preventive measures as a national duty for everyone. The way pandemic does not demarcate between the elite and the poor, the government officials and the public, the Saudi government also eliminates the boundary line between the government stakeholders and the public by calling it a national duty, and hence, everyone is equally responsible to play their role in preventing the spread of the virus. Emphasizing not just the risk but also the benefit of compliance, the government authorities use the power of persuasion to mobilize people towards action, demonstrative the impact of effective crisis communication (Gallagher & Updegraff, 2012). It is interesting to note that in comparison to situational tweets, the Ministry of Education mainly posted precautionary measure tweets for instance,

> *#We return to warn for your health, follow precautions Through: 1. wear the mask 2. Wash or sterilize hands. 3. Do not shake hands. 4. Leave a distance between you and others. 5. Reduce gatherings. Our commitment contributes to overcome this struggle by God's will*, (3/11/2020, MoE 98).

This tweet posted during the resolution stage demonstrates a multifaceted approach of public health crisis communication. The tweet opens with a warning, emphasizing not only the urgency of adhering to preventive measures but also reminding people that they still need to be cautious even though the pandemic subsided. The warning in this tweet is a rhetorical tool that reminds people that the thread of the pandemic is still present. According to Chandran and Menon (2004), using threats in health communication draws public attention to the serious risk, and this tweet strategically uses this technique to draw people's attention to the ever-present threat. Furthermore, the list of precautionary measures serves

not only as a reminder but also reinforces the already established health guidelines. Although by this time, people are aware of these guidelines, repeating this tweet demonstrates that adhering to precautionary measures is a key to maintaining compliance. Lastly, the tweet closes with the message "*Our commitment contributes to overcome this struggle by God's will*" which not only appeals to faith but also offers reassurance. This line serves two purposes: first, it frames the struggle against the pandemic as something divine and secondly it also fosters a sense of shared responsibility. I believe that in this single tweet, MoE combines warning, religious appeals, reassurance, and reminders with the aim to reinforce compliance and to keep the public focused on their health responsibilities.

There are also posts that promote social distancing like

Avoid Crowds and staying at least 2 meters from others. (30/06/2020, MoE 47).

While the message in this tweet overlaps with the previous posts, it highlights the persistence of health messages, even though the public is now familiar with the guidelines. The specificity of 2 meters can be read as an effort to reinforce precision and clarity in the message. Such repeated reminders of social distancing serve a long-term goal to normalize and institutionalize behaviour. Therefore, I read this tweet as reinforcing the clarity and visibility of preventive measures, hence serving long-term goals. The persistent reminders by government authorities, even after the situation of the pandemic has somewhat controlled, is a significant aspect of health communication. Not only does it maintain vigilance but also reinforces protective behaviours for the long term. In a health crisis, for example, covid-19, the initial peak of attention normally declines once the immediate threats subsided (Witte, and Allen, 2000). Therefore, it is important to persistently remind the public regarding preventive measures as evident in the case of the COVID-19 pandemic.

This tweet also highlights the underlying tension between cultural norms and public health measures. Saudi Arabia is a collectivist society where social gatherings are a part of daily life (Hoftede et al., 2010). Saudi's cultural emphasis on social proximity like shaking hands and sharing meals, stands in sharp contrast to the pandemic's social distancing. Despite these cultural challenges, it is seen that government authorities emphasized on social distancing through persistent reminders. This is perhaps the reason that research suggests people living in collectivist cultural societies struggle with distancing measures in comparison to the individualist societies (Card, 2022).

It is worth mentioning that many of the precautionary measure tweets are posted in the beginning two stages (prodromal and outbreak stages). Saying this, I do not mean that government officials stopped posting such tweets after the first two stages, rather the frequency of posting these tweets is seen as considerably low, especially in the last phase (resolution phase). Moreover, the consistency of these posts also varied with the passage of time. For instance, the consistency of these posts is seen as a bit higher during special occasions (for example, during the Eid festival time and pilgrimage season). Eid is a time of gathering and it is understandable that government officials send reminders to people during this time. For instance, the Ministry of Health posted a day before Eid-ul-Fitr:

Eid Mubarak! *We should pray and celebrate Eid-ul-Fitr this time in our homes, and avoid gathering in congregations at the mosque*, (22 / 05/ 2020, MoH 24).

In line with the same thought, the Ministry of Education also greeted the entire nation with a reminder that

the best way to reduce risk is to avoid social contact. Eid Mubarak! (23 /05/ 2020, MoE 28).

It is also worth mentioning that even on Eid day, government officials of both Ministries keep updating the information related to the pandemic on their pages throughout the day. Both these greeting tweets are retweeted considerably higher than other average tweets in a single day. For example, the greeting tweets (ID 24) of MoH page is retweeted 6071 times and MoE page greeting tweet (ID 28) is retweeted 866 times which is considerably higher than average retweets of other posts. The comment section also shows a positive attitude of people towards such posts because it is seen that people respond positively to this tweet. This heightened public engagement suggests that people apparently respond well to the pandemic related posts integrating into emotionally and culturally specific events like Eid. Unlike the normal precautionary posts, the same precautionary posts are tweeted with a celebratory tone, thus making them more shareable and relatable for the audience. In line with the positive posts, the comment sections of such posts are also seen as overwhelmingly positive, reinforcing a sense of solidarity between citizens and government officials. This aligns with the findings of Tufekci (2014) who is of the view that culturally and emotionally relevant Twitter posts are favourably received and acted upon. Additionally, the higher engagement with such posts also illustrates that people are willing to interact with posts when they are tied with religious or national significance rather than being presented in isolation.

Situational Messaging

As the name indicates, situational tweets increase the real-time awareness and essential information about the current state of the pandemic. I call them situational because they inform the situation regarding Covid-19. These tweets provide information regarding the risks of not following the protocols issued by health organisations. In comparison to precautionary measure tweets, situational tweets use health-loss framing that highlights personal losses or losses of others by not following the government guidelines. Therefore, such tweets are mostly stated in an active voice with facts and figures. For instance, with information regarding the number of new cases, recovery rate, the need to stay at home, the spread of the virus in particular areas, etc. The Ministry of Health posted situational tweets throughout the pandemic in which the government kept the public updated about the number of cases and recovery rate. It is worth mentioning here that situational tweets were posted every day The frequency of such posts was seen higher in the beginning phase and outbreak phase in comparison to the last phase. For instance, one can see situational tweets posted many times (sometimes thrice time or even more) in the beginning with a gradual decrease in the later phases. Moreover, the frequency of situational tweets also increased during special occasions like Eid and pilgrimage time. However, with time, a gradual decline was seen especially during the resolution phase, and one could hardly see any situational tweets. I believe that this is logical considering the infection rate of Covid-19 and its mortality rate also decreased with the passage of time, hence the situational tweets postage decreased. For example,

> *The total number of cases reached 2385 cases with 100 new coronavirus cases recording 5 mortality cases, and 68 recovered cases to become total limit (488). We urge you to stick to the guidelines to control the spread of the deadly virus,* 25/05/2020, MoH 16.

Another tweet was posted by the Ministry of Health.

> *the total number of COVID-19 cases has reached 2523, 4 deaths and 63 recovery cases have been recorded*, 09/04/2020, MoH 30.

This shows that the Ministry of Health kept the public updated on a regular basis with facts and figures. Framing a tweet using facts and figures may lead people to observe social distance because they may feel obliged not to infect any vulnerable groups. Research in risk

communication suggests that statistical information enhances personal responsibility and severity, encouraging people to adopt preventive measures and behaviours (Van Bravel, et.al, 2020). Moreover, mentioning a vulnerable community in crisis communication leads people to comply with health guidelines considering it a moral obligation (Betsch, et.al, 2013). Not only do facts and figures in situational messages lead people to follow the measures but also authenticate the government's message, I believe. Providing statistics in posts reinforces trust in the presented information as Van Der Meer and Jin (2020) suggest. They are of the view that public compliance with health measures increases with data-driven messages as they look more reliable. We can see such statistical updates regarding the coronavirus cases throughout the pandemic posted by the Ministry of Health. In contrast, the Ministry of Education did not use a health-loss framework, thus their statistical facts and figures differ from the tweets of the Ministry of Health. Instead, the Ministry of Education's situational tweets provided information regarding the contribution of educational institutions in combating the pandemic. For instance, one can see occasional posts that educational institutions including universities, schools, and colleges are turning into quarantine centres or health care centres as evident in the following tweet

> *The Ministry of Education decides to turn the student's house 20 rooms into 100 beds hospital to serve the homeland, citizens, and residents, as part of efforts to reduce the spread of the corona virus. #Virus_cosrona, (*27/03/2020, MoE 45).

Similarly, in the other tweets of the Ministry of Education says

> *Teaching activities are suspended. Many educational institutions are converted into health centre, which includes 7 wings with 69 beds. The administrative services are provided to fight the coronavirus, (*26/03/2020, MoE 39).

This difference in situational tweets is logical considering the nature of the Ministry of Health. The Ministry of Health is responsible for providing information regarding the number of deaths, recovery, etc., which is not the job of the Ministry of Education. In comparison to the Ministry of Health which posted situational tweets frequently, the Ministry of Education only occasionally posted situational tweets (once a week). Along with statistical data, the Ministry of Health's X handler also provides information regarding the spread of viruses in any particular area. For example, there are many tweets in which the Ministry of Health kept the public informed about the high-risk area as is evident in this tweet post:

> *Restaurants and shopping malls are high at risk. Avoid gathering at shopping malls and restaurants and use delivery options instead, (*10/07/2020, MoH 29).

When analysed closely, situational tweets are highly policy oriented. Champagne-Langabeer et al. (2021) define policy-oriented tweets as those tweets discussing "policy, governmental entity, or institutional course of action" (p. 634). For instance, in the above tweets, government, and official stakeholders make it clear that business will be running as usual. Instead of shutting down the business that might cause a loss to the country's economy, the Saudi government wisely handled the pandemic crisis via crisis communication using X space. In comparison to other tweets, a wide variety is seen in situational tweets. Owing to its nature, one can see a variety of situations discussed with reference to Covid-19. For instance, during the time of Eid (a Muslim festival) government officials from the Ministry of Education posted

> *Please, do not want to be the joy of Eid is a source at risk. Stay Safe and stay home*, (25/07/2020, MoE 88).

After Eid, government officials from the Ministry of Health remind the public that

> *After Eid al-Fitr, we recorded a significant increase in Corona's injuries. In this feast, do not visit your loved ones, and for your safety, please commit, (*03/06/2020, MoH 75).

It is worth mentioning here that above tweets could not strictly be categorized as situational tweet. Such tweets are a mix of both precautionary and situational tweets, hence broadly could be categorized as news and updates tweets. Likewise, on an occasion of pilgrimage, government officials keep posted situational tweets frequently. For instance, one of the tweets on the Ministry of Health page says:

> *The Custodian of the Two Holy Mosques increased 60% of the salaries of staff as a reward for working day and night to protect the public during coronavirus, (*20/07/2022, MoH 7).

Many situational tweets are posted with the word "please". Behavioural change theorists claim that digital technology like social media platforms can be utilised to support or foster behavioural changes known as digital behavioural interventions (Ibrahim et al., 2022). A persuasive message is one of the techniques that could be used for behaviour change. A number of persuasive strategies were used by government officials in their tweet posts to

"persuade the public to modify their behaviour to comply with policies on protective measures" (Ibrahim et al., 2022, p. 1). One such strategy is the use of imperative sentences because people are more receptive to such messages as they are clear and provide actionable guidance, hence reducing uncertainty (Dillard and Shen, 2005). Therefore, we could see that most of the posted tweets are imperative in nature in which government officials sometimes request the public and sometimes warn the public.

There are many other tweets that talk about the government's plans or other words, inform about the ground situation arranged and organized by the government as evident in this tweet from the Ministry of Health

> *The number of laboratory tests for the new coronavirus in the Saudi Kingdom examined 115, 585 cases using molecular polymerisation technology until 8th April (at the rate of 3340 examinations per million people), (*13/05/2020, MoH 71).

In a situation like a pandemic crisis, such tweets are quite significant. This shows that during the pandemic, the Saudi government was not only concerned about people's safety, but they were also trying to generate trust between the government and the public by keeping them informed about their strategies, and plans. Not only are the government officials seen as posting updates, but they are also seen as taking new decisions, revising, and revisiting their old decisions according to the changing circumstances. The facts and figures in the above tweets illustrate that the government is aware of the situation and accordingly, they are devising its plans. For example,

> *The Ministry of Health is arranging 100 new fully equipped beds on an emergency basis in many hospitals,* (11/04/20, MoH 78).

In such a fast-changing scenario, X's platform proved as the fastest medium to keep the public informed accordingly. X's ability to share real-time updates has long been recognized in crisis communication and political events. For instance, during natural disasters, like earthquakes and floods, X is used to deliver urgent alerts and instructions regarding safety (Houston, et.al, 2015). Likewise, during events like elections and political protests, government officials and journalists also rely on X for the fast spreading of information (Hermida, 2010). Given this context, it is argued that X is a crucial tool for disseminating timely updates, something particularly required in health emergencies like the Covid-19 pandemic (Matteo, et.al, 2020). The above tweets make evident that the government is not merely providing information but is actively accommodating its public. The words "emergency basis" demonstrate the government's hyper-performativity, or fast

service. This also emphasizes the speedy responsiveness of the government in addressing public concerns. This also suggests that performativity is providing timely information and projecting control and competence in times of crisis (Srivastava, 2022). There is no doubt that such rapid responses on the government's behalf contribute to the state's image as highly efficient, hence reinforcing public trust.

Another significant feature of situational tweets is that they are temporally and spatially contextual. This affirms what I said earlier that they keep on changing according to the situation i.e., temporal, and spatial context. For instance, in some tweets, the Ministry of Health is seen as announcing the special timings of health clinics during the month of Ramadan

> *Following are the hours of preliminary health care centres during the month of Ramadan. Please check the timings in your area, (0*2/04/2020, MoH 49).

On the other hand, the Ministry of Education posted updates regarding different tutorials. While I placed this tweet under situational messaging due to its real-time update on the schedule of the tutorial, it can also be placed under awareness and educational tweets. On the one hand, its situational relevance justifies its placement under situational themes, its instructional content and the information it conveys can position it under awareness and educational themes. It is worth mentioning here that themes are not mutually exclusive, and this is a reason a single post can fit under multiple themes depending on its informational content and impact (Braun and Clark, 2006). However, considering the content and hashtags in such tweets, they can be categorised as awareness and educational tweets as described below (under the section of awareness and education tweets).

> *The Tutorial for the Eighth grade will be broadcasted live at 07:00 pm. #remoteaching, #remotelearning, (*04/05/2020, MoE 64).

these temporal and spatial contexts are important and act as reminders for people during the pandemic time. Ramadan is the holy month for Muslims and Muslims normally spend most of their time in their local mosques during this month. Posting such tweets before Ramadan by government officials could be seen as their attempt to remind people that we are still living in the pandemic and people need to be conscious of it. The temporal aspect of the above post illustrates the sensitivity of the government's officials and the government's changing policies and strategies during the pandemic time according to the evolving situation. The reference to the spatial context in the above post reveals the local

government's steps towards the pandemic and this also shows that the whole government's machinery is working together during the pandemic of Covid-19. Additionally, the MoE also posted about their policies on their page. For instance,

> *the educational portal developed for self-evaluation and educational material for students, (*06/09/20, MoE 17).

This tweet from the Ministry of Education is not just a piece the information but it clearly shows the policy the Ministry of Education specifically establishes for the benefit of students during the pandemic. In the wake of the coronavirus, parents, whose children were studying abroad, were really worried for their children. In an interview with BrainGain Magazine, many parents confirmed that they were anxious during the time of pandemic and wanted their children to return soon (Singh, 2020). The Ministry of Education arranged special flights to bring their students back from abroad and an array of tweets are seen on the Ministry of Education page that informed the public about their policies and efforts they made to bring those students back as evident in these tweets

> *the Ministry of Education is working with relevant authorities to ensure the safe return of their students who are studying abroad, (*29/03/20, MoE 90).

On another occasion, the Ministry of Education posted that

> *a special flight was arranged for the transfer of students from abroad*, (10/04/2020, MoE 26).

When analysing the communication during this time, it is found that government officials of the Ministry of Education posted about each step they took to bring their students back. The above tweets are performative in nature, in other words, it is action-oriented, and it reveals that the government is in action. Such performative tweets also show that government officials did not only focus their communication goals on information delivery (for example, primarily giving information and providing warnings related to the pandemic) but also their tweets were more instrumental in nature and were rooted in resource mobilisation as well as Houston et al. (2015) note. By this, I mean that they were reporting in real-time by informing the audience about their step-by-step actions and sometimes they also called for assistance whilst executing their plans or actions.

Given this context, I argue that situational tweets also show crisis communicators' openness to keep the public aware of the ongoing developments in the pandemic and keep them updated according to the changing situation. Moreover, the nature of situational tweets reveals that they act as a newsagent and function as informative material where the information seekers would go to find some kind of information. This is perhaps the reason that the language of these tweets is factual in nature rather than persuasive. However, the facts and figures of situational tweets may have a persuasive effect because they may trigger fear and in turn, activate an attitude to observe social distancing (Carfora & Catellani, 2021).

Under this broader theme of news and updates, the sub-theme of international messages and countering misinformation messages emerged. These sub-themes highlight global development, international healthcare guidelines, and countering disinformation communicated during the pandemic.

Sub-theme 2: International Messages

The international messages in the whole corpora of tweets are only dominated in the first phase which drops substantially from phase 2. A possible reason is that during the first phase, the focus on the coronavirus situation in China and the cases and the number of deaths is mainly reported from China specifically from the Wuhan region. However, once coronavirus hit the kingdom during the first phase and the first case was reported, a shift in tweets was seen, which reflects the moving of the crisis into the domestic realm and the pandemic now becoming a domestic problem for the Kingdom of Saudi Arabia, not just an international one anymore. One could rarely see posts related to international in the rest of the phases during the pandemic. This transition suggests that with time, there was a cases of the Covid-1d messages because every country was more concerned about controlling the spread of the virus in their country.

Sub-theme 3: Countering Misinformation Messages

This sub-theme is related to counter misinformation, disinformation, or rumours associated with the Covid-19 pandemic. Amidst the Covid-19 crisis, misinformation and disinformation presented a grave risk to public action and public health. This is perhaps the reason that we see that tweets to counter misinformation are continuously increasing and reach their peak in the last phase. The language of these informative tweets varies from politeness to warning. In some tweets, it is quite polite as evident in this tweet

> *Please believe in the news coming from official sources and do not believe in the rumours. All information regarding the new coronavirus variant is announced through*

> *official sources through the Saudi News Agency and the daily press conference*,
> (18/04/2020, MoE 25).

whereas, in some other tweets, the language is plain as evident in this tweet:

> *The news regarding a new coronavirus record is wrong. The situation is under*
> *control, and we have an eye on it*, (06/10/2020, MoE 3).

Both tweets are elaborative in the sense that government officials do not only state that the public should believe only the news from official sources but also state that they should not believe in rumours. Saying this the government officials confirm that they are aware of the false news or rumours circulated among the public and thus emphasise the point that the public can find authentic news only from official sources. This practice actually aligns with international misinformation management where the emphasis is given to source credibility and clear messaging (Lewandowsky, et.al, 2012). The research of Fazio and his colleagues (2015) demonstrates that repeated fake news reinforces its believability. Therefore, the government authorities must counter it persistently with clear messages, as seen in the Saudi's government direct and frequent messages.

Such tweets put the government in a role of authority and represent the government as the only credible source of information. According to WHO, the government authorities must proactively communicate with the public and immediately rebuttal the misinformation to manage the infodemic (WHO, 2020). Given this context, it is argued that the Saudi government authorities' approach complies with this framework as not only were they reactive to misinformation but also proactive in building the public's confidence. By keeping the public informed about every emerging aspect of the pandemic shows that the government knows its responsibility and owns it properly. As Covid-19 evolved, the misinformation regarding the pandemic was increasing. The government needed to combat the misinformation. This is probably the reason that both governmental institutions posted informative tweets almost daily. The presence of misinformation is well recorded in the literature on health crises, highlighting that the uncertain environment proved to be the fertile ground for misinformation (Chou et.al, 2020). In this regard, the daily updates from the Saudi government can be seen as their effort to minimize the fear and uncertainty, reducing the space for infodemic.

After scanning the X pages of both Ministries, it seems that the government was fighting on two fronts during the coronavirus pandemic. The government was not only fighting the

pandemic but also with loads of misinformation and disinformation. Therefore, along with the tweets regarding the COVID-19 virus, the government is also running an awareness campaign on Twitter (and of course on other media outlets) about the risks of false and incorrect information regarding the pandemic. This approach also aligns with the international standard as government organisations of many countries around the world launched digital campaigns to combat the rumours and misinformation (Pennycook and Rand, 2021). The emphasis on the credibility of official sources by Saudi government authorities follows this logic, hence continuously guiding its people to verified sources. This kind of misinformation or disinformation was dominated at the breakout and chronic stage. During phase 3, one can see that the government posted informative tweets frequently (every fourth tweet was informative) on a daily basis. In line with the same idea, the research of Lazer et al. (2018) suggests that consistent information can mitigate misinformation. The Saudi's government effort to post such tweets even in the later stages of the pandemic reflects their understanding of the long-term management of the infodemic.

Knowing that there are people who do not use social media (social media is not popular among elderly people in Saudi Arabia and they are more interested in TV news or print media) the government of Saudi Arabia encounters misinformation or disinformation on TV, print media, and social media platforms. I believe that multichannel communication is quite essential during crises, as studies illustrate that relying solely on digital information can miss the key demographics (Gallotti, et.al, 2020).

Theme 3: Call to action

Tweets under this theme provoke the public to take particular actions, follow important guidelines, and participate in initiatives. These tweets aim to promote behavioural engagement and motivate the public to be involved in the specific event. While the News and Updates tweets spread information about the disease and its transmission, call to action tweets highlighted the risk factors associated with Covid-19. Ranging from calling for safety measures to promote participation in the cause, the nature of call-to-action tweets varies. This is perhaps the reason that the language of these tweets is imperative, and the government officials seem to give warnings and commands. A total of 41 (26 tweets posted by the Ministry of Health and 15 tweets posted by the Ministry of Education) call to action tweets were identified out of 200.

Table 6: Call to Action Tweets Distribution

Stages of the pandemic	Number of call-to-action tweets by MoH	Number of guidelines and directives tweets by MoE
Prodromal stage	06	03
Break out stage	09	05
Chronic stage	07	05
Resolution stage	04	02
Total Tweets	26 (63%)	15 (37%)
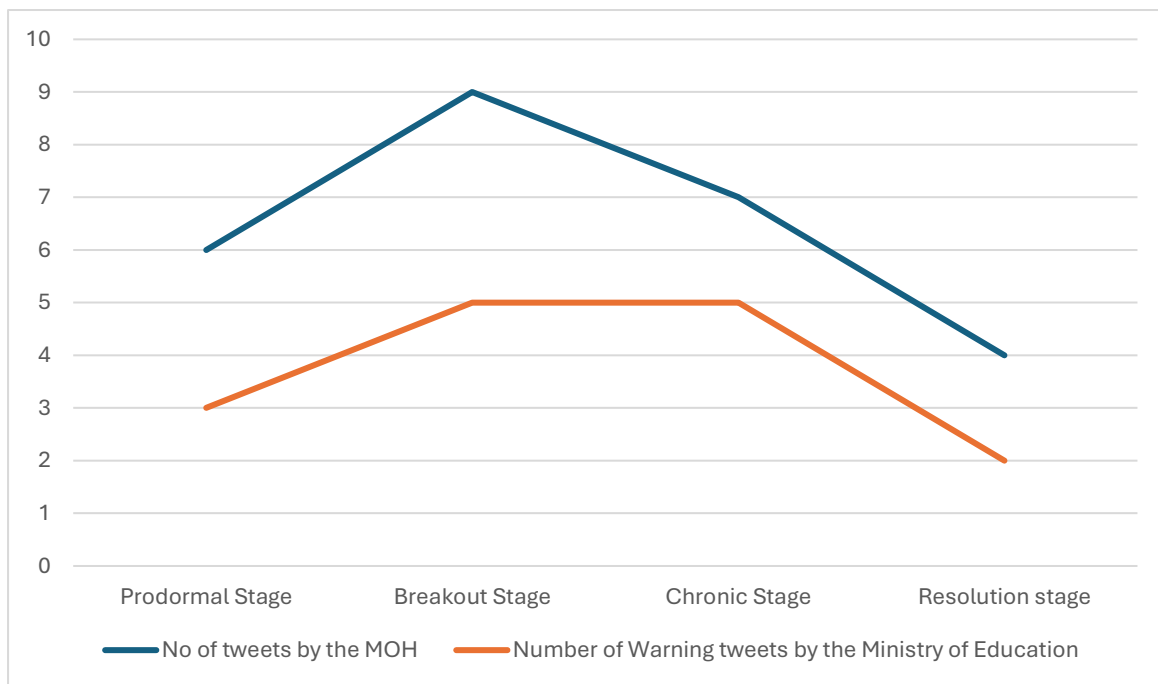
Figure 8: Call to Action Tweets' trend

The graphic illustration clearly shows that most call-to-action tweets were posted by the Ministry of Health in comparison to the Ministry of Education. Moreover, it is also clear that the frequency of posting call to action tweets was higher during the breakout and chronic stages in comparison to other stages. As we know the spike of the Covid-19 pandemic was at its peak during the breakout and chronic stages, this is perhaps the reason the government officials send call to action tweets frequently during these stages. On the contrary, I believe that it was clear in the very beginning that the pandemic was a global phenomenon, therefore, government officials should consider sending call to action tweets from the beginning to avoid the spike. The delay in response may lie in the timings of global alerts. A possible explanation is that the WHO Director general declared the pandemic as an international concern and public health Emergency on January 30[t] 2020 (Sleigh et al., 2021). The declaration by WHO marked a crucial shift in viewing the pandemic not as a regional

issue but to view it as a global emergency. This is perhaps the reason that government officials posted more active call to action tweets after the official declaration. In this regard, it is argued that the timings of call-to-action tweets align with international health advisors rather than national strategy.

In call-to-action tweets, government authorities warned people against the pandemic and the language in these tweets varies from neutral to warning tone. By this, I mean tweets that come under this category are assertive in nature. They are mainly delivering government guidelines and orders sometimes in a strict tone and other times requesting the public. Considering the nature of these tweets, these tweets could also be called order tweets. Unlike news and updates which are policy-oriented, call to action tweets are performative-oriented. By this, I mean that such tweets likely provoke people for social performance by using the sentiments of order or request. Considering this definition, I would argue that both policy-oriented and performative-oriented tweets help to shape the public behaviour in times of crisis. Policy-oriented tweets guide the public on what they should do, while performative oriented tweets urge them to engage in participatory behaviour, such as staying home, and keeping a distance, to minimize the risk. I believe together these two types of communication motivate collective social responsibility and public participation. However, the first do so by delivering the policy statements of the government and the latter either ordered or requested the public. Given this context, I argue that news and updates tweets state policy statements to provoke the public to prevent them from the pandemic, the call-to-action tweets are provoking the public to act by using different strategies. While the first aim to create awareness, emphasize the public cooperation, and set expectations, the later actively urge the public to engage in participatory actions.

When analysing the nature of guidelines and directives tweets, it is in the form of orders issued by government officials. These tweets are the executive orders such as dates and guidelines, lockdown orders, closures of businesses, schools, and other government infrastructure, traveling restrictions, and many announcements related to the coronavirus coming from government bodies. The language of these tweets is assertive, declarative, and sometimes defensive. For example, a tweet from the Ministry of Health like

> *the correct attitude when you feel the symptoms of the new coronavirus, isolate yourself and call 937, (*06/05/20, MoH 39).

This tweet is quite assertive in nature and in a very clear and direct manner, government stakeholders ask people to isolate themselves if they have symptoms. In contrast to this

post, in other tweets government officials were seen requesting people as evident in this tweet from the Ministry of Health says

> *If anyone experiences any symptoms, please head to the nearest healthcare facility to receive the required treatment free of charge, (*01/06/2020, MoH 58).

Unlike the previous tweet, this tweet sounds much softer, and it involves a request because the tweet uses the word "please". The language of the above tweets presents an interesting paradox. Here the government appeals to the collective responsibility instead of asserting their institutional authority. The government wants to influence people and instruct them. As we know in the English language, a special grammatical construction called imperative is used to instruct people as evident in this tweet which is frequently (sometimes twice and thrice a day, especially during the chronic stage) posted by both Ministries throughout the pandemic

> *stay home, Stay live, (*30/03/2020, MoH 37).

The imperative construction in this tweet represents a top-down communication style where the government asserts its authority and positions itself as the protector of the state. I believe such direct commands leave no room for doubts and create a sense of compliance and urgency. However, there is a polite way to instruct people as an alternative to strict instruction. For instance, the strength of directives can be softened with the word "please" as evident in the above post. In some tweets, several strategies are combined as is evident in this tweet from the Ministry of Education:
please can everyone stay calm. (10/03/2020, MoE 16).

I believe these differences in tone represent the government's shifting priorities during the pandemic. Assertive tweets are important to emphasize urgency and compliance to protect lives, the goal of softer tweets is to reassure and calm the public during the uncertain time. Given this context, it is argued that the linguistic choice in tweets is the government's strategy to manage the public's behaviour, regulate their emotions, and urge collective responsibilities during times of crisis.
Call to action tweets are quite pertinent as they show the government's concern for its own people. These tweets also show that the government is facilitating its own people at all levels and providing free health facilities and medical camps everywhere in the country. Along with facilitating the public, the government also made it clear that the public should also act upon their policies and plans. the government's plans would not be successfully executed if the

public did not follow their policies. This is the reason that government officials are requesting the public to share its burden by isolating themselves if they contact with the virus. This is one example of guidelines and directives tweets where the Ministry of Education combines both strategies of instruction: politeness and directness as evident in the following quote

> *Keep yourself informed and inform others about coronavirus updates. Please, stay safe everyone,* (03/07/2020, MoE 74).

Similarly, in the other tweet post, the Ministry of Education again highlights the same issue by combining politeness and strictness

> *My brother and resident, isolate yourself immediately when you have symptoms of coronavirus. For your health and for your community*, (03/06/2020, MoE 48).

Such reminders of guidelines and directives tweets are posted occasionally (once a week) by the Ministry of Education. However, there are other tweets in which government authorities from the Ministry of Health are seen as warning people instead of requesting them

> *Do not open your home for infection. Beware of dealing with people outside who could transmit the infection to you and to your family, (*20/08/20, MoH 79).

Likewise, another tweet from the Ministry of Health says

> *the spread of the virus is faster than imagined. Only you can put an end. All of us needs to be responsible citizen, (*21/07/20, MoH 69).

and another tweet from the Ministry of Education says that

> *Staying at home can stop the spread of the virus. Stay at home*, stay lives (30/06/20, MoE 96).

In all of the above tweets, government officials use both strategies. On the one hand, we can see the softened version of directives and on the other hand, forceful imperatives are also used. The reason that government officials are linguistically cautious in their tweets is because of the difference in human behaviours and psychologies (Essam & Abdo, 2021). The use of language in the government's tweets illustrates that the government officials did

not want to alienate anyone in the public by sounding forceful, hence they varied the grammar in their tweets. Moreover, the government officials are using inclusive language in the above tweets by using plural pronouns. This indicates that not only government officials, but the public are equally responsible for preventing the spread of coronavirus. The phrase "all of us" is deeply instilled in the collectivist Saudi culture where the welfare of the society is prioritized over the individual interest. This suggests that instead of framing responsibility as a civic duty, government officials are trying to foster a shared sense of accountability, highlighting that overcoming the pandemic requires the collective participation. The inclusive language in the above tweets suggests that fighting against the pandemic needs collective effort, motivating mutual care. This appeal strongly resonates with the collectivist society like Saudi Arabia. Additionally, it is argued that government officials frame the public health as a social obligation rather than civic duty.

The crisis communication on the Ministry of Health's X page also shows that they keep the public updated according to their plans and measures throughout as evident in this tweet

*the government made efforts to achieve public interest, which came with the decisive decision in order to save lives, do not cause the epidemic outbreak, (*01/09/20, MoH 83).

This tweet is quite significant. The language of this tweet is assertive and quite strict. The tweet reiterates the government policy on the one hand and reminds the public of their utmost responsibility at the same time. Instead of using personal pronouns here, the government officials draw a line between the government's responsibilities and the responsibilities of citizens. The interesting part of the above tweet is the way government officials make considerable reference to individual responsibilities. They clearly draw a line between their responsibilities and public responsibilities and claim that the government has done its effort and now the citizens also have to play their role by observing the government guidelines. After clarifying their policies and guidelines in situational and preventive measure tweets, here in guidelines and directives, the government stakeholders put an emphasis on individual responsibility, so that they can overcome the Covid-19 pandemic together.

On the contrary, the Ministry of Education posted educational policies and guidelines. For example, many tweets on the Ministry of Education's X page discuss

we (the Ministry of Education) are working with relevant authorities to show that the power is not concentrated at one point. It is distributed among different departments and all of these relevant departments are active in helping their people, (23/05/2020, MoE 37).

The language in these tweets once again signifies the inclusivity where the government shows that the struggle against the pandemic is collective. The emphasis on inclusivity is strategic as it urges compliance along with social cohesion. In a collectivist society, like Saudi Arabia, such tweets are quite pertinent as they promote mutual care and protection. Additionally, inclusive language foster empathy, unity, and national pride, hence increasing public participation for the big cause. Therefore, it is argued that along with inspiring collective actions, such a language aligns with building communal well-being, where everyone's contribution matters in the society especially at times of risk like the pandemic. These tweets illustrate that not only does the government work to combat the pandemic but also works on all the risks associated with Covid-19. This could be seen as one example of effective communication where the government officials are seen as taking their public in confidence about their policies and communicating to them directly by informing them regularly. This kind of crisis communication helps in building the trust relationship between the public and the government – one of the strategies of risk and crisis communication that is to involve the public in crisis communication. Lin et al. (2016) claim that government stakeholders and officials provide up-to-date risk information during the unfolding of a crisis to combat misleading or propaganda information. The research conducted by Wang et al. (2021) notes the insufficient and inconsistent risk communication during the outbreak of previous infectious diseases like SARS-COV-2 in comparison to the risk communication happening during the Covid-19 pandemic

Given this context, when analysing Call to Action tweets closely, one should either reinforce restrictions or communicate or update the public about the spread of the virus. In this regard, sub-themes, restriction, lockdown, stay-home messages, and spread of the virus messages, come under the Call-to-action tweets and they played an essential role in shaping public behaviour and reinforcing directives coming from the government.

Sub-Theme 4: Restrictions, Lockdown, Stay Home messages
The discourse of lockdown/stay home peaked during phase three, remaining constant until the final phase of the pandemic. The language of these tweets is quite significant. Some tweets are imperative in nature and function as instruction as stated: *Stay home, save lives,*

posted by the Ministry of Education on 30/06/2020 at 09:10 am, and in other tweets, the government official says

> *Do not open your home for infection. Beware of dealing with people outside that transmit the infection to you and your family. #Prevent_yourself from corona # Allofus,* (20/08/2020, MoH 79).

However, in many other tweets, the instructions are passed more politely as stated in this tweet

> *Please Protect yourself and others around you. You must disclose if you contract a virus. Please protect your family. # All of us,* (01/05/2020, MoH 75).

One can see a variety of tones in the above tweets. From ordering to request, government officials make it mandatory for the public to stay home and save lives and thus the nation at large. Some of these tweets are expressed with modalities 'must' to show that it is obligatory for the citizen to keep the lives of their loved ones saved.

The steady increase in tweets related to the lockdown shows that government institutions make sure to keep people following the lockdown measures. It is worth mentioning here that during these phases, there was a time when lockdown was eased, yet the government institutions kept people instructed to follow lockdown measures and try to stay home unless it was important

> *We stress the importance of dimension in gatherings. We are still in the end stage. Please keep a distance between you and the others. Please arrange a gathering in a big space. Have 1-meter distance to prevent the new Corona infection*, (23/07/2022, MoE 20).

The language of this tweet is highly significant. It contains five main clauses, and every clause is a reminder for the people. The tweet starts where the government officials repeat their points by using the word 'stress' here followed by a reminder to people that they are 'still' in the pandemic. The government officials then request people that keep their distance. Considering that people may not avoid gathering anymore, the government officials then emphasised the gathering in a big space and keeping almost 1 meter. It would not be wrong to say that in these three lines; government officials provide a step-by-step guide to people at the end stages of the pandemic. This is perhaps the reason the government reminds the

public about online shopping and online delivery of food so that people would stay home. For example, there are many tweets in which government officials advise people to use the option of online shopping as stated

> *All the shops are giving delivery options. We urge you to choose the delivery. However, if going outside is necessary, please follow the rules of prevention. #All of us*, (28/04/2020, MoH 33).

Similarly, in another tweet, the government officials of the Ministry of Health said

> *In addition to previous activities of delivery, new policies include restaurant delivery services as well. We urge you to choose for delivery instead of dining in*, (03/05/2020, MoH 41).

The government further gives directions that how can people receive their deliveries safely as shown in this tweet
> *How to Safely Receive Packages and Deliveries? # Covid19, (*20/06/2020 MoE 17)*.

The interesting aspect of the above tweets is the use of the strong verb urge which illustrates that the government earnestly wants the public to choose the online delivery option and avoid going out of home. Along with stating their policies and the way the Saudi government is facilitating people by providing them with online options, the government is also requesting that we have done our job, and we want you to follow the rules.

Sub-Theme 5: spread tweets
This theme communicates the multifaceted impact of the pandemic. The tweets related to the discourse of spread were posted throughout the first three phases. As the coronavirus subsided in the last phase, a substantial drop was seen in the frequency of spread tweets. The nature of these tweets evolves over time, initially focusing on raising awareness regarding the virus' spread and later shifting towards educating the public on preventive measures and behaviours. These tweets served an educational purpose, informing the public about the spread of the virus and urging them to comply with safety measures. For instance, one of the tweets posted by the MoH says
"Avoid gatherings. The virus spreads quickly and we must protect our loved ones",
(20/06/2020, MoH, 89)
This tweet encapsulates several key aspects of the theme of spread. Beginning with direct instruction like avoiding gathering and then reinforcing the importance of this behaviour. The

tweet emphasizes preventive measures saying to avoid gatherings followed by a reminder about community responsibility that we must protect our loved ones. This tweet aims to foster a proactive public response by emphasizing collective responsibility and actionable advice.

It is seen that the Saudi government combines fear appeal with communal messaging to ensure public compliance. Each tweet under this sub-theme emphasizes the spread of the virus in different ways. With time, the messages incorporate an action-oriented tone, thus encouraging the public to take practical steps, like wearing masks, and social distancing, to limit the spread of the virus. In this regard, it is argued that this sub-theme played a role in shaping public behaviour and mobilizing them for collective actions. Combining emotional appeal with direct instructions, the government authorities framed the spread of the virus as a shared responsibility.

Theme 4: Reassurance and Empathy

These tweets express gratitude and appreciation by the government to its people for their cooperation. One can see reassurance tweets throughout the pandemic. A total of 40 (21%) reassurance tweets were identified out of 200, out of which the Ministry of Health posted 22 tweets, and 18 tweets were posted by the Ministry of Education. Considering the nature of reassurance tweets, these tweets can be divided into types: empathy and morale-boosting tweets.

Table 7: Reassurance and Empathy Tweets' distribution

Stages of the pandemic	Number of reassurance tweets by MoH	Number of reassurance tweets by MoE
Prodromal stage	06	06
Outbreak stage	05	06
Chronic stage	05	03
Resolution stage	06	03
Total	22 (55%)	18 (44%)
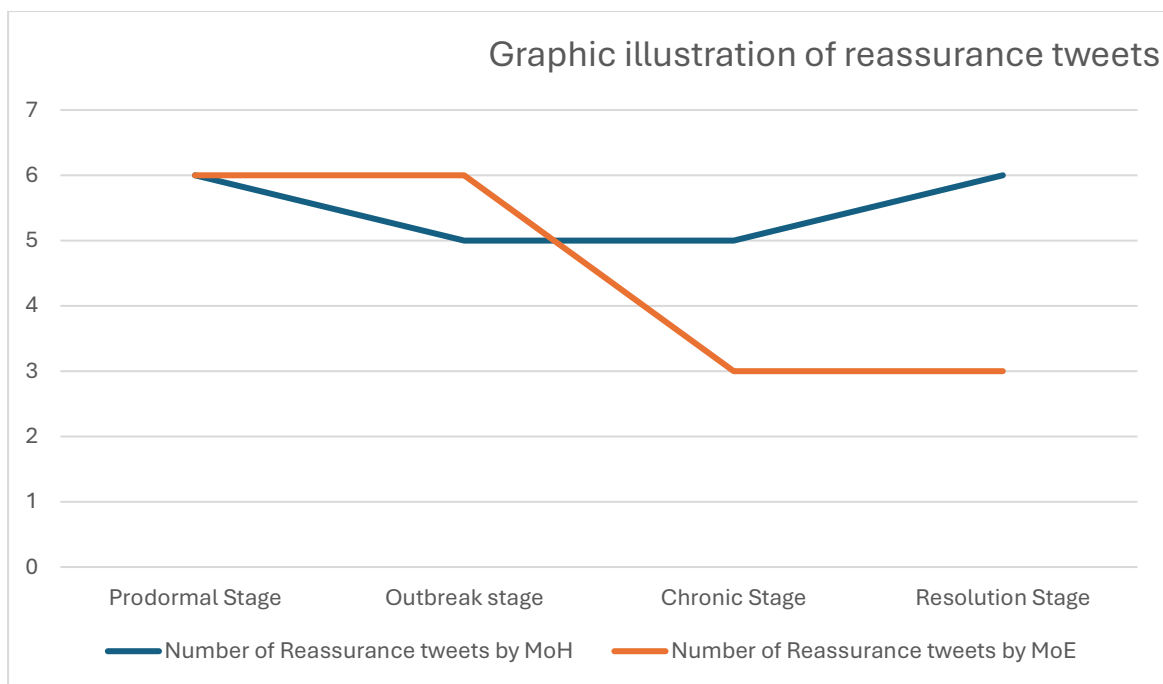
Figure 9: Reassurance and Empathy Tweets' trend

The above graphic illustration and a table show the frequency of reassurance tweets posted by both Ministries across the pandemic. The graphic representation makes it clear that the government started posting reassurance tweets from the very beginning of the pandemic along with situational or precautionary measure tweets. In comparison to other thematic tweets which declined with the passage of time (with the increased postage frequency during chronic and outbreak stages), the frequency of posting reassurance tweets by the Ministry of Health remained constant throughout the pandemic. However, in the case of the Ministry of Education, the postage of reassurance tweets declined during the last two stages. This difference in communication patterns illustrates the priorities and distinct roles of these ministries during the pandemic. The MoH maintained consistent patterns of reassurance tweets because public health crises trigger fear and anxiety, requiring sustained effort to maintain public trust. In contrast, the MoE's decline in reassurance tweets can be described as a shift in its priorities. Early in the pandemic, uncertainty around educational policies, like school closure, and remote learning demanded frequent reassurance tweets to address parental and students' anxieties. However, with time remote learning became normalized, and the MoE also redirected its communication efforts toward other policies.

When analysing further, the distribution of empathy tweets and morale-boosting tweets also became clear. The frequency of posting empathy tweets is seen higher in the beginning in comparison to morale-boosting tweets. Whereas the frequency of posting

morale-boosting tweets is seen as higher during the last stage as illustrated in the below graph.

Table 8: Empathy Tweets and Morale-Boosting Tweets' Distribution

Stages of the pandemic	Empathy tweets	Morale-boosting Tweets
Prodromal stage	04	03
Breakout stage	07	04
Chronic stage	05	06
Resolution stage	05	06
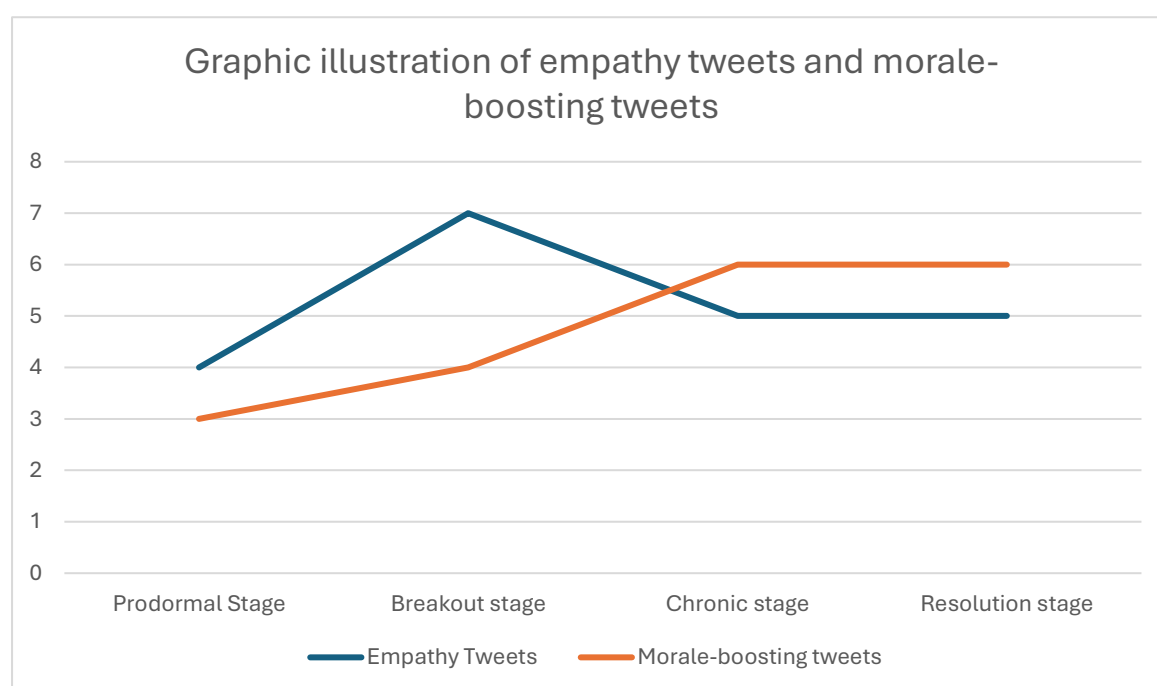
Figure 10: Empathy Tweets and Morale-Boosting Tweets' Trends

When examining the empathy and morale-boosting tweets individually for each ministry, distinct patterns emerge across the pandemic stages. Empathy tweets, predominantly issued by the Ministry of Health (MoH), peaked notably during the Breakout stage, reflecting heightened concern and uncertainty about public health. This indicates the MoH's emphasis on acknowledging public distress and maintaining trust during the most critical phase. Conversely, morale-boosting tweets, primarily disseminated by the Ministry of Education (MoE), increased noticeably during the Chronic and Resolution stages, aligning with the MoE's role in sustaining public morale as remote education became prolonged. These separate yet complementary communication patterns underscore each ministry's tailored response to the specific emotional and informational needs of their audiences throughout the evolving pandemic

Empathy tweets

These tweets acknowledge the hardship, difficulties, and pain endured by people during the pandemic. For example, one can see empathy tweets posted repeatedly that show that government authorities acknowledge that it is a hard time for its people, and they are all together during this hard time and this is evident from the repeatedly used hashtag "#AllofUs". The hashtag "#allofus" is repeatedly used by the MoH, appearing at the end of most tweets. However, it is particularly notable at the end of empathy tweets, reinforcing a sense of collective support and struggle. It is argued that government authorities here frame the pandemic as a shared responsibility and struggle using inclusive language and hashtags. More than symbolic, it serves as a psychological function, offering reassurance and comfort to the uncertain public. Such empathic tweets are quite significant during times of crisis as they help to build trust and encourage cooperative behaviour as is evident in the tweet

> *especially for our health heroes, we are all with you, we are all together and we will overcome it together #allofus,* (18/05/2020, MoH 67).

Empathy plays a central role in crisis communication as it not only inflicts less reputation damage but also empathizes with the company. Effective communication in empathy tweets goes beyond surface-level of sympathy expression, rather it conveys support and commitment to the public during challenging times. In so doing, not only does it protect the institutional credibility, but also strengthens the relationship between the public and government organisations. It determines the stakeholders' responses to the crisis (Schoofs et al., 2019). For instance, in the empathy tweets coming from both Ministries, it is clear that the Kingdom's government is mindful of the public and they portray belief that each and every one is responsible for combating it. Unlike warning tweets where the government stakeholders demarcate the line between their responsibilities and the responsibilities of citizens, in empathy tweets, government officials continuously use the hashtag #allofus. The hashtag #allofus in empathy tweets indicates that the government is trying to evoke a sense of responsibility among all and asserts that during this difficult time, all of us need to be responsible for combating the Coronavirus together. Since the pandemic is a shared experience, therefore, the government evokes a sense of collective spirit. Drawing from the cultural values of collectivism, these messages prioritize social harmony and group cohesion. Moreover, I believe that this particular hashtag also plays an emotional function, reminding people that they are not alone in their struggle during this risky time. Whilst

validating the feeling of uncertainty, it also reinforces the idea that strength lies in communal values.

In the same way, there are many tweets that acknowledge people's difficulties as evident in this tweet from the Ministry of Health

we understand that your daily activities are interrupted because of the ongoing scenario. We urge you to follow protocols and maintain the safety and integrity of your community, (20/10/20, MoH 94).

In another tweet, the Ministry of Health acknowledges that

we know you are all excited about the Eid celebration. Please do not let your celebration of Eid be a source of risk. We can prompt and rejoice and meet our hearts with the application of safe spaces and commitment to health behaviours, (29/07/2020, MoH 53).

Since the empathy tweets are to show government empathy towards people, the language of these tweets is empathetic as well. Government officials use the plural pronouns in most empathetic tweets to show solidarity with their people, hence creating the grammar of inclusivity. Another peculiarity of these tweets is that government officials always confirm people's suffering and always show their concern. This is perhaps one reason that most empathetic tweets start with reassurance and confirmation words like "we know", and "we understand". These phrases could be taken as government acknowledgment of people's efforts and showing their empathy towards their people. This kind of reassurance or confirmation words at the beginning of empathetic tweets is what makes these tweets differ from other type of tweets. I argue that such a kind of reassurance is central to crisis communication because it propagates trust and communicates to people that they are not alone in this crisis. This aligns with the idea of crisis rhetoric where a leader must reassure his or her supporter, in the context of this research the government must reassure the public (Loepp, 2008). It is worth mentioning here that the government officials use solidarity language in different ways to connect with the public. For instance, the government officials use the plural pronoun in emphatic tweets to show their sympathies with the public. However, the government authorities use the possessive determiners, such as my, in phrases like "my dear brothers and sisters" within precautionary tweets to show their

alliance, solidarity, closeness, and familiarity with the public as discussed previously.[1] The emphatic tweets show empathy with people and precautionary measure tweets highlight the preventive measures to advice the public, hence the diverse use of pronouns in different types of messages is logical to show solidarity.

 It is important that the government must recognize all negative emotions – fear, grief, anger, and hardships that the public faces and they must acknowledge that it is temporary and will be resolved in the future as evident in the above Tweet posts. Loepp (2008, p. 10) claims that one of the responsibilities of government stakeholders during a crisis is to convince people "that appropriate actions are being taken to respond to the crisis swiftly". This is evident in the tweet where the government officials on the MoH page address the health practitioners

> *To every health practitioner, your safety is a concern. We know that it is a difficult time for your community and for everyone. We are grateful for your services and people support you. #Prevention_kurona*, (07/06/2020, MoH 19).

This tweet is posted to reassure the doctors and to let them know that people support them and care about them. The message in this tweet goes beyond mere acknowledgment, it also validates the effort of doctors and boosts their morale. The inclusive language in this tweet, such as "we are" and "people support you" does not only show solidarity but positions health workers as valuable members of society. Again, the government authorities remind people that people's safety and well-being are their foremost priority. Lastly, such emphatic reassurance aligns with the strategies of crisis communication, where this kind of affirming social support motivate resilience and continued services. It is interesting to note that most empathy tweets are posted by The Ministry of Health. The Ministry of Education rarely posts empathy tweets. For instance, out of total 22 empathy tweets, only 5 empathy tweets are posted by the MoE and 17 tweets are posted by the MoH. Moreover, empathy tweets posted by the Ministry of Health address all people equally irrespective of their socioeconomic status by using the plural pronoun, all of us, and we know, for example, as evident in the above tweets. While the empathy tweets come from the Ministry of Health for all, addressing the entire population and promoting collective solidarity, the empathy tweets posted by the Ministry of Education only targeted students and teachers. This difference is quite significant, as it divulges that each ministry tailors its communication according to its institutional roles. While the MoH fosters national solidarity and unifies the entire community, the MoE's focus

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[1] Please see theme 1, page 122.

is only on educational institutions. This difference in their communication strategies also aligns with their institutional priorities: the MoH strengthens public health protection and community-wide resilience, whereas the MoE foregrounds educational continuity and well-being of those people linked with academia.

Morale-boosting tweets

Morale-boosting tweets are another type of reassurance tweet that I noticed in my selected tweets. These tweets seek to raise the spirit and generate a feeling of hope by showing appreciation and gratefulness. Morale-boosting tweets are repeatedly posted throughout the Covid-19 pandemic for the public and for health workers. For instance, the Ministry of Health posted several tweets the appreciation of health workers as evident in this post

> *Our doctors are our heroes. Heroes know the meaning of responsibility and work. The entire nation thanks them for their services, (*01/11/20, MoH 54).

In another tweet, the Ministry of Health authorities posted that

> *We thank our people from the heart. Peace and blessings of Allah be upon you, (*02/12/20, MoH 28).

Likewise, in another tweet, a government official from the Ministry of Education says that
> *The Kingdom is among the world's distinct countries in applying tests and in controlling so far in terms of statistics of the number of people affected with corona. This indicates our excellent policy of controlling the spread of coronavirus. We thank our people for their cooperation, (*06/11/20, MoE 49).

While empathy tweets acknowledge people's efforts and suffering, Morale-boosting tweets appreciate people's efforts. The first reassures people by using empathetic language, and the latter boosts morale by appreciating its people. What combines both these categories under reassurance tweets is their inclusive language which is created via the use of plural pronouns. Morale-boosting tweets aim to raise the spirit of people and health workers using words like heroes, frontline warriors, and corona worriers, etc. The morale-boosting tweets not only appreciate people and health workers but also the government is shown as grateful to people because of their cooperation. In an uncertain time like the Covid-19 pandemic, the morale-boosting tweet is quite significant because it helps to relieve stress and uncertainty

(Richter & Näswall, 2019). In the same way, they also assure people about their plans in their tweets saying that

> *the Crown prince is keen about the health and safety of their nation. The situation is under control. Trust us, we are doing our best, and thank you for people's cooperation, (*30/10/20, MoH 73).

This is a mixed tweet where the government officials reassure its people saying that the crown prince is controlling the situation and thankful to the people for their cooperation. Saying *"Trust us, we are doing our best"* demonstrates that the government reiterates that its policies are for the benefit of its own people. Saying this, the government authorities also position themselves as reliable and competent authority during the crisis. I found this appeal of trust significant as represents the government's awareness of public uncertainties and anxieties during the Covid-19. Hence this can be seen as the government's effort to secure legitimacy via confidence-building language. In comparison to empathy tweets, the Ministry of Education posted morale-boosting tweets often in which they show gratefulness and appreciation to students and educators as evident in this tweet

> *Thank you, teachers, for your efforts. They contributed to facilitating educational alternatives for students, (06*/04/2020, MoE 13).

Another morale-boosting tweet posted particularly for teachers says that

> *Thank you to every teacher who makes an effort to provide distance learning education and feel responsible at the time of the national crisis, (*10/05/2020, MoE 57).

Capitalizing on the words "thank you teachers" in both tweets, the Saudi government is not only grateful but also acknowledges their efforts by saying that they provided alternatives. It is interesting to note that government pinpoints the role teachers played during the national crisis. Both tweets show that at this time of health crisis, teachers perform equally to doctors. Such tweets not only acknowledge and recognize educators' efforts but also appreciate their efforts. Government officials are particularly conscious of using inclusive language. The use of the plural pronoun 'they' shows the government's effort to acknowledge the effort of each teacher. While the Ministry of Health is showing its gratitude for its doctors and calling them warriors, the Ministry of Education foregrounds the role of teachers during the pandemic. This signifies the collective effort of the nation during a national crisis.

Sub-Theme 6: Economy

The discourse on the economy comes to the surface in the last phase. As stated previously, this is the phase when the pandemic subsided and the economic issues all over the world including the Kingdom come to the surface. Since the effect of the pandemic is lesser at this stage, it is the reason that the tweets related to spreads drop in comparison to the previous phase. As the effect of the coronavirus dwindles, the discourse around economic issues remains prominent. Therefore, one can see tweets posted related to economic issues. Some of these tweets directly address economic issues and some indirectly reveal the grave issues related to economics. For instance, tweets like

take care of your neighbours when you sit to eat, (09/09/2020, MoH 71).

indirectly convey the consequences of economics on the common man. According to the World Bank, the pandemic hits the common man the most, and it pushes millions into poverty. The report prepared by the United Nations illustrate that the pandemic disproportionally negatively affected the quality of life of all (middle, low income, non-Saudi citizens) classes of Saudi Arabia ("Socio-Economic Impact of Covid-19 in the Kingdom of Saudi Arabia and How to build Better", p. 4). This is perhaps the reason that the government was asking people to be mindful of others as evident in the above tweet. This post is an Arabic proverbial saying that refers to take care of each other economically. The use of a proverb is significant as people can easily relate to it. The government officials did not ask for excessive financial help, recognizing that the pandemic affected everyone equally. Instead, they call for to be considerate and be mindful of others. The above tweet is one such example. However, there are many tweets that directly discuss the consequences of the economy as shown in this tweet

*we understand that our people are struggling, and we are happy to provide free medical services to our people, (*06/06/2020, MoH 43).

Here once again, the government acknowledges people's struggle and uses inclusive language by using the plural pronouns 'we' and "our people". By using inclusive language, the government stakeholders offer a sense of community. Therefore, such words, 'we' and 'our' help to build resilience as well as promote shared purpose. At the same time, the government also repeats the services they provide to their people by stressing 'free medical services to our people. On the one hand, this tweet directly shows the economic issues that arise during the pandemic, on the other hand, the word "our" in this tweet shows that the

government in the kingdom owns its public and considers itself responsible for people, therefore, trying to accommodate the public during difficult times. The above examples of tweets show the direct connection and relationship of the Kingdom's government with its people. Thus, it is argued that social media channels "transform public relations effectively" and bridge the gap between the government and its public, as Gregory (2004) notes. Consequently, I believe that during the Covid-19 crisis, social media platforms (in the context of this study, X) emerged as a "global village" that allows "people to access information at any time and stay updated minute-by-minute" (Hiebert, 2005, p. 124).

Sub-Theme 7: Religion

The topic of religiosity is also dominated in the second phase, and it does not stop here but keeps on increasing until the end phase. This makes sense because the Kingdom is predominantly a religious country and the religion (in the context of Saudi Arabia, it is Islam) is used frequently in such crisis scenarios. As a result, one can see that the government is advising or requesting people regarding hygiene by giving religious references, for example,

> *Abshar Ya Watan … we are all responsible. Please take care of your hygiene. Wash your hands frequently as cleanliness is half of our faith, (21/05/2020, MoH 78).*

The other tweet says

> *Please have patience, we will see the good days with good health. Allah will help us. Just follow the rules and stay away from the gatherings*, (12/05/2020, MoE 11).

The religious connotation in the above tweets is noteworthy. In the first tweet, the government officials remind the public that cleanliness is half of their faith. This tweet is an example of intertextuality because to provoke people to act responsibly, the government officials quote Hadith for the public. In the same way, in many tweets, government officials refer to Quranic Ayahs to persuade people to act responsibly for their country and for their loved ones. Since Muslims have strong faith that God will make things right, this strength of conviction is used strategically to persuade audiences into the desired action. Lim and Putnam (2010) claim that strategic communication often uses overt religious language to mobilize the public for action during times of crisis. In the context of the COVID-19 pandemic, Saudi government authorities also invoked religious messages to encourage compliance with health guidelines, reinforcing it as a moral and ethical duty (Pikwo, 2021). Framing Public health discourse within religious discourse, authorities could easily resonate with their public where faith plays a crucial role in the daily lives of the people, thus

enhancing the impact of their messages. In line with the same idea, the above tweets not only show the influence of religion in the daily lives of Saudi Arabian people but also show the manifestation of religious expression in social media (Zviadadze, 2014).

During the last phase, the percentage of economy posts increased. It is because, by the end of 2020 the impact of the pandemic on the world's economy was much more visible. Therefore, one can see the posts related to austerity measures from the government, posts related to the loss of jobs, and posts regarding companies cutting workers as illustrated

The Private company has to cut down many workers. The crown prince is preparing for alternatives to accommodate these workers, (30/07/2020, MoE 22).

This tweet expresses the concern of the government by using the word 'preparing'. It shows that private companies must cut down the workers whereas the government is working to provide alternatives to those unemployed workers to accommodate them. This can be seen as the government's proactive approach to address the unemployed people's needs. It is noteworthy that language suggests a forward-looking approach rather than merely acknowledging the issue, reinforcing the role of government as a stabilizing force in time of economic uncertainty.

Beyond religious discourse, another key aspect of strategic communication is the Saudi government's approach toward education. While the public health of people was the primary concern, the kingdom focused on the continuation of education as well. The following discussion illustrates the MoE's approach of leveraging social media as a platform for e-learning. This also reflects the MoE's long-term investment in education.

During Phase 3 and Phase 4, the posts related to online learning and E-learning were found at their peak. Even though the lockdown was eased in many places during Phase Three and Phase Four, the educational institutions in the entire kingdom were still closed and the government officials emphasized the importance of online learning or e-learning. I have not mentioned the topic of e-learning or online learning as one of the identified themes because posts related to online learning were only posted on the Ministry of Education's X page. However, the presence of such tweets signals to government's priority that extends beyond the immediate context of the pandemic and health. The implementation of digital technologies can be seen as government's effort to modernize the Saudi educational system.

The Kingdom is not only enforcing distance learning throughout the country but also implementing emergency learning measures for teachers and students. These efforts also

indicate an awareness of the digital divide, hence needing to equip educators for effective remote learning. Following are a few tweets as examples.

> *The educational activities are suspended. Teaching will be held via Zoom. #Ministry of education #zoom,* (30/04/2020, MoE 33).

> *E-learning videos improve the learning outcomes. The future makes the difference, (*30/04/2020, MoE 14).

> *The learning will flourish; we are preparing plans for our students, (*03/05/2020, MoE 36).*
> *The tutorial for the twelfth grade will be broadcast at 6 o'clock via Al-Ain channels, (*04/06/2020, MoE 10)*.

> *The educational portal is developed for Self-evaluation and educational materials to serve the students' demands. # All of us, (*06/09/2020, MoE 17).

> *Thank you, teachers, for their efforts. They contributed to facilitating educational alternatives for students. #Ministry of Education, (*30/11/2020, MoE 69).

> *The National E-Learning Centre is organizing a remote training for teachers and educationists, (*18/08/2020, MoE 43).

The language is noteworthy in the above tweets. The government officials use the active verb (for example, flourish, preparing, developing, organising) throughout to show that the government is not responding to the emergency but in action to actively shape the future of education in Saudi Arabia. The above verbs do not only signify crisis management but also indicate proactive policy planning, reinforcing the significance of education in the kingdom. All these verbs signify that even though educational activities are suspended in the wake of the crisis; the government is working on different lines to keep learning. The language used in the above tweets is both strategic and reassuring on the one hand, the government officials are stating their policies during the pandemic, and on the other hand acknowledging the teachers' efforts. The use of the plural pronouns (e.g., we are preparing, all of us) in the above tweets could be read as the government's attempt not to let go of anyone's effort unacknowledged. This inclusive rhetoric serves a double function; fostering national solidarity in times of crisis while positioning the government as a head of the state, These tweets posts on the one hand are evidence of the fact that the government in the Kingdom

implements distance learning at all educational stages and online assessments to help continue students' education during the Covid-19. Integrating digital learning in their education system, the kingdom has shifted the landscape of education toward hybrid education models, mirroring global trends in digital pedagogy (Hodges, et.al, 2020).

On the other hand, these tweets also illustrate that government officials in the Kingdom used the X platform successfully for public relations during the Covid-19 crisis. These examples demonstrate that during the Covid-19 crisis, X is used as "a major medium that PR Practitioners use efficiently and rationally for effective public relations" (Kirat, 2007, p. 170).

A meticulous exploration of the communications broadcasted by the Ministry of Education and the Ministry of Health through X amidst the pandemic unveils a stratagem, robust in its diversity and finesse, navigating through the multifaceted crisis that enveloped the globe. As the pandemic ushered a deluge of complexities, the MOE and MOH sculpted a communication framework that emerged as not merely a channel of information dissemination but as an instrument forging solidarity, assurance, and collective resilience among the citizenries.

In the midst of an era where information, both verified and unverified, surged through various channels, the MOE and MOH attempt to position themselves as reliable and crucial sources. However, their messages though explain the reality, they are open to scrutiny, as government narratives are always to maintain order and reassure the public. Take, for instance, the tweet:

> *The news regarding a new coronavirus record is wrong. The situation is under control, and we have an eye on it,* (6/05/2020, MoE 93).

which not only refutes misinformation but also provides a reassuring undertone, subtly calming the undercurrents of public anxiety. The tweets morphed into threads of a larger narrative, each dispatch becoming a vital stitch in the societal tapestry of the nation's journey through the pandemic. This journey, while chaotic and uncertain in its global context, was navigated with strategic communication that was thoroughly rooted in the societal and cultural bedrock of Saudi Arabia.

Despite the distinctiveness of the emergent themes, a hallmark of the communication strategy was its integrative approach, where various facets such as medical advisories, international collaborations, safety protocols, economic reassurances, and

transparent information dissemination were interwoven to formulate a cohesive and comprehensive communication blueprint. An example of this is the tweet:

> *We (the MOE) are working with relevant authorities to show that the power is not concentrated at one point. It is distributed among different departments, and all of these relevant departments are active in helping their people*, (23/05/2020, MoE 37).

This message, while explicitly informative, also subtly allays potential narratives of centralized decision-making, projecting an image of a united, distributed governmental effort in managing the crisis, and thereby reinforcing a narrative of collective, integrated action.

The government's communication strategy aimed to balance authority with empathy, acknowledging the diverse challenges encountered by citizens. Messages highlighting governmental efforts, such as

> *The government made efforts to achieve public interest, which came with the decisive decision in order to save lives, do not cause the epidemic outbreak*, (01/09/2020, MoH 83).

not only kept the public informed of actions taken but also provided an undercurrent of reassurance that every measure was being evaluated and executed with public welfare at its core. This strategic communication facilitated a delicate balance, ensuring the public was not merely compliant but was engaged, informed, and reassured through the varied challenges posed by the pandemic.

This nuanced communication strategy, rooted in empathy, reassurance, and transparent information dissemination, crafted a stabilized informational and emotional environment, vital in managing public sentiment and behaviour during the crisis. For instance, the tweet

> *Please believe in the news coming from official sources and do not believe in the rumours. All information regarding the new coronavirus variant is announced through official sources through the Saudi News Agency and the daily press conference,* (18/04/2020, MoE 97).

epitomizes a dedicated effort to quell misinformation and stabilize the informational ecosystem amidst the global 'infodemic'. It underscores a comprehensive communication strategy that is not merely reactive but also anticipative, ensuring the citizenry was not only well-informed but also emotionally and psychologically reassured amidst the global chaos.

Whilst analysing the selected tweets closely, I realized that there are some other strategies, i.e. the use of religious rhetoric, used by government officials. In order to elaborate further on the language of the tweets posted by both Ministries, I conducted a discourse analysis of these tweets. Discourse analysis helps me to uncover other strategies of crisis communication used by Saudi government officials, particularly in the context of the pandemic.

5.4 Discourse Analysis of Tweets

I employ Fairclough's (1992) three-dimensional approach of CDA: text (speech or writings), discursive practice (production and consumption of text), and social practice (the creation and consumption of text). The first dimension, text analysis, involves the linguistic analysis of tweets, focusing on grammar, vocabulary, and syntax of the tweets. For example, one can see the use of action verbs in order tweets. Syntactically, some tweets are stated in assertive sentences, some are stated in active voice, and others in passive voice sentences. Rhetorically, the use of repetitive words and figures of speech is seen in some tweets to emphasise certain facts. For instance, 'stay home' and 'wear the mask' are not only used in the statement of tweets but also to emphasise this, such phrases are also used with hashtags at the end of every tweet.

Discursive practice explores the production, distribution, and consumption of the text. However, in the context of my research, it involves contextual information about the tweets, including the audience, timings, and the platform (X) used. While I am offering a brief explanation of discursive practice in the following page, I describe it in detail in the form of public engagement with tweets. Lastly, social practice examines the socio-cultural context of the text, focusing on how the text reflects or empowers certain ideologies. In the context of my research, this includes the underlying ideology in tweets (for instance, calling for collective actions), the way ministries position themselves in relation to public to build trust (something I discussed under the section of the content of communication), and the broader socio-cultural context (for instance reference to religion). The social practices of the selected tweets are discussed at many places throughout the thesis. I am hereby discussing only a few examples of socio-cultural context to avoid repetition.

5.4.1 Text Analysis (Description)

At the textual level, Fairclough's model directs attention to the linguistic choices made by the tweet authors. Several formal features were examined, including:

- **Modality**: Use of modal verbs such as *must*, *should*, and *can* indicated the degree of obligation or certainty communicated. Tweets from the MoH often used high modality to assert authority on health directives.
- **Pronoun usage**: Pronouns like *we*, *you*, and *our* were used to construct relational proximity and solidarity between the government and public. For instance, "We must all cooperate" implied collective responsibility.
- **Verb tense**: Present tense was frequently used to convey urgency, while the imperative mood (e.g., "Stay home", "Follow guidelines") reflected directive speech acts aimed at influencing behaviour.
- **Lexical choices**: Recurring terms such as *responsibility*, *community*, and *protection* reflected an emphasis on moral and social duty, aligning with collectivist cultural values.
- **Hashtags and emojis**: Hashtags like #TogetherAgainstCorona served both to categorise content and evoke national unity, while emojis softened the tone and conveyed empathy or encouragement.

These linguistic features are not merely stylistic but serve a strategic function in shaping public perception and encouraging behavioural compliance. By analysing these features, the study identifies how language is used to mobilise action and construct institutional authority.

At local meaning and coherence, to begin with, the government officials of both Ministries use active verbs and modal verbs to indicate either the certainty or probability of events. Since the pandemic was an evolving phenomenon and no one was certain of the upcoming event, therefore, the use of the modal verb is inevitable. One example is the following tweet from the Ministry of Health

> *In addition to previous activities of delivery, new policies include restaurant delivery services as well. We urge you to choose delivery instead of dining in. Save yourself and protect your loved ones. The vaccine may take up to three months to get ready, (20/04/2022, MoH 100).*

Another example is from the Ministry of Education page
> *The Kingdom led its people, can offer help and support to its people at all levels, and prove to the world their strength and excellence, (14/08/2020, MoE 45).*

In another tweet, the Ministry of Health says

> *Protect yourself and those around you. You must disclose if you contract a virus.*
> *Please protect your family. # All of us, (01/05/2020, MoH 75).*

In these tweets, we see the use of active verbs and modal verbs as well. The government skilfully used the active verb "urge", "save" and "protect" to ask people politely how important it is for them and their loved ones to stay at home. Likewise, the use of the modal verbs "may" and "must" is strategically employed to manage and regulate public behaviour. Additionally, the modality is also to lessen the public's fear. 'Must' conveys a sense of strong directives from the government, enforcing mandatory actions, while 'may' suggests a sense of agency and allowing freedom for voluntary compliance (Halliday and Matthiessen, 2014). This approach of the government can be seen as, What Chiton (2004) describes, the strategic balance between persuasion and coercion.

Government officials of both ministries spread positivity throughout the year through the language of their tweets. Reassurance tweets (something I discussed previously) are an example of positivity and optimism, fostering a sense of stability amidst a crisis. The positivity in such tweets is evident via the use of encouraging rhetoric, and collective pronouns. For instance, MoE's tweet: "We appreciate our frontline heroes. Your dedication is the pride of our nation" (MoE, 02/09/2020) illustrates the use of language with a tinge of resilience and unity. Beyond motivation, the positivity in tweets also played a psychological and political role. Wodak (2009) argues that crisis narratives rely on emotional appeal to maintain public compliance and cooperation. By consistently promoting national pride and strength, the goal of these tweets is to ensure the public remains committed and engaged with official narratives.

Not only do both ministries post the government's policies throughout this period, but both ministries also counter the negative information or misinformation related to coronavirus as evident in the below posts

> *We warn of trading rumours about the new Coronavirus. The right information is only*
> *available on official platforms, (28/07/2020, MoH 60).*

> *The Ministry of Education sets up telephonic consultations (student consulting*
> *management) in all governorates and regions to answer students' educational and*
> *psychological concerns and questions, (13/04/2020, MoE 42).*

Both tweets show the government's policy that focuses on the public's well-being. When analysing linguistically, these tweets use imperative structures, for instance, we warn, set up,

assert authority, and show control over information. Cuch directive tones in these tweets, on the one hand, clear the distinction between verified information and infodemic, on the other hand, construct an authoritative stance. This aligns with Fairclough's notion of institutional discourse (2001) whereby the government authorities use assertive language to establish their legitimacy. Such tweets not only counter the misinformation but also help the public to overcome uncertainty by staying calm and united. Additionally, the phrase, like "trading rumours" conveys negative connotations to demonstrate that misinformation is an illicit activity. The choice of words here subtly delegitimizes the source of misinformation, ensuring that the public remains committed to the official sources.

On the other hand, MoE seems to adopt a more reassuring tone by offering consultations to students. The phrase, like answer students, reflects authorities' care for its youth, shifting the tone from authoritative to more emphatic. This contrasting tone in both tweets suggests that MoH encourages compliance by emphasizing misinformation as a threat, whereas MoE emphasizes emotional and cognitive needs to foster trust. Lastly, by incorporating institutional branding, like official platforms, establish a nationwide scope, positioning the government as an encompassing institute of the state. Given this context, I argue that discursive strategies and vocabulary choices in these tweets are not arbitrary but strategically designed to effectively communicate the crisis communication.

5.4.2 Discursive Practice (Interpretation)

This level of analysis explores how the tweets were produced and interpreted within the context of a public health crisis. Tweets were carefully curated by government communication teams, reflecting institutional goals, media training, and public relations strategy. Their reception by the public was shaped by cultural expectations, trust in government, and the emotional atmosphere of the pandemic. The interpretive process also varied based on language—tweets in Arabic often conveyed religious or moral appeals more directly than their English counterparts, highlighting the importance of linguistic and cultural alignment in message interpretation.

Government officials used communicative or interactive speech acts, for example, directives, declarative, and assertive, throughout the pandemic in their X posts. Searle (1967) defines speech acts as expressions that perform actions, like instruction, warning, etc. by employing these in their crisis communication, the government positions itself as an authority and guides the public regarding the pandemic. This is to persuade the public to act on the government's guidelines and publics. Speech acts play a crucial role in crisis communication as it is helpful in sending authoritative and clear messages to the public. For instance, a tweet from the Ministry of Health:

The correct attitude when you feel the symptoms of the coronavirus, isolate yourself and call 937. # We are all together., (6/05/2020, MOH 39).

This tweet is an example of a directive communication act as it instructs the public about the symptoms of Covid-19. The use of imperative, like isolate yourself and call 937, is also evident. It reinforces the urgency and the necessity of compliance with public health protocols. Additionally, the phrase "we are all together" appeals to the community, fostering solidarity and aligning with the government's appeal to collective public. Another tweet from the Ministry of Education says:

when neglecting preventive instructions, you are at risk, (28/08/2020, MOE 81).

This tweet can be read as an example of interactive communication as it states cause and effect (neglecting preventive measures --- you are at risk). Unlike directive tweets, this tweet indirectly asks for behavioural change by framing non-compliance as a personal risk. According to Covello (2021), framing health messages as a personal consequence increases the likelihood of public engagement. By shifting the responsibility onto the individual emphasizes that self-efficacy is a driver of behavioural change as Reynolds and Seeger (2019) note.

These tweets are evidence of the communicative or interactive approach of government officials. However, one must consider the broader context in which the tweets were posted to understand their full impact. As shown in the dates of the post, both tweets were posted during the crucial times of the pandemic when public compliance was crucial. The timings and words of both tweets show the government's effort to shape and influence public behaviour. This is quite significant as effective communication needs to be two-way communication. In other words, crisis communication must be adaptable, strategic, and engaging to influence the public's perception and behaviour. According to Marsen (2020), crisis communication must engage the public for the effective management of the crisis. This suggests that simply delivering instruction on social media for the public is not enough, instead, the government must use an interactive approach to provoke the public to act upon the government's guidelines as evident in the above post.

5.4.3 Social Practice (Explanation)

In the context of discourse analysis, social practice refers to broader social practices, ideologies, and power relations that shape or influence the discourse (Fairclough, 1992). At the broader social level, the discourse used by the MoH and MoE is embedded within Saudi Arabia's socio-political context. The invocation of religious language and emphasis on

collective responsibility reflect national values shaped by religion, monarchy, and tribal culture. Fairclough's model enables an understanding of how the ministries' tweets not only responded to a health emergency but also reinforced national identity, governmental legitimacy, and cultural norms. Crisis communication in this context becomes a means of reproducing dominant ideologies and strengthening state-citizen relationships during uncertainty.

In the context of my research, the Saudi government's linguistic choices, like modality, the use of active and passive voice, and speech acts, are shaped by societal attitudes. For instance, the Saudi government's discourse regarding the pandemic was not neutral, rather it was shaped by broader ideological frameworks like collective responsibility, state authority, and religious or moral duty.

At the form level, as the pandemic started, the government used both active voice and passive voice strategically to inform people about the coronavirus pandemic on X depending upon the nature of the information they wanted to post. Active voice is used in directive tweets which reinforces the government's authoritative role in managing the crisis. Passive voice is used to frame government policies to show it as inevitable. For example, all the instructions are always posted in active voice, whereas the government's policies are posted in passive voice. Additionally, to attract the public, government officials used a few hashtags. For example, #coronavirus pandemic, # Covid-19 # allofus, # stay calm etc. These hashtags can be identified as ideological markers as they align with the dominant narratives of that time. For instance, all of us frame the pandemic as a collective struggle.

On the X platform, government authorities reinforced ideological messages by using certain hashtags continuously by the end of every Tweet post. For example, the hashtags # stay home and # keep a distance are the recurrent hashtags used by both ministries during this time. This reinforces the state's emphasis on safety. At the format level, government officials used several different types of topos – a standard form of rhetorical argumentation or literary expressions - in their Tweets throughout the pandemic. For instance, government officials made use of threat topos to justify the measures taken by the Saudi government against the Covid-19 pandemic as stated in this tweet from the Ministry of Education

*the Ministry of Education approves the shutdown of all the universities of the Kingdom considering the Covid-19 pandemic, (*14/04/2020, MoE 3).

Another tweet highlights the threat justification:

> *Saudi Arabia suspends travel to other countries to spread the coronavirus*,
> (05/04/2020, MoE 99).

In the above tweets, it is seen that the government positions itself as the protector of the public welfare. They are legitimizing their policies as necessary safety protocols. It reinforces the ideological narratives that public well-being in time of crisis takes precedence over individual freedom.

Topos of responsibility is another recurrent topos used in the tweet posts by both ministries during the pandemic time, reinforcing an ideology of collective responsibility. These topos are utilised to hold the public responsible for preventing the coronavirus pandemic. for instance, this tweet from the Ministry of Health says:

> *We are all responsible. Please take care of your hygiene. Wash your hands*
> *frequently as cleanliness is half of our faith, (*21/05/2020, MoH 47).

The phrase, we are all responsible, conveys the ideology of civic duty which subtly shifts the responsibility from the state to the people. This tweet is quite significant as it does not only show the topos of responsibility but also the reference to faith (in this case, Islamic faith) as the topos of religion – another most frequent topos used in tweets during the pandemic time. The reference to faith combines the public health messaging with religious discourse, hence reinforcing state compliance and religious obedience. Given the centrality of religion – an indispensable part of the Saudi culture government officials keep on referring to the religion in their tweets to stop the pandemic outbreak and to justify the religious restriction. For example, a tweet from the Ministry of Health says:

> *the custodian of the two Holy Mosques and his Highness the Crown Prince decided*
> *to stop the Friday congregational prayer and exclude the two holy mosques,*
> *(*30/03/2020, MOH 7).

This tweet links religion with the government's decision-making which gives the idea that the Saudi government acts in accordance with the principle of religion. Such framing of messages ensures that public compliance is not only a legal requirement but a religious duty of the people.

Apart from themes and sub-themes, I found other interesting elements as discussed below.

5.5 Public Engagement with Tweets

In adherence to the previously outlined methodology, a total of 200 original posts were sampled for analysis, with 100 tweets from each Ministry's X page. The selection process was based on the level of public engagement, as quantified by the number of retweets. The analysis of the selected tweets revealed a consistent trend: tweets providing information and pertinent figures pertaining to the Covid-19 pandemic experienced the highest frequency of retweets. Notably, tweets from the MoH, disseminating data on the number of deaths and recoveries, witnessed substantial retweet activity. Similarly, tweets from the MOE featuring information on the conversion of educational institutions into hospitals and the availability of beds garnered considerable retweet engagement. Furthermore, tweets delivering clear directives or communicating government policies elicited noteworthy user participation in the form of comments.

For example, one such tweet on the MOE, which received 5,451 retweets, making it the most retweeted post during 2020, is:

> *Director General of #Education adopts the beginning of the implementation of the Jeddah Distance Education Award within educational supervision management initiatives, which aims to stimulate teachers and educationists on distinguished educational practices in distance learning according to specific criteria,* (21/05/2020, MOE 1)

Within the corpus of data gathered, this tweet from the Ministry of Education (MOE) shows the high engagement and interest generated by the ministry's proactive educational strategies during the pandemic. The tweet received 5,451retweets, a clear indicator of its significance and impact within the educational community. The substantial number of retweets, coupled with 700 comments primarily composed of inquiries about the award's implementation and criteria, showcases the tweet's effectiveness in stimulating a dialogue around educational innovation. This tweet was selected for analysis due to its relevance to current educational adaptations necessitated by the pandemic and its resonance with the concerns and aspirations of educators and stakeholders within the academic sphere. The high engagement rates are reflective not only of the community's appetite for distinguished educational practices and recognition thereof but also of the ministry's success in capturing and addressing the evolving educational zeitgeist.

Regarding the content of the tweets themselves, the engagement they received is telling of the public sentiment and priorities. The tweet by the MOE's Director General

highlights his commitment to educational excellence despite the challenges imposed by distance learning, tapping into the collective aspirations of educators and students alike. It was retweeted, indicating the educational community's endorsement and curiosity about this initiative.

The interpretation of retweets as endorsements or agreements finds support in existing literature examining social media behaviours. Shin, Wang, and Lu (2022) demonstrated that retweets function as "endorsement-based heuristics," influencing users' perceptions of credibility and acceptance of shared content. Their findings suggest that users perceive tweets retweeted by individuals they trust or follow closely as implicitly endorsed, which enhances the perceived credibility and agreement with the content Similarly, Cork and Eddy (2017) identified the retweet function explicitly as a form of electronic word-of-mouth marketing (eWOM), emphasizing its role in signalling agreement or endorsement of the original message. They argued that retweeting intentionally spreads content, reflecting the user's alignment or support for the message. This intentional sharing signifies a form of user investment, reinforcing the interpretation of retweets as a credible endorsement of content (Cork & Eddy, 2017). Accordingly, these scholarly perspectives collectively justify interpreting retweets and engagement metrics as indicative of endorsement or agreement within this thesis's analytical framework.

The conversation that unfolded beneath the aforementioned tweet was rich with queries about the award's criteria and its potential to motivate and recognise exemplary practices in remote teaching a clear indicator of the tweet's resonance with the community's current focus and concerns.

Similarly, a post of directions on the MOH page:

> *Before you go shopping, here are some important guidelines that can help you in the prevention of coronavirus. Please follow the guidelines and take care of your health and your loved ones, (*18/07/2020, MoH 50).

Among the most retweeted posts, this particular tweet in question amassed a substantial 5795 number of retweets, coupled with close to 895 comments. I have found this tweet quite significant owing to its situational awareness. The government authorities seemed to be mindful of the situation, therefore acting ahead of time. This tweet is posted before Eid time. Knowing fully well that this is the time of shopping, government authorities are providing safety guidelines for this activity. This social media update elicited a plethora of public responses, ranging from enquiries pertinent to the festival preparations to personal

anecdotes about shopping ventures during this period. Noteworthy is the fact that the ministries in question, those being the Ministry of Education and the Ministry of Health in Saudi Arabia, actively engaged with the public by responding to the queries presented in the commentary thread. This level of interaction signifies a proactive approach by the ministries in disseminating information and managing public relations, an engagement that is indicative of the robust communication strategies employed during significant cultural events.

The retweet figures, while needing confirmation for source validation, demonstrate the public's reliance on and respect for the ministry's guidance during pivotal cultural occasions. This interaction is not just a unidirectional broadcast of information but a dynamic dialogue, with the ministry playing a critical role in informing, advising, and reassuring the populace. This is significant in a country where public health measures intersect with religious and cultural practices like family gathering during Ramadan and Eid, congregational prayers, and umrah and hajj pilgrimages. the messages coming from both ministries navigate this sensitive balance, ensuring public compliance whilst acknowledging the cultural and religious practices. Furthermore, tweets with facts and figures also get more engagement from the public. For instance, the following tweet on the MoH page:

> *The number of laboratory tests for the new Corona virus (Kovid-19) in the Kingdom until April 8 examined 115,585 at 10 laboratories around the Kingdom using the molecular polymerisation technology, at a rate of 3340 examination per million people, (13/05/2020, MoH 71).*

This tweet is retweeted 4547 times and receives 1860 comments. The public interaction on this post, as evidenced in comments and retweets, illustrates that the public is interested to know their government plans and actions taken to combat the COVID-19 pandemic.

Time and timeliness of tweets are seen as significant factors in terms of public engagement. Looking at the pages of both Ministries, I noticed that tweets posted during the day have more retweets in comparison to those posted at night-time. According to the Digital Marketing Institute (2007), tweets posted during working hours are likely to earn the best level of engagement. In the same way, the number of retweets likes, and comments increased during the peak time of Covid-19.

I also discovered that tweets that describe precautionary measures regarding Islamic rituals during the pandemic are liked the most. For instance, this particular tweet on the Ministry of Health page is liked by 4949 users with 771 comments:

> *Please have patience, we will see the good days with good health. Trust Allah if you are believers. Allah will help us. Just follow the rules and stay away from the gatherings*, (12/05/2020, MoH 36).

In the above post, one can see the clear reference to the religious scripture, and Quranic sayings, the phrase, "if you are believers" is particularly noteworthy that may seem counter-intuitive in the kingdom considering that Islam is the most dominant theme. This phrase serves multiple purposes, one the one hand, it reinforces commitment to religious values in times of crisis, on the other hand, it calls people to align with their actions. Additionally, while this post received 4,949 likes, it is vital to avoid making a link between its popularity and its religious tone. Saying this, it is important to highlight that social media engagement is influenced by multiple factors, like audience reach, and the timings of the tweet etc. I believe further analysis is required to determine the role of religion in tweets with reference to public engagement. the above tweet does not explicitly tether to any Islamic ritual, but it reverberates with religious undertones, invoking patience and divine faith as mechanisms of resilience. The call for patience and the anticipation of better days, couched in an appeal to trust in Allah, resonates deeply within a society where Islam is interwoven with daily life, serving both as a source of comfort and as a moral compass guiding behavioural norms. As a fundamental virtue of Islam, patience, in Arabic it is called Sabr, emphasized frequently in Quran and Hadith as a key component of faith in times of crisis (Ali, 2006). Therefore, it is argued that the religious references in tweets do not only provide reassurance but also make a message religiously and culturally resonant for the public. This invocation, although not directly citing specific rituals, draws upon the overarching Islamic principle of tawakkul— reliance on God particularly relevant in times of uncertainty. While the message might not relate directly to religious rituals, it aligns with the broader religious and cultural ethos that influence social conduct in Saudi Arabia. By leveraging this shared value system, the MOH's message amplifies its call for public adherence to health guidelines, notably the avoidance of gatherings, which is a preventive step against the spread of the virus. Such a message underlines the strategy of integrating cultural and religious sentiments to bolster the effectiveness of public health communications, thus ensuring that the message does not merely disseminate information but resonates on a deeper, more personal level with the intended audience (Al-Rasheed, 2021). Given this context, I believe that the length of the post, the facts, and figures used in the tweets, the information highlighted in the tweets, posts with clear guidelines, and information from the government got more engagement in the form of retweets, likes, and comments from the public. Thus, it is argued that crisis communication is more effective when it resonates with audience's cultural and religious roots (Earle, 2010).

The comments section is also interesting to note. The comments section expressed people's understanding of the Covid-19 pandemic. To complement the analysis of the selected tweets, I included the engagement metrics associated with the selected tweets by focusing primarily on their comments as a form of engagement. I selected a representative sample of comments based on likes and relevance. Only those comments are analysed which got a high number of likes and that directly respond to the content of tweets. Using this criterion, the top 2 most liked comments of each tweet are analysed, thus a total of 400 comments (2x200 tweets) were analysed. Systematically analysing comments along with 200 original tweets provides a comprehensive overview of public engagement with the ministries' posts. Many frightened comments are countered by government officials with the corrected data and figures to avoid panic. For instance, under the post where the government announces a special flight for those studying abroad:

> *Ministry of Education Arrange a special flight for the transfer of citizens returning from abroad.* (10/04/2020, MoE 26), 759 comments

Some people commented that these students would bring corona from abroad as well. The government officials counter their misconception by telling them that these special flights will follow the protocols or government guidelines related to Covid-19, so they should not be worried about their safety.

When comparing both accounts, I observed that the Ministry of Health posts got more public engagement in comparison to the Ministry of Education. For instance, the most retweeted post of the Ministry of Health has 47,966 retweets, whereas the most retweeted post of the Ministry of Education has 5,451 retweets. The most retweeted tweets of the Ministry of Education are the Tweets related to the government's policy regarding Education although the Ministry of Education also posted other government policies. The top tweets of the Ministry of Education are retweeted 5451, 2648, and 2361 respectively. The reason is probably that Covid-19 is a health-related pandemic and drastically affects people's health. Therefore, most people probably rely on the information posted on the Ministry of Health's page. Although the Ministry of Education reiterates the government's policies regarding health and other matters, most of the time it seems that people only look for information related to education matters. This is probably the reason that only such tweets are seen as the most publicly engaged tweets.

The analysis of public engagement could be helpful for decision-makers to know about the public's opinions and concerns in real time and without an intermediary. This also helps to alleviate the communication gap that exists between public and the government

officials specifically decision-makers (Bosché et al., 2025). While digital platforms enhance accessibility, they also divulge the existing gap in responsiveness and trust between citizens and its government during crisis (Mergel, 2012). Although many tweets received high public interaction in the form of retweets and likes, the information function is the most used message function. It is observed that the information function was dominant during this period because people asked different queries. The tweets containing information or action are retweeted the most whereas tweets containing community function and action got the most comments. People's comments can broadly be divided into four categories: information-seeking, frightened comments, resource mentioned, and rational voices. As the name indicates, information-seeking comments asked or served about the required information. Rational voices refer to the logical voices that help to counter the misinformation. Frightful comments create panic or frightening situations such as posting or commenting on conspiracy theories related to the pandemic. Lastly, the resource mentioned refers to the web or media resources mentioned in the comments. Analysing closely the comment section involves layers of meanings/themes as shown in the table below with examples.

Table 8: Sub-themes-Tweets examples

	Sub-themes of Comments	Examples of Tweets	Comments
General Comments	Information seeking is those comments that sought information about the mentioned topic in Tweet.	The Ministry of Education designed the curriculum according to remote teaching and moved all teachings remotely. 02/05/2020, MOE 91	under this post, there were many comments asking for the exact details of the curriculum.
	Voice of Reason includes those comments which help to downplay the impact of Covid-19.	King Salman and the other guardian of the Kingdom are keen on the health and safety of their nation. The situation is under control. Trust us, we are doing our best. 28/05/2020, MOE 89	Under this post, there were many comments like "all of us need to calm down about the Covid-19" and "we need to relax".
	Frightening comments it refers to those comments where some people would comment on frightened scenarios or conspiracy theories associated with the Covid-19 pandemic.	SOME Jobs Carry a Higher Risk of # Covid19 Transmission. Please take care of your health and follow the protocols. Use protective measures and keep the distance. 19/06/2020, MOE 2	Under this post, there were certain comments like "The Covid-19 is artificially created in China to control the economy of other countries".

	Resource mentioned in Comments: these refer a number of media or web resources that normally people comment under the original post.	We reaffirm the importance of taking information from its official sources and do not believe in the rumours. All information regarding the new coronavirus variant is announced through official sources through the Saudi News Agency and the daily press conference. 18/06/2020, MOE 51	Under this post, people commented with the original link of either the Saudi News Agency or the daily press.

Prior studies indicate that warning, reassurance tweets, and uncertainty reductions gained the highest level of public engagement on X (Alhassan & AlDossary, 2021). The study also suggested that the addition or posting of media files, and links negatively correlates with public engagement, whereas hashtags positively correlate with public engagement (Alhassan & AlDossary, 2021). These findings partially align with my studies as I observed that reassurance tweets and tweets emphasizing collective responsibility and moral duty tended to receive higher public engagement. However, News and Updates tweets also garnered high interaction in my research in contrast to prior studies.

5.6 Hashtags regarding Covid-19

Hashtags are those phrases or words that are preceded by a sign of hash (#). This sign turns the phrase or word into a searchable category so anyone can click on it and see all the information available on this. The most commonly used hashtags in the selected 200 tweets were #Coronavirus (47 times), #Covid-19 (39 times), #outbreak, #social-distancing (18 times), #StaySafe, #Allah, #CoronaInRamadan, #Quarantine, #QuarantineLife (9 times), #Coronavirusoutbreak, #stay-home, #plague (2 times), #coronaviruspandemic, #wear-masks (40 times), #vaccine (22 times), #virus, #LockDownNow (28 times), #Korona, #Corona, #AllofUs, #MinisterPressConference, #SaudiNewsAgency, #WashHand, #Wearealltogether (8 times), #remotelearning (8 times), #Zoomclasses, and #remoteteaching (10 times), etc. When analysed closely, these hashtags grouped under specific themes. They are not just linguistic catchphrases but also help to identify frames in posts. They are used as engagement tools, allowing broader conversations and aligns them with broader prevailing narratives. Serving as persuasive mechanism, they make the messages more visible, clear,

and loud. In the context of government tweets, they act as a strategic tool to shape public perception and amplify official discourse.   I observed six themes in it as stated below:

5.6.1 Covid-19 Pandemic

They are those hashtags that clearly indicate that this tweet is about Covid-19. Many hashtags in the selected Tweets stand out as identifiers of the Covid-19 pandemic. For instance, #Coronavirus, #Covid-19, #Coronavirusoutbreak, #coronaviruspandemic, etc. these hashtags were particularly kept under consideration whilst selecting a sample of two hundred tweets for examination. This theme underscores the way government structure their communication during a crisis. I believe that these hashtags serve a dual purpose here: they inform the public about the ongoing risks while highlighting their severity through continuous repetitions. Government Interventions

They refer to government measures and interventions. For example, #socialdistancing, #Stay_Home, #LockDownNow, #Quarantine, #RemoteTeaching, etc. These hashtags also cover those measures recommended by health practitioners, like #WearMask, #WashHand, etc. I believe that these hashtags were used to ensure that messages regarding safety measures were highly visible and accessible to the audience. Additionally, they work as behavioural nudges encouraging compliance by associating with collective responsibility.

5.6.2 Media and News

These include hashtags related to news and media. For instance, #MinisterPressConfernce, #SaudiNewsAgency. Such hashtags are usually given at the end of any news that either refers to the news played on Saudi TV or any press briefings. Along with serving as credible sources, they also help to counter misinformation and reinforce public trust in the government's sources.

5.6.3 Health-related tweets

These hashtags refer to health safety during the pandemic. For instance, #StaySafe, #Qarantine are a few such hashtags. Along with those, it is noticed that certain other medical conditions are also referred to during the pandemic, like, #Diabetes, #BloodPressre, etc. Such hashtags refer to a tweet containing information about any medical condition. Not only do they make the public aware about the pandemic, but they also highlight the importance of managing the existing health conditions of vulnerable audiences.

5.6.4 Social hashtags

 These hashtags refer to social life during the pandemic. The most prevalent in my selected data is #QuarantineLife. These hashtags also send positive vibes and encouragement like

#WeAreAllTogether. Such tweets are essential in fostering the virtual community in times of isolation, helping people to stay connecting despite physical distancing.

5.6.5 Technological References

They are those hashtags that refer to technology during the pandemic. For example, #Zoom, etc. These hashtags illustrate people's reliance on digital platforms during times of crisis, emphasizing the role of digital technologies in managing daily life activities.

It is worth mentioning here that a mix of English and Arabic hashtags were used in the selected corpora of tweets. As described above that some of the most frequented English tweets were "Corona, Covid-19, vaccination, mask, Coronavirus, Covid-19, outbreak, social distancing, Quarantine, Coronavirus", and Arabic were " .كورونا. كلنا. صحتي #تعليم#بعد_عن_تعليم. كلنا أمن. كوفيد. كلنا. لقاح #". The choice of language in hashtags has an implication for the audience's reach and visibility. While English hashtags seem to have global reach, Arabic hashtags primarily target the Arabic audience. The use of both languages in hashtags could be read as the government's strategy to maximize the reach and diversity of their tweets. Additionally, the Arabic hashtags could also be seen as the government's effort to resonate with local audience.

Tahamtan et al. (2021) argue that there are two benefits of using hashtags. On the one hand, it facilitates the public opinion on social media by framing it in a particular way (for instance, highlighting certain aspects of the issue while downplaying others), and on the other hand, it makes it easy for everyone to identify the content of the tweet. Considering these benefits, I would argue that Saudi government use hashtags wisely to grab the public's attention and focus on a specific topic. This is measured through their interaction with the Government's Tweet posts as described in the next section.

5.7 Similarities and Differences Between the Posts of Two Ministries

My analysis illustrates that the Kingdom of Saudi Arabia is one good example where government officials heavily utilise social media platforms like X for crisis communication due to its popularity among the public (Dixon, 2022). Since the start of the pandemic, both selected Ministries have utilised their platforms strategically for crisis communication.

The number of tweets was relatively low in the pre-crisis stages. There were occasional posts related to Covid-19 in the international context where government officials were seen as posting about the situation of the pandemic in China. However, with the arrival

of Covid-19 on 2 March 2020, increased activity on X was seen regarding Covid-19 communication. When comparing both Ministries, it was seen that the Ministry of Health was more active in tweeting in comparison to the Ministry of Education (see Figure 10). Although an equal number of tweets are selected from both ministries, a review of the overall posting pattern suggests that MoH posted frequently in comparison to MoE. Perhaps the reason is that the pandemic was related to health, hence more activity and information related to the pandemic is seen on the Ministry of Health's page. Additionally, the MoH covered a broad range of topics, like the identified and recovered cases, vaccine information, and daily updates regarding Covid-19, hence higher level of activity is seen on the MoH's page. The Ministry of Education became more active on X when the government announced the closure of the educational institutions. However, Ministry of Education posts were not only limited to education. Instead, both Ministries posted all information related to Covid-19, and the nature of the information kept evolving as the pandemic evolved.

In terms of public engagement, the tweets posted by the Ministry of Health, in the beginning, received the most engagement in the form of retweets, likes, and comments from the public (for instance, ID 1, and 2 on MoH page). This can be explained in two ways: the first is that the Ministry of Education was not very active on X in the initial phase of the pandemic. Secondly, the pandemic was related to health, therefore, people mostly rely on the information posted on the Ministry of Health page. Although both Ministries posted all categories of tweets educational tweets dominated on the Ministry of Education page whereas other categories dominated on the Ministry of Health page as described previously with figures and examples.

The frequency of posting different types of tweets also varies in the selected ministries. For example, The Ministry of Health posted a higher number of News and updates tweets, call to action tweets, and Reassurance tweets in comparison to The Ministry of Education. Whereas The Ministry of Education posted the highest number of awareness and educational tweets in comparison to The Ministry of Health. It is understandable that the Ministry of Health is more concerned about the health of its people, hence posting higher tweets regarding the Covid-19 News and updates, call to action tweets, and reassurance tweets. The job of the Ministry of Education is to provide education in all aspects. This is perhaps one of the reasons that many awareness educational tweets are retrieved from the Ministry of Education's X page. The number of tweets posted by both ministries during this time is illustrated in the form of graphs.

	News and updates tweets	Call to action tweets	Awareness and Education tweets	Reassurance and empathy Tweets	
■ Total number of tweets	56	41	63	40	
■ Ministry of Health	42	26	28	22	
■ Ministry of Education	14	15	35	18	

■ Total number of tweets ■ Ministry of Health ■ Ministry of Education
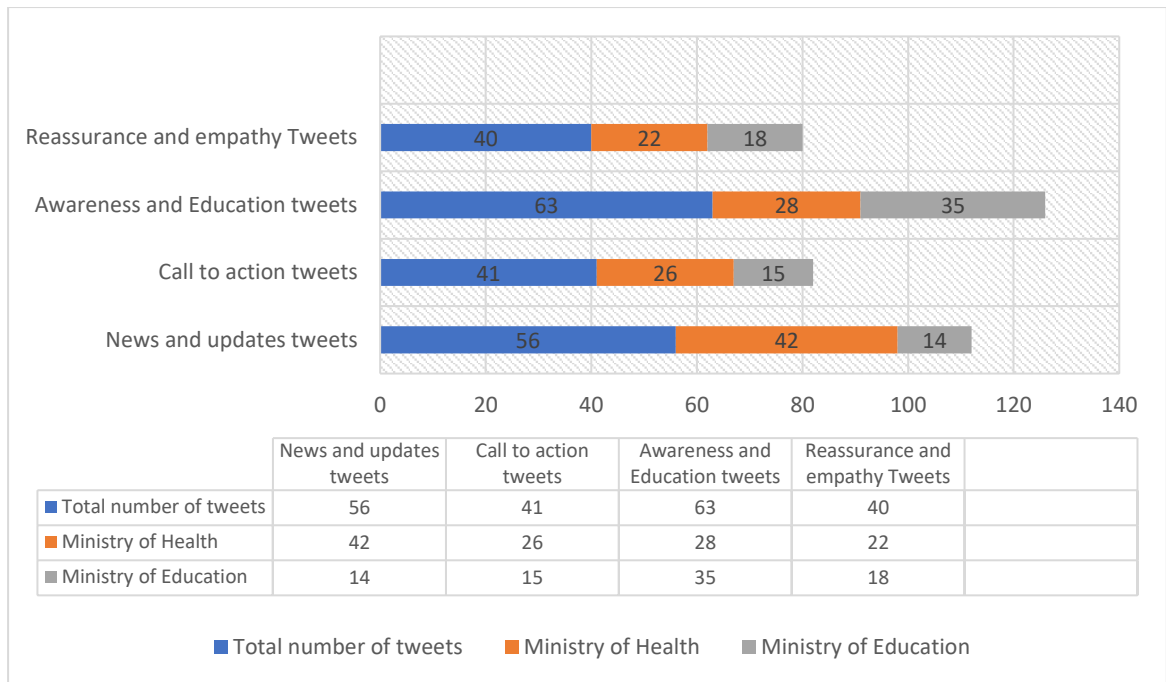
Figure 11: Graphic illustration of posted tweets

The frequency of X posts remained stable during the selected timeframe. Recent studies suggested the drop down of X posts as the severity of the crisis increased (Boon-Itt & Skunkan, 2020). Their studies examined covid-19 communication on social media by the government agencies and organisations. The findings of this study indicate that the initial engagement was high which was gradually less because the reliance was much on traditional media outlets like TV. It was found that the initial shock and uncertainty of the pandemic warranted more tweets in the beginning. However, in the case of selected institutions of Saudi Arab, I found the frequency of X posts kept increasing. Since the pandemic is constant development and changing, the tweet posts also keep on evolving in terms of information according to the changing circumstances. According to Hughes and Tapia (2015), the need for information increases as the uncertainty of an emergency increases because appropriate and timely information could lead to substantial improvement in the process of response.

5.8 The use of different languages in X Posts

Another interesting fact is the use of different languages in tweet posts during the Covid-19. most of the tweets – approximately 90 to 95% - were posted in the Arabic language. This is expected considering that the official language of Saudi Arabia is Arabic. However, many times the same Arabic post was tweeted in different languages like English, Urdu, Bengali,

and French, likely to reach a wider audience including the expatriates living in the kingdom. Effective crisis communication requires the delivery of clear information to all segments of the population, hence posting in different languages ensures that information reaches people in a language they understand best by posting tweets in multiple languages, Saudi authorities want to increase the reach of their tweets so that the communication can reach to non-Arabic audiences as well. This is particularly crucial in the time of pandemic, like Covid-19, to keep the information accessible to everyone.

As of 2022 Saudi consensus, many foreign people are employed in Saudi Arabia mostly Pakistanis, Indians, and Bangladeshis). This explains why Saudi authorities particularly pick up Urdu and Bengali languages along with English and French to post their crisis communication. Posting tweets in different languages not only makes valuable information, like safety measures, and health guidelines, accessible to everyone but also demonstrates that both ministries are culturally sensitive and have respect for diversity. This approach increases cooperation and trust from expatriate communities, which is essential during public health crisis, thus improving public engagement and compliance (Reynold and Seeger, 2012).

During a public crisis, like the Covid-19 pandemic, it is important that the message is understood and delivered across all sections of society. Misinformation due to the language barrier can hinder compliance, hence causing the exacerbation of the spread of the virus. Therefore, it is argued that a crisis message must be delivered in multiple languages. By providing information in multiple languages, the Saudi government attempts to minimize the risk indirectly. Beyond practical accessibility, I see the usage of multiple languages convey a sense of inclusivity and cultural sensitivity. It signals that the government recognizes the contributions of expatriates, thereby they value their well-being in return. This can foster a sense of belonging and trust among non-Arabic-speaking residents, thus enhancing public cooperation and engagement (Vaughan and Tinker, 2009).

When analysed closely, it is argued that tweets posted on both Ministries' pages are partially consistent with the model of CERC. The CERC model suggests that crisis communication should focus more on warning, precautionary, and risk messages (Alhassan & AlDossary, 2021). The reason is that during the pre-crisis stage of the pandemic, the public seeks information regarding the crisis. Considering this suggestion of the CERC model, it is noticed that most of the Ministry of Health messages contain news and updates regarding risk, warning, and precautionary along with uncertainty reduction messages in comparison to the Ministry of Education where the proportion of all kinds of messages was lower.

The CERC model suggests that crisis communication should also include reassurance messages in the initial phase of the crisis not only to reduce public uncertainty but also to reassure them emotionally (Alhassan & AlDossary, 2021). Consistent with this model, both the Ministry of Health and the Ministry of Education started posting reassurance messages in the prodromal stage though not in a large proportion. As the crisis continues to the resolution phases, The CERC model requires the continuous postage of reassurance messages. In accordance with the model, both Ministries kept posting the reassurance messages till the resolution phase. In line with the same idea, Seeger (2006) also claims that health practitioners should offer reassurance messages till the end of a crisis.

The findings of my research set the stage for deeper discussion and its theoretical and practical implications, which is explored in the next chapter.

Chapter 6: Implications and Recommendations

6.1 Key findings

This research examines the crisis communication strategies about the pandemic on X from a non-western perspective. The study explores how the Saudi MoH and MoE strategically communicated during the pandemic to contribute to public relations literature. The demonstrated strategies include distinct messaging comings from both ministries that align with Saudi society and culture. For instance, their communication reflects Saudi Arabia's cultural values by focusing on collectivism (the idea that people together work for the common good) and religion. The posts include family-oriented messages and religious appeals to persuade people. The Saudi government also combats the misinformation and disinformation associated with covid-19 using inclusive and persuasive language. For example, one of the tweets with religious appeal receive 3,208 retweets, whereas one of the precautionary tweets receive 2100 retweets highlight the resonance with culturally embedded messages. This research highlights the importance of using cultural elements, i.e. religion and collectivism, in crisis communication. It suggests that future research could explore the importance of local elements to manage crises effectively.

X has proven to be a valuable tool for crisis communication during the Covid-19 pandemic. However, it has also posed challenges, such as the spread of misinformation. Saudi Government officials have utilised X to address these challenges by posting authentic information and urging the public not to rely on unreliable sources. This demonstrates that X can serve as a direct platform for crisis communication, as it offers fast, authentic, targeted, and official communication channels. The use of inclusive language, reassurance tweets, and empathy in government communications demonstrated a conscious effort to address the physical and psychological concerns of the public, ultimately fostering a sense of togetherness in combating the crisis.

Furthermore, the study revealed the significance of creating crisis messages using different rhetorical structures, hashtags, and rhetorical strategies to engage the public and shape their perceptions. The effective use of active and passive voice, situational tweets, precautionary measure tweets, and partnerships with media outlets contributed to the comprehensiveness and impact of crisis communication efforts. The research underscores the importance of crisis communication and public engagement with health agencies, emphasizing the need to continuously adapt and evaluate communication strategies in crisis situations. It also emphasises the need for equity in crisis communication, including diverse

language representation and culturally adapted messaging to ensure that all segments of the population are reached.

Scholars have acknowledged the value of X as a component of a balanced communication campaign during a crisis (Evans et al., 2011). The usage of X by government officials during the pandemic further supports the effectiveness of this platform in crisis situations. The ability to disseminate information quickly and reach a large audience makes X an essential tool for responding during a widespread crisis. Utilising X for the dissemination of information regarding the coronavirus pandemic has provided a valuable foundation for risk communication.

6.2 Discussion

This thesis addresses four core research questions that collectively illuminate how crisis communication unfolded on the social media platform X during the Covid-19 pandemic, specifically focusing on communications by the Saudi Ministry of Education and Ministry of Health in 2020. Predominantly, four main themes emerged from the analysis: Awareness and Education, News and Updates, Call to Action, and Reassurance and Empathy. Each theme highlights different dimensions of the communication strategy, illustrating how these ministries sought to inform, guide, reassure, and engage the public during the crisis.

In response to how Covid-19 was presented and characterized in these communications, the ministries utilized strategic framing techniques that emphasized collective resilience, empathy, reassurance, religious and cultural appeals. Inclusive language and strategic hashtags like #WeareallTogether and #AllofUs reinforced the message of collective responsibility and community solidarity. This approach reflects the ministries' intention not only to inform but also to foster trust and collective action among the public.

Further analysis revealed seven sub-themes under these main categories: Medical messages (included under both Awareness and Education, and News and Updates), Religion messages (Awareness and Education, and Reassurance and Empathy), Countering misinformation (News and Updates), International messages (News and Updates), Restriction and Lockdown directives (Call to Action), Spread prevention (Call to Action), and Economy-related communications (Reassurance and Empathy). Each sub-theme encapsulates specific aspects of pandemic communication, ranging from practical medical advice and international updates to addressing economic concerns and combating

misinformation. These sub-themes demonstrate the ministries' nuanced and context-sensitive communication approach throughout the different phases of the pandemic.

Regarding linguistic considerations, Arabic language dominated the communications, effectively reaching the majority demographic in Saudi Arabia. However, other languages such as English, Urdu, Bengali, and French were also strategically used, albeit to a lesser degree. This multilingual approach was indicative of efforts toward equitable communication, highlighting an awareness of linguistic diversity and accessibility. Nonetheless, the research underscores that greater emphasis on multilingual communication could enhance inclusivity and reach marginalized groups more effectively in future crisis situations.

Public interaction and engagement with these communications on X were dynamic and evolved according to the pandemic's stages. Initially, individuals showed significant engagement with informational messages providing news and updates. As the pandemic intensified, engagement shifted towards messages containing direct calls to action, such as lockdown measures and precautionary directives. During the later resolution phases, reassurance and empathy-focused communications became more prevalent, reflecting the shifting emotional and informational needs of the public.

Lastly, explicit crisis communication strategies identified in MoE and MoH tweets include proactive timing, transparency, culturally tailored messaging, combating misinformation, and consistent reassurance. Communication consistency, congruence, and the strategic use of culturally relevant rhetorical appeals further bolstered public trust and compliance. The ministries coordinated approach underscored the importance of adaptability and responsiveness in crisis situations.

The following sections provide a more in-depth discussion of these findings, exploring each thematic area, examining public engagement patterns, and analysing the ministries' explicit communication strategies in greater detail.

6.2.1 Content of Communication

The findings of my study illustrate that the rhetoric used by both institutions focuses not just on information dissemination but on strengthening the trust and resilience of the public. It is found that crisis communication that happened during the pandemic is not only limited to precautionary measures messages but also contains guidelines, orders, policy, educational tweets, motivational boosters, the nature of the virus, recovery rates, etc. In line with this view, Kim and Liu (2012) argue that crisis information should not only contain the basic information related to the crisis but should also address the organisation's preparation for the

crisis. The Ministry of Health and the Ministry of Education also posted about their preparation, guidelines, and orders throughout the pandemic – something I discussed above.

As discussed above, the rhetoric used by the Saudi institutions is not only focusing on information dissemination but also on strengthening the spirit and trust of the public to restore the hope that together they can overcome the crisis. Coombs (2010) argues that "crisis managers must begin their efforts by using communication to address the physical and psychological concerns of the victim" (p. 39). He states that in any crisis management, these two responses are obligatory before any other management needs. My study finds that Saudi government officials cover both aspects. They communicate various aspects of crisis management information such as orders, briefing, and guidelines, precautionary measures, nature of the virus, recovery rates, availability of facilities, and the number of cases, etc. Previous studies on crisis information suggested that crisis communication formerly addressed only the public's primary needs and the organisation's preparation for the crisis (Marsen, 2020). However, in the wake of the pandemic, the Ministry of Health and the Ministry of Education of the Kingdom shape crisis communication in an inclusive way by creating the grammar of collectivism, like using the plural noun, in their crisis communication. Therefore, I believe that the crisis information, if handled successfully, can help the public in an impactful manner. For instance, it is evident from the above analysis that both Ministries ensure that the public receives accurate and timely information about the crisis. By communicating emphatically, openly, and transparently, government authorities could develop an active relationship with the public. Moreover, the government authorities also provide reassurance to the public by acknowledging their efforts and sufferings. Lastly, it is seen that both ministries empower the public by providing them the knowledge needed to protect themselves during the crisis.

It is noteworthy that tweets denoting the theme of reassurance could help to bolster the trust between the government and the public. For instance, on this tweet of the MoH:

*We thank our people from the heart. Peace and blessings of Allah be upon you, (*02/12/20, MoH 22).
 most people responded with 'Thank you' or 'Thanks for keeping us updated'. Such reassurance tweets on the part of the government convey the government's acknowledgment of the public's struggle which could foster a sense of connection between the government and the public. I argue that reassurance tweets are significant because they aim to strengthen the coping mechanism of readers by acknowledging the public's "hardship,

appreciating their efforts" and communicating that they are all together in this crisis (Jain et al., 2021, p. 8). Many tweets posted by the Ministry of Health and Ministry of Education express empathy, and gratefulness, provide clear guidelines and policies, and seek to boost people's morale by praising their efforts and showing trust in their abilities in dealing with crises (for instance, tweet ID 57 of MoH, Many thanks to colleagues, academic institutions, and government agencies for providing injured people with medical care, housing, logistical health insulation, and support for national duty and public for their corporation in following instructions. described above under the section on morale boosting tweets).

Further, both ministries also try to communicate that we need to fight the pandemic collectively, therefore, they create a shared perception of the crisis. This is evident in the commonly used hashtags. The most common hashtags used by both Ministries throughout the pandemic duration are #AllofUs, #WeareallTogether, #COVID-19, #Coronavirus, #pandemic, #remoteteaching, #remotelearning, and #StaySafe. Among these, "#allofus, and #weamalltogether emphasize collectivism, reinforcing the idea that combating the pandemic requires collective effort. The other commonly used hashtags focused on the broader context of the pandemic, like safety measures, and remote adaptation. These hashtags reinforce the idea that a pandemic needs to be fought collectively and it needs cumulative effort. The use of inclusive language throughout the crisis is another interesting factor in these tweets. Using 'we', 'our', and 'they' not only show the government's effort to acknowledge all but also aims to promote a shared purpose and to build community resilience. The use of inclusive language keeps on increasing as the pandemic reaches its peak. For instance, I can see that more inclusive language is used in the tweets posted during the breakout stage (16 tweets on the MoH page have inclusive language) in comparison to the prodromal stage (only 4 tweets on the MoH page have inclusive language).

Crisis management has always been considered as something related to policy briefings, making quick actions, and managing technical aspects of the crisis (Marsen, 2020). However, the Covid-19 health crisis takes crisis management to a whole new level. We could argue that Covid-19 is the first health crisis that is digitally explained and discussed by experts and stakeholders directly. Considering the unique nature of this crisis, the biggest challenge for the stakeholders is to persuade the public to alter their behaviour to follow the new rules. My research emphasises that the X platform works as a rhetorical space for crisis communication between the government and the public. My analysis of the selected X corpora suggests that the Ministry of Health and the Ministry of Education use the X platform strategically not only to make announcements regarding the pandemic but also to

mobilize resources, and to manage the expectations of the public. Such functions are quite significant during the crisis because government agencies are normally expected to respond to the rising situation effectively and to engage with the public simultaneously (Graham et al., 2015). The positive tilt found in tweets posted by Saudi government officials (e.g., ID 2, 17, 43 on the MoH page) creates a balanced environment to lessen the panic and distress caused by Covid-19. The analysis reveals the strategic choices made by Saudi institutions to use a positive frame to encourage their followers that the crisis can be overcome.

My research supports Coombs' (2007) viewpoint that crisis communication should address the psychological needs of people, and anxiety caused by the uncertain scenario of the crisis. Kim and Liu (2012) refer to it as adjusting the crisis information as messages that could express compassion, sympathy, and empathy for the victims and could also denote the corrective actions taken by the governmental organisations to deal with the crisis. My study finds that both ministries are not just expressing empathy in their tweets but predominantly tweeted regarding the precautionary measures, situational information, policy briefing, guidelines, morale-boosting, etc (e.g., ID 8, 14, 30 on MoH page, and ID 39, 45 on MoE page). The analysis of the selected tweets suggested that both organisations tried their best to build a community of trust and called for the action of common interest. The initial stage of a crisis includes defining the situation and explaining a situation (Bundy et al., 2017). The initial tweets posted by the ministries seem like configuring the situation by expressing a level of control through preparatory tweets and expressions of sorrow (e.g., ID 14, 23, and 39 on the MoH page, ID 1, 3, and 4 on MoE page). Throughout the crisis, the government tweets include strategic content. However, there is more strategic content at the beginning that calls for specific action. The interesting aspect of strategic content is that Saudi government officials call for collective action that is eventually individually specified and could collectively save the nation. for example, hashtags like #weareallresponsible, #wearetogether foster a sense of unity but they are normally paired with instructions directed at individuals such as wear a mask, keep a distance, and stay home, etc. this strategy frames pandemic as national duty while emphasizing it needs an individual effort and compliance.

The uncertain scenario of the covid-19 pandemic calls for coordinated actions between the government and the public because of the sudden lockdown and various strict measures. Moreover, the ever-changing nature of the situation demands new policies and guidelines instantly. Given this, government officials need to communicate actively and efficiently about their actions to keep the public aware of how they are managing the crisis.

In this regard, the government's key officials' proactiveness has emerged as a delectable competency in times of crisis. Previously, crisis management was mainly considered to protect the reputational asset of any organisation, thus crisis communication mainly focuses on reputational management (Coombs, 2007). However, my study highlights the way messages or tweets posted by both ministries have a positive impact on the public and could develop the trust relationship between the government and the public. Those tweets also possibly bolster the reputation of both institutions through engagements (two-way communications, responding to the public and addressing their concerns), and the way they are managing the crisis via effective crisis communication.

6.2.2 Influence of Severity of Crisis

The number of tweets increased drastically as the severity of the crisis increased. The severity of the crisis is measured by the number of cases, the fast spreading of the coronavirus in different areas, increasing economic pressures and difficulties due to the lockdown, and the number of deaths. A study conducted on crisis communication during the pandemic in India showed that the number of tweets by government stakeholders went down with the severity of the crisis (Jain et al., 2021). Jain et al. (2021) argue that in India, stakeholders or official authorities posted many tweets at the beginning of the pandemic since it was a novel phenomenon, and the frequency went down gradually. In contrast to India, in the case of Saudi Arabia, I find that official authorities take crisis communication quite seriously with the passage of time. The nature of tweets during peak times is diverse. One can see multiple tweets in a single day (from the overall population). (The nature of those tweets is diverse; some record the number of new cases, number of deaths, and recovery number, while other tweets report about the high risked area. It is noteworthy that both organisations considered the crisis information as crucial to building the trust of the public in their government. Therefore, we cannot see any interruption in the crisis information during the whole time of the pandemic. Interestingly, even though when the threat of the pandemic went down, the ministry accounts keep reminding people about the Covid-19 guideline as evidenced in a tweet posted of November 2020:
"Distancing matters. Keep 1-meter distance", MoH 67.

Lastly, my analysis indicates that different types of messages received different levels of engagement as the crisis evolved. During the pre-crisis stages, the public showed much interest in News and updates messages as shown in the high level of public engagement in the form of likes, comments, and retweets (for example, ID 37 on MoH page). During the outbreak stage, the public showed much interest in the call-to-action messages as indicated

in the level of public engagement (for example, ID 13 on MoH page). However, the reassurance messages dominated in the resolution phase.

6.2.3 Government's Strategies for countering Misinformation

The Covid-19 pandemic presents manifold challenges to human beings not only in terms of health but in many other facets. Unlike other global challenges (e.g., natural disasters), the impact of the Covid-19 pandemic does not depend only on an individual's action but also depends upon the quality of information to which the public is exposed. Unfortunately, misinformation related to the Covid-19 proliferated widely on social media (Frenkel et al., 2020; Russonello, 2020).

The research conducted by Pennycook and his colleagues (2020) argues that misinformation regarding the pandemic comes in many forms. From conspiracy theories (like the virus as a biological weapon prepared in a Chinese lab) to the claims that the virus can be killed or controlled by coconut oil. Such kind of misinformation "may cause people to turn to ineffective (and potentially harmful) remedies, as well as to either overreact (e.g. by hoarding goods) or, more dangerously, underreact (e.g. by engaging in risky behaviour and inadvertently spreading the virus)" (Pennycook et al., 2020, p. 770). Therefore, it is important for the government stakeholders to counter misinformation. Another study by Wang et al. (2022) argues that the misinformation or disinformation related to the Covid-19 pandemic spread in society from the top down and bottom up. Their studies identified prominent public figures, celebrities, and politicians who contributed to spreading the misinformation (top-down) along with the public (bottom-up) who are also substantially engaged in manufacturing the disinformation. Considering this, Wang et al. (2022) suggested that to tackle such infodemics top-down and bottom-up strategies are required. However, the situation in the Kingdom of Saudi Arabia was different during the pandemic. It is argued that in the kingdom misinformation was mostly coming from the public (bottom-up) which was countered strategically by government stakeholders (top-down).

Although many argue that social media provides a fertile ground to spread misinformation (Caceres et al., 2022; Muhammed & Mathew, 2022), it also plays a significant role in combatting misinformation. For instance, one important factor of both institutions is the way they combat infodemics. Since this was a time of panic, I can see that many tweets from authorities counter the false information or rumours spreading in society. The government frequently starts posting tweets Almost every fifth tweet combats the rumours regarding Covid-19 spreading among the public as discussed above. The government authorities make it clear in many tweets that

The right information is only available on official platforms, (05/09/2020, MoE 44).

On another occasion, a tweet said that

*the Ministry of Health is not forwarding any messages on the WhatsApp group. All information on the new coronavirus variant was issued by the account of the official ministry the Saudi News Agency and the daily press conference only, (*21/06/2020, MoH 76*).*

They also make it clear that

*we are updating our policies on our X page instantly. (*20/08/2020, MoH 80).

The stress is given on the words 'only' and the 'right information' to show that these are only credible sources of information. The linguistic choice here is a strategic effort to reinforce the trust on official communication. By framing their updates as definitive resources, the government officials here do not aim to mitigate the spread of misinformation, but it can also be seen as their effort to control the narratives. It is an established fact that humans crave information specifically in an uncertain situation like a pandemic (Lovejoy & Saxton, 2012), therefore, government officials ensure the public that the information will be available instantly on their X pages. The above tweets could also be read as the government's effort to drive the public to official information regarding the pandemic so that they could only get the trusted news. These tweets illustrate the government's strategy for combating the misinformation associated with the pandemic.

Given this context, it is argued that Saudi government official authorities fought an infodemic via X at a time when the doctor was fighting the epidemic. There was a lot of noise regarding the coronavirus situation among the public. However, government officials in Saudi Arabia update the public without delays, filtering, and potential misinterpretation introduced by intermediaries about the evolving situation of the pandemic, and about their latest medical and policy options. The upshot is that in the age of Covid-19, X has become a source of giving news about cases and hospitalisations. Much of the data regarding Covid-19 used to be published first on X and only thereafter, we see that data on traditional media channels, for example, radio, television, and newspaper. Instead of posting emotional content, the government authorities mostly communicate facts, calls for action, and reassure the public in their tweets. Despite the difficulties that the Government was facing on many fronts,

government authorities posted tweets that were positively balanced. Many tweets work to strengthen followers' trust and resilience.

6.2.4 Consistency and Congruence of Tweets

Another interesting aspect noticed in the selected tweets is consistency and congruence. Both consistency and congruence are the key factors to effective communication as Seeger (2020) notes. Consistency can be defined as "the similarity between the tone of the message and the information contained therein" (Glik, 2007, p. 38). This could be taken as to stress that the attitude of tweets remains similar over time. Congruence, on the other hand, implies that all government stakeholders have settled on a unifying and single interpretation of crisis and risk (Glik, 2007, p.39). This is visible in the crisis communication that happened via the X platform of both selected institutions. During the timeframe of the pandemic, the Ministry of Health, and the Ministry of Education both posted similar information regarding coronavirus risks and threats. I could not find any disparity or conflicting attitude in tweets posted by the Ministry of Health and the Ministry of Education.

I identify four critical points, which I would call preventive strategies (wearing masks, social distancing, staying at home, and self-quarantine) that could significantly impact any individual's behaviour. I argue that these four critical points would help me to check the congruence and consistency of the selected tweets. Owing to this effective strategy Saudi government officials could help in building public compliance. This is perhaps one of the reasons that the general Saudi public believes in the communication posted by government officials on their X pages. Research in communication related to health warnings suggests that message incongruence may cause confusion among the public (Lochbuehler et al., 2018). This can lead to the ignoring of recommended protocols like physical distancing, and self-quarantine on the one end of the spectrum to panic buying and aggression (Wang et al., 2021). All of these could have an adverse effect on the medical systems, social systems, and economic systems of the country. The consistency and congruence in the tweets posted by selected Saudi institutions suggest that there is strong coordination between government agencies and its digital officers and therefore, they could manage the crisis communication well.

6.3 Theoretical and practical Implications of Results

6.3.1 Theoretical Implications

The integration of Fairclough's CDA model into this study offers important theoretical insights into the discursive construction of public crisis communication in a non-Western context. It illustrates how Saudi ministries did not merely inform but also shaped the social reality of the pandemic through language. By analysing the experiential, relational, and expressive values of linguistic features in the tweets, the study highlights how discourse is used to encode institutional power, foster public trust, and align with cultural expectations. This underscores the importance of contextualising crisis communication strategies within the socio-political fabric of a society, challenging the universality of Western communication models and reinforcing the need for culturally nuanced approaches.

This study makes a significant theoretical contribution by proposing a contextual refinement of the Crisis and Emergency Risk Communication (CERC) model, specifically tailored to the socio-cultural and institutional context of the Kingdom of Saudi Arabia during the Covid-19 pandemic. Through the application and critical examination of this predominantly Western framework in a non-Western setting, the research demonstrates the need for cultural and contextual adaptation of existing crisis communication models.

By analysing how the Ministry of Health and Ministry of Education communicated during different stages of the pandemic, the study reveals that public engagement did not always align neatly with the linear stages prescribed by the original CERC model. While the ministries did begin by disseminating risk-related and precautionary messages during the prodromal phases predicted by the model patterns of public engagement shifted dynamically. For example, news and updates garnered higher engagement during the early stages, whereas call-to-action messages became more prominent in later stages. These findings suggest that the public's responses are not strictly sequential, calling for a more adaptive and cyclical approach within the CERC framework.

Moreover, the research highlights the importance of incorporating culturally specific elements such as religious appeals and collectivist values into crisis messaging. In Saudi Arabia, these elements played a central role in enhancing message credibility, public trust, and engagement. This underscores a theoretical gap in the CERC model's universal applicability and suggests that future iterations should explicitly account for cultural variance in communication strategies. Thus, this study contributes to the cross-cultural expansion of the CERC model by emphasizing the necessity of flexibility and cultural sensitivity in crisis

communication. It advocates for a more nuanced and dynamic understanding of public engagement and message effectiveness, which can inform both future theoretical developments and practical crisis management in culturally diverse contexts.

Finally, this study underscores the need to conceptualize crisis communication as an interactional process, rather than a top-down, linear dissemination of information. The dynamic patterns of audience engagement observed shaped by emotional tone, language choices, and cultural framing support the argument for integrating audience reception theory and participatory communication models into the CERC framework. This would position publics not merely as passive recipients but as active interpreters and co-constructors of crisis meaning. Such a shift expands the theoretical lens through which crisis communication is viewed and opens new pathways for interdisciplinary inquiry, including work in media studies, sociology, and cultural communication.

6.3.2 Recommendations for practice

Recommendation 1: Proactive Crisis Communication is needed

The study results highlight the critical role of timing in crisis communication. The findings demonstrate that health authorities promptly initiated communication as soon as the pandemic emerged in the Kingdom, indicating a recognition of the importance of timely information dissemination. Moreover, there was a substantial increase in communication during the breakout and Peak of the spread Stage s of the pandemic, indicating a heightened sense of urgency and the need for continuous updates and guidance. This suggests that health authorities were responsive to the evolving situation and demonstrated appropriate preparedness in their risk communication strategies.

While it is challenging to predict the occurrence of specific health emergencies, public health authorities have long acknowledged the potential for such events to arise. The global response to the Covid-19 pandemic, despite the lessons learned from previous outbreaks such as the Ebola crisis, reveals a certain degree of unpreparedness (Smith & Upshur, 2020). Consequently, it is imperative for health authorities to proactively prepare for future health crises by developing comprehensive risk communication plans. These plans should incorporate evidence-based strategies and communication-specific approaches to effectively address the unique challenges posed by crisis situations. The adoption of a social media model for risk communication is one proactive measure that can enhance crisis response capabilities. Platforms like X enable the rapid dissemination of information directly to a wide audience, facilitating real-time updates and ensuring that accurate and reliable

information reaches the public in a timely manner. Retweeting public health messages can amplify organically the reach and impact of critical information during crises (Vos et al., 2018). Moreover, this research highlights the importance of using local cultural elements in crisis communication. Using cultural elements, for instance, the use of collectivism and religious appeal in the context of this research is helpful not only in informing people but also in provoking them to action. The study suggests that the use of local cultural elements is effective in crisis management.

Recommendation 2: Integrating Local Cultural Elements into Crisis Communication Strategies

This study highlights the pivotal role of local cultural elements particularly religious appeals and collectivist values in shaping effective crisis communication within Saudi Arabia. Messages that incorporate religious language or emphasize communal responsibility have been shown to resonate deeply with the Saudi public, leading to increased engagement and compliance. For instance, the use of religious references and collective terms like "all of us" in public health campaigns has been associated with heightened public responsiveness.

In the Saudi context, where collectivism is a dominant social value and religion permeates daily life, tailoring messages to reflect these cultural priorities significantly enhances their effectiveness. This is also supported by studies indicating that communication strategies aligning with cultural and religious values foster greater trust and adherence among the populace (Khasawneh, 2023).

Therefore, it is recommended that crisis communication strategies in similar non-Western, culturally embedded settings prioritize the inclusion of locally relevant narratives. This entails using culturally appropriate metaphors, religious or spiritual references where suitable, and language that emphasizes communal solidarity and mutual responsibility. Such culturally congruent strategies not only improve message clarity but also build trust, a critical component in public health compliance and risk mitigation.

Policymakers, crisis communicators, and health authorities are encouraged to collaborate with cultural experts and local stakeholders in designing communication strategies. This collaboration ensures that crisis messages are not only linguistically accessible but also emotionally and culturally resonant, thereby enhancing their effectiveness during emergencies.

Recommendation 3: use of diverse languages is required in Crisis Communication

My research findings highlight the importance of equity in crisis communication, particularly in terms of language accessibility. While most analysed tweets were in Arabic, some posts were in English, Urdu, Bengali, French on the selected ministries' pages. However, there is a need to extend language accessibility beyond social media platforms in health communication strategies. As a Saudi researcher, I am aware that our government uses different languages when communicating risks on social media, but there is a lack of mechanisms for diverse languages in our health units. Existing literature on crisis communication also emphasises the importance of collaboration with cultural groups in developing risk communication strategies (Macnamara, 2021).

It is important to recognise that marginalized communities may have limited or no access to the internet, resulting in their lack of awareness regarding crisis communication efforts conducted online. In such cases, health authorities need to explore alternative methods to reach out to marginalized communities and ensure they are informed about ongoing crises and risks. Furthermore, as suggested by previous research conducted by Robinson et al. (2020), providing subsidies for social media policies targeting disadvantaged populations, such as providing health information for these populations in online spaces, would be beneficial. Addressing language accessibility, cultural adaptation, and reaching marginalized communities are essential steps in achieving equitable crisis communication. By developing strategies that consider these factors, health authorities can ensure that their messages effectively reach and resonate with all segments of the population, particularly those most affected by crises and risks.

6.4 Limitation of my Research

The present study has several limitations that warrant discussion. Firstly, the analysis is confined to a one-year sample of X data pertaining to the Covid-19 pandemic. Given the ongoing nature of the pandemic and its evolving dynamics, the selected data may not capture the entirety of crisis communication related to the pandemic. This study examines the crisis communication efforts of two specific ministries, namely the MOH and the MOE. A more comprehensive investigation could involve a broader range of ministries to better understand crisis communication strategies across various government entities. Still, these two ministries were most relevant to the crisis which was the focus of this study.

Furthermore, relying on X as this study's primary data source introduces potential biases. X users are not representative of the entire population, as the platform attracts a specific demographic with particular interests and behaviours. This could result in a limited representation of crisis communication and public engagement during the Covid-19 pandemic. However, X is still a widely adopted platform in SA and its strategic use by Saudi government agencies is of practical importance for the field of strategic communication in the region.

Furthermore, it is important to acknowledge that the translation of Arabic tweets into English introduces the possibility of meaning loss or alteration. The nuances and cultural context embedded in the original Arabic tweets may not be fully captured in the translated versions, potentially affecting the interpretation of the data. To address this limitation, efforts were made to preserve the meaning of each post and bi-directional translation (forward and backward) was employed to assure as much accuracy as possible. Despite the risk of loss of meaning through the translation of posts, the advantages of studying tweets in language beyond English are immense and they more than offset the possible drawbacks.

Finally, this study focuses exclusively on the textual content of the tweets and does not consider images or videos. The inclusion of these additional dimensions could provide further insights into the communication strategies employed during the pandemic. A follow-up study could focus its attention on non-textual formats of presentation and compare its findings to the current one.

6.5 Strengths of My Research

This study holds several strengths that contribute to the advancement of knowledge in the field of crisis and risk communication during the Covid-19 pandemic. Firstly, it is important to highlight that this study is the first of its kind, providing a comprehensive qualitative analysis of crisis communication on the X pages of the MOH and the MOE of SA. This research fills a crucial gap in the literature, as previous studies have predominantly focused on quantitative analyses or have not specifically examined crisis communication during the Covid-19 pandemic on these platforms.

This study's use of thematic analysis, and discourse analysis, provides a nuanced understanding of the communication strategies employed by the MOH and the MOE on X. These analytical approaches enhance the depth and richness of the findings, shedding light on the various themes and discursive strategies employed in crisis communication during the pandemic. The insights derived from this analysis hold practical implications for the

Saudi government and organisations such as the World Health Organisation (WHO), which can benefit from the lessons learned and best practices identified in this study.

The application of thematic analysis in the examination and categorisation of individual tweets has allowed for the identification of new themes not previously explored in the existing literature. Lastly, a notable key strength of my study is its focus on non-western perspective – something often underrepresented in crisis communication. By examining communication strategies of Saudi ministries, this research provides insight of how cultural and religion – like the emphasis on collectivism and religious appeals – shape public perceptions and behaviour during times of crisis. This contributes to the inclusive understanding of the crisis communication while highlighting the importance of localized approach during crisis.

6.6 Recommendations for Further studies

Future research endeavours could build upon the foundations laid by this study to further enhance our understanding of crisis communication in public health emergencies. One potential avenue for exploration is conducting a similar study on PR communications during previous outbreaks such as Ebola, Zika, or other significant health-related crises. By comparing crisis communication strategies employed during different pandemics, a comprehensive crisis or risk communication model could be developed, providing valuable insights for future response efforts.

Expanding the time frame of the study is another recommendation for future research. While this study focused on crisis communication during the Covid-19 pandemic within a specific time frame, extending the analysis to cover a longer duration would allow for a more comprehensive understanding of how crisis communication has evolved over time. Examining the development and adaptation of crisis communication strategies throughout the course of the pandemic could offer valuable insights into the effectiveness of different approaches and provide guidance for future crisis communication efforts.

In addition, future studies could explore the utilisation of metadata and incorporate tweets that contain links and images to gain a deeper understanding of crisis or risk communication. By analysing these additional elements, researchers can gain insights into how visual and multimedia content are employed in crisis communication and how external resources and references are shared to support the dissemination of information. Furthermore, it is worth considering the perspectives of different stakeholders involved in crisis communication, including government officials, healthcare professionals, and the

public. Examining the dynamics of communication between these stakeholders and analysing their respective roles and responsibilities could provide a comprehensive view of crisis communication processes and inform the development of more effective strategies.

Within the selected timeframe, there is a need for further research to provide a comprehensive understanding of the longitudinal evolution of risk and crisis communication during the pandemic. Additionally, a comparative study of risk communication on social media platforms, specifically X, across multiple countries would be beneficial in developing a comprehensive risk communication model for emergency situations such as pandemics. This would enable a broader perspective on the effectiveness of different approaches and strategies employed by various nations in managing crises and communicating with the public. In light of these findings, it is suggested that a mixed research method incorporating content analysis could offer even more insights and understanding by providing a broader and more generalisable picture of the communication patterns.

References

Abdelhay, N. (2014). *Public relations practice in the Kingdom of Saudi Arabia and the United Arab Emirates: western theory, local culture* University of West London].

Abdulghafour, P. K. (2009). *Islam calls for professionalism, says scholar* www.arabnews.com/node/323678

Abdullah, A., & Ahmad, J. (2022). Public Relations Education in Saudi Arabia: An Overview of Educators' and Practitioners' Perspectives. *International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies*, *13*(9), 1-13.

Abdullah, M. F. (2004). Professionalism: The Islamic Perspective. *Jurutera: The Monthly Bulletin of the Institution of Engineers, Malaysia*, 9-11.

Abozayd, F. (2007). *Introduction to journalism [in Arabic]*. Alam Alkotob Publisher.

ACTIVE PR. (2012). *The relationship between PR practitioners and journalists in Saudi Arabia* http://www.activepr.biz/blog/the-relationship-between-pr-practitioners-and-journalists-in-saudi-arabia/

Afifi, R. Y. (2007). Biomedical research ethics: An Islamic view part II. In (Vol. 5, pp. 381-383): Elsevier.

Al Akeel, M. M., Al Ghamdi, W. M., Al Habib, S., Koshm, M., & Al Otaibi, F. (2018). Herbal medicines: Saudi population knowledge, attitude, and practice at a glance. *Journal of Family Medicine and Primary Care*, *7*(5), 865.

Al Fraihi, K. J., FAMCO, D., & Latif, S. A. (2016). Evaluation of outpatient service quality in Eastern Saudi Arabia: Patient's expectations and perceptions. *Saudi medical journal*, *37*(4), 420.

Al Saud, A. A., & Khan, M. R. (2013). Role of social media in brand development in Saudi Arabia. *European Journal of Business and Economics*, *8*(1).

Al Yousuf, M., Akerele, T., & Al Mazrou, Y. (2002). Organization of the Saudi health system. *EMHJ-Eastern Mediterranean Health Journal, 8 (4-5), 645-653, 2002*.

Alahdal, H., Basingab, F., & Alotaibi, R. (2020). An analytical study on the awareness, attitude and practice during the COVID-19 pandemic in Riyadh, Saudi Arabia. *Journal of infection and public health*, *13*(10), 1446-1452.

Al-Ahmed, M. S. (1987). *Mass media and society: The six normative theories and the role of social, political and economic forces in shaping media institution and content: Saudi Arabia-a case study*. University of Leicester (United Kingdom).

Alanazi, A. (1996). PR in the Middle East: The case of Saudi Arabia. . In L. H. Grunig (Ed.), *International PR: A comparative analysis* (pp. 239-256). Lawrence Erlbaum Associates.

Alanazi, A. (2013). Public relations in the Middle East: the case of Saudi Arabia. In *International Public Relations* (pp. 239-256). Routledge.

Alanzi, T., & Alsaeed, B. (2019). Use of social media in the blood donation process in Saudi Arabia. *Journal of Blood Medicine*, 417-423.

Alasiri, A. A., & Mohammed, V. (2022). Healthcare transformation in Saudi Arabia: an overview since the launch of vision 2030. *Health services insights*, *15*, 11786329221121214.

Aldarhami, A., Bazaid, A. S., Althomali, O. W., & Binsaleh, N. K. (2020). Public perceptions and commitment to social distancing "staying-at-home" during COVID-19 pandemic: a national survey in Saudi Arabia. *International Journal of General Medicine*, 677-686.

Al-Dorzi, H. M., Aldawood, A. S., Khan, R., Baharoon, S., Alchin, J. D., Matroud, A. A., Al Johany, S. M., Balkhy, H. H., & Arabi, Y. M. (2016). The critical care response to a hospital outbreak of Middle East respiratory syndrome coronavirus (MERS-CoV) infection: an observational study. *Annals of intensive care*, *6*(1), 1-11.

Al-Dubaikhi, A. (2013). The reality of women's public relations in Saudi Arabia: An empirical study on government institutions in Riyadh. *Public Relations & Advertising Periodical Magazine*, *2*, 91-112.

Algaissi, A. A., Alharbi, N. K., Hassanain, M., & Hashem, A. M. (2020). Preparedness and response to COVID-19 in Saudi Arabia: Building on MERS experience. *Journal of infection and public health*, *13*(6), 834-838.

Alhajri, W., & Pierce, B. J. (2023). Saudi Women's Attitudes Toward Advocacy for Women's Rights. *Affilia*, *38*(1), 111-126.

Alhamamy, S. (2022). *The Use of Social Media by PR Practitioners and Organizations in Saudi Arabia* University of East London].

Alhassan, F. M., & AlDossary, S. A. (2021). The Saudi Ministry of Health's Twitter communication strategies and public engagement during the COVID-19 pandemic: content analysis study. *JMIR public health and surveillance*, *7*(7), e27942.

Ali, A. Y. (2006). *The Meaning of the Holy Qur'an*. Amana Publications.

Ali, S. H., Foreman, J., Tozan, Y., Capasso, A., Jones, A. M., & DiClemente, R. J. (2020). Trends and predictors of COVID-19 information sources and their relationship with knowledge and beliefs related to the pandemic: nationwide cross-sectional study. *JMIR public health and surveillance*, *6*(4), e21071.

Aljaber, A. (2018). E-learning policy in Saudi Arabia: Challenges and successes. *Research in comparative and international education*, *13*(1), 176-194.

Aljameel, S. S., Alabbad, D. A., Alzahrani, N. A., Alqarni, S. M., Alamoudi, F. A., Babili, L. M., ... & Alshamrani, F. M. (2021). A sentiment analysis approach to predict an

individual's awareness of the precautionary procedures to prevent COVID-19 outbreaks in Saudi Arabia. *International journal of environmental research and public health*, *18*(1), 218.

Al-Jaralh, M. (2011). The efforts of public relations departments in facing the crises: A field study on the privet companies in Saudi Arabia. *Saudi association for public relations and advertisement*, *1*, 69-91.

Al-Jenaibi, B. (2016). The Twitter revolution in the Gulf countries. *Journal of Creative Communications*, *11*(1), 61-83.

Alkadi, B. (2007). *The effect of terrorism on public relations practice at Saudi Arabian ministries* Master dissertation. University of Westminster].

Al-Khani, A. M., Khalifa, M. A., Almazrou, A., & Saquib, N. (2020). The SARS-CoV-2 pandemic course in Saudi Arabia: A dynamic epidemiological model. *Infectious Disease Modelling*, *5*, 766-771.

Almahraj, Y. (2017). *The profession of public relations in Saudi Arabia: A socio-cultural perspective* Queen Margaret University, Edinburgh].

Almahraj, Y. A. (2019). Public relations in Saudi Arabia: An Islamic perspective. In *Public Relations in the Gulf Cooperation Council Countries* (pp. 98-117). Routledge.

Almalki, M., FitzGerald, G., & Clark, M. (2011). Health care system in Saudi Arabia: an overview. *EMHJ-Eastern Mediterranean Health Journal, 17 (10), 784-793, 2011*.

Al-Mayman, H. (2020, September 6). Saudi e-learning portal ushers in 'new normal' with virtual classrooms. *Arab News.*

Almuzaini, Y., Mushi, A., Aburas, A., Yassin, Y., Alamri, F., Alahmari, A., Yezli, S., Khan, A. A., & Jokhdar, H. A. (2021). Risk communication effectiveness during COVID-19 pandemic among general population in Saudi Arabia. *Risk Management and Healthcare Policy*, 779-790.

Alnasser, A. H. A., Al-Tawfiq, J. A., Al Kalif, M. S. H., Alobaysi, A. M. A., Al Mubarak, M. H. M., Alturki, H. N. H., Alharbi, A. A. A., Albahrani, R. S. S., Sultan, S., & AlHamad, A. R. N. (2020). The positive impact of social media on the level of COVID-19 awareness in Saudi Arabia: a web-based cross-sectional survey. *Infez Med*, *28*(4), 545-550.

Alnemer, K., Al-Homood, I., Alnemer, A., Alshaikh, O., Alsaidan, M., & Alzahrani, A. (2015). A multicenter study of factors affecting patient's satisfaction visiting primary health care clinics in Riyadh, Saudi Arabia. *Fam Med Med Sci Res*, *4*(169), 1-4.

Alotiby, A. (2021). The impact of media on public health awareness concerning the use of natural remedies against the COVID-19 outbreak in Saudi Arabia. *International Journal of General Medicine*, 3145-3152.

Alqurashi, H. S., & Assulaimani, T. (2021). The Effect of Classroom Management in Oral Communication and Willingness to Communicate: A Case Study of Saudi Learners of English as Foreign Language. *Applied Linguistics Research Journal*, *5*(2), 73-84.

Al-Rabiah. (2020). Al-Rabiah Highlights Updates of Transformation Programs and Initiatives. *MINISTRY OF HEALTH OF SAUDI ARABIA*. https://www.moh.gov.sa/en/Ministry/MediaCenter/News/Pages/News-2019-09-10-003.aspx

Al-Rasheed, M. (2019). *Societal transformation and the influence of Islam in Saudi Arabia*.

Al-Rasheed, M. (2021). *The Son King: Reform and Repression in Saudi Arabia*. Oxford University Press.

Al-Saggaf, Y. (2004). The effect of online community on offline community in Saudi Arabia. *The electronic journal of information systems in developing countries*, *16*(1), 1-16.

Al-Saleh, H. (2021). *Modern Public Relations in Saudi Arabia: Navigating cultural and corporate terrains*.

Alsuraihi, A. K., Almaqati, A. S., Abughanim, S. A., & Jastaniah, N. A. (2016). Use of social media in education among medical students in Saudi Arabia. *Korean journal of medical education*, *28*(4), 343.

Al-Tawfiq, J. A., & Memish, Z. A. (2020). COVID-19 in the Eastern Mediterranean Region and Saudi Arabia: prevention and therapeutic strategies. *International Journal of Antimicrobial Agents*, *55*(5), 105968.

Alyoussef, I. Y., Alamri, M. M., & Al-Rahmi, W. M. (2019). Social media use (SMU) for teaching and learning in Saudi Arabia. *Int. J. Recent Technol. Eng*, *8*, 942-946.

Andrews, T. (2012). What is social constructionism? *Grounded theory review*, *11*(1).

Ang, L., Lee, H. W., Choi, J. Y., Zhang, J., & Lee, M. S. (2020). Herbal medicine and pattern identification for treating COVID-19: a rapid review of guidelines. *Integrative medicine research*, *9*(2), 100407.

Arab News. (2013). *Experts discuss future strategies at 4th PR forum* https://www.arabnews.com/corporate-news/experts-discuss-future-strategies-4th-pr-forum

Arendt, C., LaFleche, M., & Limperopulos, M. A. (2017). A qualitative meta-analysis of apologia, image repair, and crisis communication: Implications for theory and practice. *Public Relations Review*, *43*(3), 517-526.

Arpan, L. M. (2002). When in Rome? The effects of spokesperson ethnicity on audience evaluation of crisis communication. *The Journal of Business Communication (1973)*, *39*(3), 314-339.

Arpan, L. M., & Pompper, D. (2003). Stormy weather: Testing "stealing thunder" as a crisis communication strategy to improve communication flow between organizations and journalists. *Public Relations Review*, *29*(3), 291-308.

Askool, S. (2012). An Investigation of Social Media Use in Saudi Arabia. WEBIST,

Ataguba, O. A., & Ataguba, J. E. (2020). Social determinants of health: the role of effective communication in the COVID-19 pandemic in developing countries. *Global health action*, *13*(1), 1788263.

Athique, A. (2020). <? covid19?> Extraordinary issue: Coronavirus, crisis and communication. In (Vol. 177, pp. 3-11): Sage Publications Sage UK: London, England.

Avery, E. J., Lariscy, R. W., Kim, S., & Hocke, T. (2010). A quantitative review of crisis communication research in public relations from 1991 to 2009. *Public Relations Review*, *36*(2), 190-192.

Badell-Grau, R. A., Cuff, J. P., Kelly, B. P., Waller-Evans, H., & Lloyd-Evans, E. (2020). Investigating the prevalence of reactive online searching in the COVID-19 pandemic: infoveillance study. *Journal of medical Internet research*, *22*(10), e19791.

Bagherpour, A., & Nouri, A. (2020). COVID misinformation is killing people. *Scientific American*, *11*.

Bajouk, H., & Ferré-Pavia, C. (2023). Government Social Media Engagement and Health Perceptions During the COVID-19 Crisis: A Cross-Sectional Study. *International Journal of Strategic Communication*, *17*(5), 457-474.

Baron, J., Hershey, J. C., & Kunreuther, H. (2000). Determinants of priority for risk reduction: The role of worry. *Risk analysis*, *20*(4), 413-428.

Barton, L. (2001). Crisis in organizations II, college division's south-western. *South-Western College Pub: Cincinati, OH, USA*.

Barton, L.. (2010). *Crisis in organizations II*. Sage Publications.

Bavel, J. J. V., Baicker, K., Boggio, P. S., Capraro, V., Cichocka, A., Cikara, M., Crockett, M. J., Crum, A. J., Douglas, K. M., & Druckman, J. N. (2020). Using social and behavioural science to support COVID-19 pandemic response. *Nature human behaviour*, *4*(5), 460-471.

BBC Trending. (2014, 2014, January). Why X is so Big in Saudi Arabia. https://www.bbc.co.uk/news/blogs-trending-25864558

Ben Ltaifa, M., & Derbali, A. M. S. (2022). The Importance of Social Networks in Enhancing the Dimensions of Citizenship among Students in Saudi Arabia. *Education Research International*, *2022*.

Benach, J. (2021). We must take advantage of this pandemic to make a radical social change: the coronavirus as a global health, inequality, and eco-social problem. *International Journal of Health Services*, *51*(1), 50-54.

Beninger, K., Fry, A., Jago, N., Lepps, H., Nass, L., & Silvester, H. (2014). Research using social media; users' views. *NatCen Social Research*, *20*.

Benkouiten, S., Al-Tawfiq, J. A., Memish, Z. A., Albarrak, A., & Gautret, P. (2019). Clinical respiratory infections and pneumonia during the Hajj pilgrimage: A systematic review. *Travel medicine and infectious disease*, *28*, 15-26.

Bennett, L. V., & Manoharan, A. P. (2017). The use of social media policies by US municipalities. *International Journal of Public Administration*, *40*(4), 317-328.

Benoit, W. (1995). A theory of image restoration. *Accounts, excuses, and apologies: A theory of image restoration discourse*, 63-98.

Berbekova, A., Uysal, M., & Assaf, A. G. (2021). A thematic analysis of crisis management in tourism: A theoretical perspective. *Tourism Management*, *86*, 104342.

Berger, P., & Luckmann, T. (2023). The social construction of reality. In *Social theory re-wired* (pp. 92-101). Routledge.

Bernard, N. R., Basit, A., Sofija, E., Phung, H., Lee, J., Rutherford, S., Sebar, B., Harris, N., Phung, D., & Wiseman, N. (2021). Analysis of crisis communication by the Prime Minister of Australia during the COVID-19 pandemic. *International Journal of Disaster Risk Reduction*, *62*, 102375.

Betsch, C., Böhm, R., & Korn, L. (2013). Inviting free-riders or appealing to prosocial behavior? game-theoretical reflections on communicating herd immunity in vaccine advocacy. *Health Psychology*, *32*(9), 978.

Boin, A., Stern, E., & Sundelius, B. (2017). *The politics of crisis management: Public leadership under pressure*. Cambridge University Press.

Bokemper, S. E., Huber, G. A., James, E. K., Gerber, A. S., & Omer, S. B. (2022). Testing persuasive messaging to encourage COVID-19 risk reduction. *PloS one*, *17*(3), e0264782.

Boon-Itt, S., & Skunkan, Y. (2020). Public perception of the COVID-19 pandemic on Twitter: sentiment analysis and topic modeling study. *JMIR public health and surveillance*, *6*(4), e21978.

Bosché, M., Krust, R., Fung, A., & Pawar, A. S. (2025). Exploring Democratic Deliberation in Public Health: Bridging Division and Enhancing Community Engagement. *American Journal of Public Health*, *115*(4), 500-505.

Boyd, D., Golder, S., & Lotan, G. (2010). Tweet, tweet, retweet: Conversational aspects of retweeting on twitter. 2010 43rd Hawaii international conference on system sciences,

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, *3*(2), 77-101.

Brehm, S. S. (1992). *Intimate relationships*. Mcgraw-Hill Book Company.

Bridges, J. A., & Nelson, R. A. (2000). Issues management: A relational approach. *Public relations as relationship management: A relational approach to the study and practice of public relations*, 95-115.

Brooker, P., Barnett, J., & Cribbin, T. (2016). Doing social media analytics. *Big Data & Society*, *3*(2), 2053951716658060.

Broom, G. M., Casey, S., & Ritchey, J. (2000). Concept and theory of organization-public relationships. *Public relations as relationship management: A relational approach to the study and practice of public relations*, 3-22.

Bruning, S. D., & Galloway, T. (2003). Expanding the organization–public relationship scale: Exploring the role that structural and personal commitment play in organization–public relationships. *Public Relations Review*, *29*(3), 309-319.

Bruning, S. D., & Ledingham, J. A. (1999). Relationships between organizations and publics: Development of a multi-dimensional organization-public relationship scale. *Public Relations Review*, *25*(2), 157-170.

Bruning, S. D., & Ledingham, J. A. (2002). Identifying the communication, behaviors, and interaction patterns of agency-client relationships in development and decline. *Journal of Promotion Management*, *8*(2), 21-34.

Bryman, A. (2008). Why do researchers integrate/combine/mesh/blend/mix/merge/fuse quantitative and qualitative research. *Advances in mixed methods research*, *21*(8), 87-100.

Bryman, A. (2016). *Social research methods*. Oxford university press.

Buchwald, A. G., Adams, J., Bortz, D. M., & Carlton, E. J. (2020). Infectious disease transmission models to predict, evaluate, and improve understanding of COVID-19 trajectory and interventions. *Annals of the American Thoracic Society*, *17*(10), 1204-1206.

Bundy, J., Pfarrer, M. D., Short, C. E., & Coombs, W. T. (2017). Crises and crisis management: Integration, interpretation, and research development. *Journal of management*, *43*(6), 1661-1692.

Busari, S., & Adebayo, B. (2020). Nigeria records chloroquine poisoning after Trump endorses it for coronavirus treatment. *CNN* https://www.cnn.com/2020/03/23/africa/chloroquine-trump-nigeria-intl/index.html

Caceres, M. M. F., Sosa, J. P., Lawrence, J. A., Sestacovschi, C., Tidd-Johnson, A., Rasool, M. H. U., Gadamidi, V. K., Ozair, S., Pandav, K., & Cuevas-Lou, C. (2022). The impact of misinformation on the COVID-19 pandemic. *AIMS public health*, *9*(2), 262.

Caceres, M. M. F., Sosa, J. P., Lawrence, J. A., Sestacovschi, C., Tidd-Johnson, A., Rasool, M. H. U., ... & Fernandez, J. P. (2022). The impact of misinformation on the COVID-19 pandemic. AIMS public health, 9(2), 262.

Cairns, G., De Andrade, M., & MacDonald, L. (2013). Reputation, relationships, risk communication, and the role of trust in the prevention and control of communicable disease: a review. *Journal of health communication*, *18*(12), 1550-1565.

Card, K. G. (2022). Collectivism, individualism and COVID-19 prevention: A cross sectional study of personality, culture and behavior among Canadians. *Health Psychology and Behavioral Medicine*, *10*(1), 415-438.

Carfora, V., & Catellani, P. (2021). The effect of persuasive messages in promoting home-based physical activity during COVID-19 pandemic. *Frontiers in psychology*, *12*, 644050.

Carpenter, J. P., & Shelton, C. C. (2021). Educators' perspectives on and motivations for using an online education marketplace: The case of TeachersPayTeachers. com. Society for Information Technology & Teacher Education International Conference,

Carroll, A. B., & Brown, J. (2022). *Business & society: Ethics, sustainability & stakeholder management*. Cengage Learning.

CDC. (2014). *Summary Report of Short-Term Screening Level Calculation and Analysis of Available Animal Studies for MCHM*. http://www.bt.cdc.gov/chemical/MCHM/westvirginia2014/pdf/MCHM-Summary-Report.pdf

CDC. (2020). *Loneliness and social isolation linked to serious health conditions*. https://www.cdc.gov/aging/publications/features/lonely-olderadults.html

Centers for Disease Control and Prevention (CDC). (2018). *Crisis and Emergency Risk Communication (CERC) Manual*. U.S. Department of Health and Human Services.

Champagne-Langabeer, T., Swank, M. W., Manas, S., Si, Y., & Roberts, K. (2021). Dramatic increases in telehealth-related tweets during the early covid-19 pandemic: a sentiment analysis. Healthcare,

Champion, V. L., & Skinner, C. S. (2008). The health belief model. *Health behavior and health education: Theory, research, and practice*, *4*, 45-65.

Chan, M., Yi, J., & Kuznetsov, D. (2022). Government digital repression and political engagement: A cross-national multilevel analysis examining the roles of online surveillance and censorship. *The International Journal of Press/Politics*, 19401612221117106.

Chan, M.-p. S., Winneg, K., Hawkins, L., Farhadloo, M., Jamieson, K. H., & Albarracín, D. (2018). Legacy and social media respectively influence risk perceptions and

protective behaviors during emerging health threats: A multi-wave analysis of communications on Zika virus cases. *Social science & medicine*, *212*, 50-59.

Chandran, S., & Menon, G. (2004). When a day means more than a year: Effects of temporal framing on judgments of health risk. *Journal of consumer research*, *31*(2), 375-389.

Charoensukmongkol, P., & Phungsoonthorn, T. (2022). The interaction effect of crisis communication and social support on the emotional exhaustion of university employees during the COVID-19 crisis. *International Journal of Business Communication*, *59*(2), 269-286.

Chen, E., Lerman, K., & Ferrara, E. (2020). Tracking social media discourse about the covid-19 pandemic: Development of a public coronavirus twitter data set. *JMIR public health and surveillance*, *6*(2), e19273.

Chen, J., & Wang, Y. (2021). Social media use for health purposes: systematic review. *Journal of medical Internet research*, *23*(5), e17917.

Chew, C., & Eysenbach, G. (2010). Pandemics in the age of Twitter: content analysis of Tweets during the 2009 H1N1 outbreak. *PloS one*, *5*(11), e14118.

Chilton, P. (2004). *Analyzing Political Discourse: Theory and Practice.* Routledge.

Cho, S. E., Jung, K., & Park, H. W. (2013). Social media use during Japan's 2011 earthquake: how Twitter transforms the locus of crisis communication. *Media International Australia*, *149*(1), 28-40.

Choi, Y., & Lin, Y.-H. (2009). Consumer response to crisis: Exploring the concept of involvement in Mattel product recalls. *Public Relations Review*, *35*(1), 18-22.

Chou, W. Y. S., Gaysynsky, A., Vanderpool, R. C., & McGowan, R. J. (2020). The COVID-19 Misinformation Challenge in Public Health. *Health Education & Behavior, 47*(4), 501–505. https://doi.org/10.1177/1090198120935503

Chung, E., Subramaniam, G., & Dass, L. C. (2020). Online learning readiness among university students in Malaysia amidst COVID-19. *Asian Journal of University Education*, *16*(2), 45-58.

Cialdini Robert, B. (2007). Influence: The Psychology of Persuasion. *New York: Collins Business*.

Cinelli, M., Quattrociocchi, W., Galeazzi, A., Valensise, C. M., Brugnoli, E., Schmidt, A. L., ... & Scala, A. (2020). The COVID-19 social media infodemic. *Scientific reports*, *10*(1), 16598.

Claeys, A.-S., & Cauberghe, V. (2014). What makes crisis response strategies work? The impact of crisis involvement and message framing. *Journal of Business Research*, *67*(2), 182-189.

Claeys, A.-S., & Opgenhaffen, M. (2016). Why practitioners do (not) apply crisis communication theory in practice. *Journal of Public Relations Research*, *28*(5-6), 232-247.

Coccia, M. (2023). COVID-19 vaccination is not a sufficient public policy to face crisis management of next pandemic threats. *Public Organization Review*, *23*(4), 1353-1367.

Coombs, W. T. (1995). Choosing the right words: The development of guidelines for the selection of the "appropriate" crisis-response strategies. *Management communication quarterly*, *8*(4), 447-476.

Coombs, W. T. (1999). Information and compassion in crisis responses: A test of their effects. *Journal of public relations research*, *11*(2), 125-142.

Coombs, W. T. (2000). Crisis management: Advantages of a relational perspective.

Coombs, W. T. (2006). The protective powers of crisis response strategies: Managing reputational assets during a crisis. *Journal of promotion management*, *12*(3-4), 241-260.

Coombs, W. T. (2007). *Ongoing Crisis Communication: Planning, Managing, and Responding*. Sage Publications.

Coombs, W. T. (2007). Protecting organization reputations during a crisis: The development and application of situational crisis communication theory. *Corporate reputation review*, *10*, 163-176.

Coombs, W. T. (2010). Parameters for crisis communication. *The handbook of crisis communication*, 17-53.

Coombs, W. T. (2012). Attribution theory in communication research. *Encyclopedia of the Sciences of Learning*, 375-379.

Coombs, W. T. (2014). *Ongoing crisis communication: Planning, managing, and responding*. Sage publications.

Coombs, W. T. (2015). The value of communication during a crisis: Insights from strategic communication research. *Business horizons*, *58*(2), 141-148.

Coombs, W. T. (2021). Crisis communication through the lens of strategic communication. The handbook of strategic communication, 181-193.

Coombs, W. T., & Holladay, S. J. (2001). An extended examination of the crisis situations: A fusion of the relational management and symbolic approaches. *Journal of Public Relations Research*, *13*(4), 321-340.

Coombs, W. T., Falkheimer, J., Heide, M., & Young, P. (2015). *Strategic Communication, Social Media and Democracy: the challenge of the digital naturals*. Routledge.

Coombs, W. Timothy. (2007). *Ongoing crisis communication: Planning, managing, and responding*. Sage Publications.

Cooper, I., Mondal, A., Antonopoulos, C. G., & Mishra, A. (2022). Dynamical analysis of the infection status in diverse communities due to COVID-19 using a modified SIR model. *Nonlinear Dynamics*, *109*(1), 19-32.

Cork, B. C., & Eddy, T. (2017). The retweet as a function of electronic word-of-mouth marketing: A study of athlete endorsement activity on Twitter. *International Journal of Sport Communication*, *10*(1), 1-16. https://doi.org/10.1123/IJSC.2016-0107

Cornelissen, J. P. (2020). Corporate communication: A guide to theory and practice. *Corporate Communication*, 1-336.

CoronaTracker. (2020). *Saudi Arabia Overview* https://www.coronatracker.com/

Covello, V. T. (2003). Best practices in public health risk and crisis communication. *Journal of health communication*, *8*(S1), 5-8.

Covello, V. T. (2021). *Communicating in Risk, Crisis, and High Stress Situations: Evidence-Based Strategies and Practice*. Wiley.

Covello, V. T., Peters, R. G., Wojtecki, J. G., & Hyde, R. C. (2001). Risk communication, the West Nile virus epidemic, and bioterrorism: responding to the commnication challenges posed by the intentional or unintentional release of a pathogen in an urban setting. *Journal of urban health*, *78*, 382-391.

Cutlip, S. M. (1994). *The unseen power: Public relations: A history*. Lawrence Erlbaum.

Cutter, S. L., Boruff, B. J., & Shirley, W. L. (2003). Social vulnerability to environmental hazards. *Social Science Quarterly, 84*(2), 242-261.

Dave, Y., & Scott, P. (2010). Emergency knowledge management and social media technologies: A case study of the 2010 Haitian earthquake. *International Journal of Information Management, 31*(1), 6-13.

De Mooij, M. (2021). Global marketing and advertising: Understanding cultural paradoxes. *Global Marketing and Advertising*, 1-100.

Deephouse, D. L. (2004). Comment on" Toward a Theory of Social Risk". *International Studies of Management & Organization*, *34*(4), 108-112.

Demirel, A. (2020). An examination of a campaign hashtag (# OptOutside) with google trends and twitter. *Journal of Interactive Advertising*, *20*(3), 165-180.

Depoux, A., Martin, S., Karafillakis, E., Preet, R., Wilder-Smith, A., & Larson, H. (2020). The pandemic of social media panic travels faster than the COVID-19 outbreak. In (Vol. 27, pp. taaa031): Oxford University Press.

DHHS. (2002). *Communicating in a Crisis: Risk Communication Guidelines for Public Officials*. U. S. D. o. H. a. H. Services. file:///C:/Users/aszsm/Downloads/440159.pdf

Di Domenico, G., Sit, J., Ishizaka, A., & Nunan, D. (2021). Fake news, social media and marketing: A systematic review. *Journal of Business Research*, *124*, 329-341.

Diers-Lawson, A. (2017). A state of emergency in crisis communication an intercultural crisis communication research agenda. *Journal of Intercultural Communication Research*, *46*(1), 1-54.

Dillard, J. P., & Shen, L. (2005). On the nature of reactance and its role in persuasive health communication. *Communication monographs*, *72*(2), 144-168.

Dixon, E., Anderson, J., Blackwelder, D. C., Radnofsky, M. L., & Lazar, A. (2022). The Human Need for Equilibrium: Qualitative Study on the Ingenuity, Technical Competency, and Changing Strategies of People With Dementia Seeking Health Information. *Journal of medical Internet research*, *24*(8), e35072.

Dixon, S. (2022). *Social media use during COVID-19 worldwide - statistics & facts*. https://www.statista.com/topics/7863/social-media-use-during-coronavirus-covid-19-worldwide/#topicHeader__wrapper

Dorison, C. A., Lerner, J. S., Heller, B. H., Rothman, A. J., Kawachi, I. I., Wang, K., Rees, V. W., Gill, B. P., Gibbs, N., & Ebersole, C. R. (2022). In COVID-19 health messaging, loss framing increases anxiety with little-to-no concomitant benefits: Experimental evidence from 84 countries. *Affective science*, *3*(3), 577-602.

Druckman, J. N. (2001). On the limits of framing effects: Who can frame? *The journal of politics*, *63*(4), 1041-1066.

Duggan, M., Ellison, N. B., Lampe, C., Lenhart, A., & Madden, M. (2015). Social media update 2014. *Pew research center*, *19*, 1-2.

Earle, T. C. (2010). Trust in risk management: A model-based review of empirical research. *Risk Analysis: An International Journal*, *30*(4), 541-574.

Easterby-Smith, M., Jaspersen, L. J., Thorpe, R., & Valizade, D. (2021). *Management and business research*. Sage.

Ebrahim, S., & Memish, Z. (2020). Saudi Arabia's measures to curb the covid-19 outbreak: temporary suspension of the Umrah pilgrimage, 2020. *J Travel Med*.

Ehling, W. P. (1992). Estimating the value of public relations and communication to an organization. In *Excellence in public relations and communication management*. Lawrence Erlbaum.

Ehnis, C., & Bunker, D. (2012). Social media in disaster response: Queensland police service-public engagement during the 2011 floods.

Eisenman, D. P., Williams, M. V., Glik, D., Long, A., Plough, A. L., & Ong, M. (2012). The public health disaster trust scale: validation of a brief measure. *Journal of public health management and practice*, *18*(4), E11-E18.

El Kheir, D. Y. M., Boumarah, D. N., Bukhamseen, F. M., Masoudi, J. H., & Boubshait, L. A. (2021). The Saudi experience of health-related social media use: a scoping review. *Saudi Journal of Health Systems Research*, *1*(3), 81-92.

El Sayed, E. M. A. M. (2020). How AI, data science and technology is used to fight the pandemic COVID-19: Case study in Saudi Arabia environment. *Research in world economy*, *11*(5), 409-419.

ElGohary, P. (2023). "Tweeting During Emergencies": The Egyptian Ministry of Health Twitter Communication Strategy Under the Umbrella of the Crisis and Emergency Risk Communication Model (CERC) CASE STUDY: COVID-19 Pandemic.

Ellerup Nielsen, A., & Thomsen, C. (2018). Reviewing corporate social responsibility communication: a legitimacy perspective. *Corporate Communications: An International Journal*, *23*(4), 492-511.

Essam, B. A., & Abdo, M. S. (2021). How do Arab tweeters perceive the COVID-19 pandemic? *Journal of psycholinguistic research*, *50*(3), 507-521.

Evans, A., Twomey, J., & Talan, S. (2011). Twitter as a public relations tool. *Public relations journal*, *5*(1), 1-20.

Fahad, M. (2018). *Evolving PR education: A critical look at private universities in Saudi Arabia*.

Fairclough, N. (1992). Discourse and Social Change (Vol. 73). Cambridge: Polity press

Fairclough, N. (2001). *Language and Power*. Pearson Education.

Fairclough, N. (2013). *Critical discourse analysis: The critical study of language*. Routledge.

Fall, L. T. (2004). The increasing role of public relations as a crisis management function: An empirical examination of communication restrategising efforts among destination organisation managers in the wake of 11th September, 2001. *Journal of Vacation Marketing*, *10*(3), 238-252.

Farao, J. (2020). Digital health communication in South Africa during COVID-19. *Global Health Innovation*, *3*(1)..

Fazio, L. K., Brashier, N. M., Payne, B. K., & Marsh, E. J. (2015). Knowledge does not protect against illusory truth. *Journal of experimental psychology: general*, *144*(5), 993.

Fearn-Banks. (2007). *Crisis communications: A casebook approach*. Routledge Taylor & Francis Group.

Felt, M. (2016). Social media and the social sciences: How researchers employ Big Data analytics. *Big Data & Society*, *3*(1), 2053951716645828.

Ferguson, M. (1990). *Public Communication: The New Imperatives* Sage.

Ferguson, M. A. (1984). The Relationship of Public Relations and Board-Level Boundary-Spanning Roles to Corporate Social Responsibility.

Finau, G., Tarai, J., Varea, R., Titifanue, J., Kant, R., & Cox, J. (2018). Social media and disaster communication: A case study of Cyclone Winston. *Pacific Journalism Review*, *24*(1), 123-137.

Fink, S. (1986). *Crisis management: Planning for the inevitable*. American Management Association.

Fink, S. (1986). *Crisis management: Planning for the inevitable.* AMACOM.

Fink, S. (2002). Crisis management—Planning for the inevitable (Rev. ed.). Lincoln, NE: iUniverse. In: Inc.

Fink, S. (2020). Ethical dilemmas in Covid-19 medical care: is a problematic triage protocol better or worse than no protocol at all? *The American Journal of Bioethics*, *20*(7), 1-5.

Flew, T. (2019). Digital communication, the crisis of trust, and the post-global. *Communication research and practice*, *5*(1), 4-22.

Frandsen, F., & Johansen, W. (2010). Apologizing in a globalizing world: Crisis communication and apologetic ethics. *Corporate Communications: An International Journal*, *15*(4), 350-364.

Frandsen, F., & Johansen, W. (2017). Strategic communication. *The international encyclopedia of organizational communication*, 1-9.

Freeman, R. E. (1984). *Strategic management: A stokcholder approach*. Pitman.

Freimuth, V. S., Musa, D., Hilyard, K., Quinn, S. C., & Kim, K. (2014). Trust during the early stages of the 2009 H1N1 pandemic. *Journal of health communication*, *19*(3), 321-339.

Freitag, A. R., & Stokes, A. Q. (2009). *Global public relations: Spanning borders, spanning cultures*. Routledge.

Frenkel, S., Decker, B., & Alba, D. (2020). How the 'Plandemic'movie and its falsehoods spread widely online. *The New York Times*. https://www.nytimes.com/2020/05/20/technology/plandemic-movie-youtube-facebook-coronavirus.html

Gaffney, D., & Puschmann, C. (2014). Data collection on Twitter. *Twitter and society*, 55-67.

Gallagher, K. M., & Updegraff, J. A. (2012). Health message framing effects on attitudes, intentions, and behavior: a meta-analytic review. *Annals of behavioral medicine*, *43*(1), 101-116..

Gallotti, R., Valle, F., Castaldo, N., Sacco, P., & De Domenico, M. (2020). Assessing the risks of "infodemics" in response to COVID-19 epidemics. *Nature Human Behaviour, 4*(12), 1285–1293. https://doi.org/10.1038/s41562-020-00994-6

Gantiva, C., Jiménez-Leal, W., & Urriago-Rayo, J. (2021). Framing messages to deal with the COVID-19 crisis: the role of loss/gain frames and content. *Frontiers in psychology*, *12*, 568212.

Garimella, K., De Francisci Morales, G., Gionis, A., & Mathioudakis, M. (2018, April). Political discourse on social media: Echo chambers, gatekeepers, and the price of bipartisanship. In *Proceedings of the 2018 world wide web conference* (pp. 913-922).

Gee, J. P. (2020). *What Is a Human?: Language, Mind, and Culture*. Springer Nature.

General Authority for Statistics. (2020). *Statistical Yearbook*. https://www.stats.gov.sa/en/46

Gergen, K. J. (1985). Social constructionist inquiry: Context and implications. In *The social construction of the person* (pp. 3-18). Springer.

Glenn, J., Chaumont, C., & Villalobos Dintrans, P. (2021). Public health leadership in the times of COVID-19: a comparative case study of three countries. *International Journal of Public Leadership*, *17*(1), 81-94.

Glik, D. C. (2007). Risk communication for public health emergencies. *Annu. Rev. Public Health*, *28*, 33-54.

GMI. (2022). *Saudi Arabia Social Media Statistics 2021* https://www.globalmediainsight.com/blog/saudi-arabia-social-media-statistics/

González, H. A., & Smith, S. (2008). Crisis communications management on the web: how internet-based technologies are changing the way public relations professionals handle business crises. *Journal of contingencies and crisis management*, *16*(3), 143-153.

Gopika, I. S. (2020). Community kitchens to feed needy in Kerala. *New Indian Express*. https://www.newindianexpress.com/states/kerala/2020/mar/30/community-kitchens-to-feed-needy-in-kerala-2123215.html

Gordon, J. (2007). The mobile phone and the public sphere: Mobile phone usage in three critical situations. *Convergence*, *13*(3), 307-319.

Gostin, L. O., Cohen, I. G., & Shaw, J. (2020). Digital health passes in the age of COVID-19: Are "vaccine passports" lawful and ethical? *JAMA*, *325*(19), 1933-1934.

Goswami, A., Noirault, E., Coombs, E. J., Clavel, J., Fabre, A.-C., Halliday, T. J., Churchill, M., Curtis, A., Watanabe, A., & Simmons, N. B. (2022). Attenuated evolution of mammals through the Cenozoic. *Science*, *378*(6618), 377-383.

Gottlieb, M., & Dyer, S. (2020). Information and disinformation: social media in the COVID-19 crisis. Academic emergency medicine, 27(7), 640.

Graham, M. W., Avery, E. J., & Park, S. (2015). The role of social media in local government crisis communications. *Public Relations Review*, *41*(3), 386-394.

Gregory, A. (2004). Scope and structure of public relations: a technology driven view. *Public Relations Review*, *30*(3), 245-254.

Grunig, J. E. (1993). Implications of public relations for other domains of communication. *Journal of Communication*, *43*(3), 164-173.

Grunig, J. E., & Huang, Y.-H. (2000). From organizational effectiveness to relationship indicators: Antecedents of relationships, public relations strategies, and relationship outcomes.

Grunig, L. A., & Ehling, W. P. (1992). What is an effective organization? In L. A. Grunig
(Ed.), *Excellence in public relations and communication management* (pp. 65-90).
Lawrence Erlbaum Associates.

Gruzd, A., Jacobson, J., Mai, P., & Dubois, E. (2018). The state of social media in Canada
2017. *Gruzd, Jacobson, Mai, & Dubois.(2018). The State of Social Media in Canada*.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research.
Handbook of qualitative research, *2*(163-194), 105.

Guidry, J. P., Meganck, S. L., Perrin, P. B., Messner, M., Lovari, A., & Carlyle, K. E. (2021).
Ebola: Tweeting and pinning an epidemic. *Atlantic Journal of Communication*,
29(2), 79-92.

Guidry, J., Bagher, S., Felemban, O., Rich, A., & Loo, C. (2017). Reasons of repeat dental
treatment under general anaesthesia: A retrospective study. *Eur J Paediatr Dent*,
18(4), 313-318.

Hale, J. E., Dulek, R. E., & Hale, D. P. (2005). Crisis response communication challenges:
Building theory from qualitative data. *The Journal of Business Communication
(1973), 42*(2), 112-134.

Halliday, M. A. K., & Matthiessen, C. M. (2014). *Halliday's Introduction to Functional Grammar*
(4th ed.). Routledge.

Hancu-Budui, A., Zorio-Grima, A., & Blanco-Vega, J. (2020). Audit institutions in the
European Union: Public service promotion, environmental engagement and Covid
crisis communication through social media. *Sustainability*, *12*(23), 9816.

Harris, J. K., Choucair, B., Maier, R. C., Jolani, N., & Bernhardt, J. M. (2014). Are public
health organizations tweeting to the choir? Understanding local health department
Twitter followership. *Journal of medical Internet research*, *16*(2), e31.

Hasan, M. (2013). Islam and Professionalism: In Search of Excellence. *Retrieved on March*,
28, 2020.

Hassanain, M. (2017). An overview of the performance improvement initiatives by the
ministry of Health in the Kingdom of Saudi Arabia. *INQUIRY: The Journal of Health
Care Organization, Provision, and Financing*, *54*, 0046958017707872.

Hassounah, M., Raheel, H., & Alhefzi, M. (2020). Digital response during the COVID-19
pandemic in Saudi Arabia. *Journal of medical Internet research*, *22*(9), e19338.

Hayman, F. (2017). Agency, expression, and the virtual sphere: Social media in Saudi
Arabia. *Global Societies Journal*, *5*.

Heldman, A. B., Schindelar, J., & Weaver, J. B. (2013). Social media engagement and public
health communication: implications for public health organizations being truly "social".
Public health reviews, *35*, 1-18.

Hermann, C. F. (1963). Some consequences of crisis which limit the viability of organizations. *Administrative Science Quarterly*, 8(1), 61–82. https://doi.org/10.2307/2390887

Hermida, A. (2010). Twittering the news: The emergence of ambient journalism. *Journalism practice*, *4*(3), 297-308.

Heverin, T., & Zach, L. (2010). Microblogging for crisis communication: examination of Twitter use in response to a 2009 violent crisis in the Seattle-Tacoma, Washington, area. ISCRAM,

Heydari, S. T., Zarei, L., Sadati, A. K., Moradi, N., Akbari, M., Mehralian, G., & Lankarani, K. B. (2021). The effect of risk communication on preventive and protective Behaviours during the COVID-19 outbreak: mediating role of risk perception. *BMC Public Health*, *21*(1), 1-11.

Hiebert, R. E. (2005). Commentary: new technologies, public relations, and democracy. *Public Relations Review*, *31*(1), 1-9.

Hilton, J., Riley, H., Pellis, L., Aziza, R., Brand, S. P., K. Kombe, I., Ojal, J., Parisi, A., Keeling, M. J., & Nokes, D. J. (2022). A computational framework for modelling infectious disease policy based on age and household structure with applications to the COVID-19 pandemic. *PLoS Computational Biology*, *18*(9), e1010390.

Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020). The difference between emergency remote teaching and online learning. Educause review, 27(1), 1-9.

Hoftede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and organizations: software of the mind: intercultural cooperation and its importance for survival*. McGraw-Hill.

Hon, L. C., & Grunig, J. E. (1999). Guidelines for measuring relationships in public relations. In: Gainesville, FL: Institute for public relations.

Hoque, M. U., Lee, K., Beyer, J. L., Curran, S. R., Gonser, K. S., Lam, N. S., Mihunov, V. V., & Wang, K. (2022). Analyzing tweeting patterns and public engagement on Twitter during the recognition period of the COVID-19 pandemic: A study of two US States. *IEEE Access*, *10*, 72879-72894.

Houston, J. B., Hawthorne, J., Perreault, M. F., Park, E. H., Goldstein Hode, M., Halliwell, M. R., Turner McGowen, S. E., Davis, R., Vaid, S., & McElderry, J. A. (2015). Social media and disasters: a functional framework for social media use in disaster planning, response, and research. *Disasters*, *39*(1), 1-22.

Houston, J. B., Spialek, M. L., Cox, J., Greenwood, M. M., & First, J. (2015). The centrality of communication and media in fostering community resilience: A framework for assessment and intervention. *American Behavioral Scientist*, *59*(2), 270-283.

Howard, P. N., & Hussain, M. M. (2013). *Democracy's fourth wave?: digital media and the Arab Spring*. Oxford University Press.

Hughes, A. L., & Tapia, A. H. (2015). Social media in crisis: When professional responders meet digital volunteers. *Journal of Homeland Security and Emergency Management*, *12*(3), 679-706.

Hughes, A. L., Palen, L., Sutton, J., Liu, S. B., & Vieweg, S. (2008). Site-seeing in disaster: An examination of on-line social convergence. Proceedings of the 5th International ISCRAM Conference,

Hughes, P., Morgan, R. E., Hodgkinson, I. R., Kouropalatis, Y., & Lindgreen, A. (2020). A diagnostic tool to determine a strategic improvisation Readiness Index Score (IRIS) to survive, adapt, and thrive in a crisis. *Industrial Marketing Management*, *88*, 485-499.

Ibrahim, W., Abaalalaa, H. S., & Hardie, A. (2022). Pre-suasive and persuasive strategies in the tweets of the Saudi Ministry of Health during the 2020 coronavirus pandemic: A corpus linguistic exploration. *Frontiers in Communication*, *7*, 984651.

Infante, A., & Mardikaningsih, R. (2022). The Potential of social media as a Means of Online Business Promotion. *Journal of Social Science Studies (JOS3)*, *2*(2), 45-49.

Iqbal, M. M., Abid, I., Hussain, S., Shahzad, N., Waqas, M. S., & Iqbal, M. J. (2020). The effects of regional climatic condition on the spread of COVID-19 at global scale. *Science of the Total Environment*, *739*, 140101.

Islam, M. R., Liu, S., Wang, X., & Xu, G. (2020). Deep learning for misinformation detection on online social networks: a survey and new perspectives. *Social Network Analysis and Mining*, *10*, 1-20.

Jacobsen, K. H., & Vraga, E. K. (2020). Improving communication about COVID-19 and emerging infectious diseases. *European journal of clinical investigation*, *50*(5).

Jain, N., Malviya, P., Singh, P., & Mukherjee, S. (2021). Twitter mediated sociopolitical communication during the COVID-19 pandemic crisis in india. *Frontiers in psychology*, *12*, 784907.

Jardine, C. G. (2008). Stakeholder participation in risk management decision making. *Encyclopedia of Quantitative Risk Analysis and Assessment*, *4*.

Jiang, H., & Tang, X. (2022). Effects of local government social media use on citizen compliance during a crisis: Evidence from the COVID-19 crisis in China. *Public administration*, *101*(3), 843-864.

Jones, R., & Williams, A. (2013). *social Media in Crisis: Strategies for Effective Communication.*

Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business horizons*, *53*(1), 59-68.

Kapoor, M., & Ravi, S. (2020). Impact of national lockdown on COVID-19 deaths in select European countries and the US using a Changes-in-Changes model. *arXiv preprint arXiv:2006.12251*.

Kapuściński, G., Zhang, N., Zeng, L., & Cao, A. (2021). Effects of crisis response tone and spokesperson's gender on employer attractiveness. *International Journal of Hospitality Management*, *94*, 102884.

Karasneh, R., Al-Azzam, S., Muflih, S., Soudah, O., Hawamdeh, S., & Khader, Y. (2021). Media's effect on shaping knowledge, awareness risk perceptions and communication practices of pandemic COVID-19 among pharmacists. *Research in Social and Administrative Pharmacy*, *17*(1), 1897-1902.

Kawchuk, G., Hartvigsen, J., Harsted, S., Nim, C. G., & Nyirö, L. (2020). Misinformation about spinal manipulation and boosting immunity: an analysis of Twitter activity during the COVID-19 crisis. *Chiropractic & manual therapies*, *28*(1), 1-13.

Kemp, S. (2020). *DIGITAL 2020: SAUDI ARABIA* https://datareportal.com/reports/digital-2020-saudi-arabia#:~:text=The%20number%20of%20internet%20users,at%2093%25%20in%20January%202020.

Kemp, S. (2023). *Digital 2023: Saudi Arabia* https://datareportal.com/reports/digital-2023-saudi-arabia

Keselman, A., Slaughter, L., & Patel, V. L. (2005). Toward a framework for understanding lay public's comprehension of disaster and bioterrorism information. *Journal of Biomedical Informatics*, *38*(4), 331-344.

Khasawneh, M. A. S. (2023). Exploring The Role of Culture in Shaping Communication Practices in Saudi Arabian Organizations: A Qualitative Study. Journal of Southwest Jiaotong University, 58(5).

Kim, S., & Liu, B. F. (2012). Are all crises opportunities? A comparison of how corporate and government organizations responded to the 2009 flu pandemic. *Journal of public relations research*, *24*(1), 69-85.

Kim, Y. (2016). Understanding publics' perception and behaviors in crisis communication: Effects of crisis news framing and publics' acquisition, selection, and transmission of information in crisis situations. *Journal of public relations research*, *28*(1), 35-50.

Kirat, M. (2007). Promoting online media relations: Public relations departments' use of Internet in the UAE. *Public Relations Review*, *33*(2), 166-174.

Kitchin, R. (2014). Big data, new epistemologies and paradigm shifts. . *Big Data and Society 1*(1).

Kitchin, R., & McArdle, G. (2016). What makes Big Data, Big Data? Exploring the ontological characteristics of 26 datasets. *Big Data & Society*, *3*(1), 2053951716631130.

Kozleski, E. B. (2017). The uses of qualitative research: Powerful methods to inform evidence-based practice in education. *Research and practice for persons with severe disabilities*, *42*(1), 19-32.

Krishnan, C. S. N., Ganesh, L., & Rajendran, C. (2022). Entrepreneurial Interventions for crisis management: Lessons from the Covid-19 Pandemic's impact on entrepreneurial ventures. *International Journal of Disaster Risk Reduction*, *72*, 102830.

Kuhn, T. S. (1962). *The structure of scientific revolutions*. University of Chicago press.

Kulkarni, S., Dirkson, A., & Majchrzak, T. (2020). An exploratory study of COVID-19 misinformation on Twitter. Online Social Networks and Media, 22, 100104. In.

Kwak, H., Lee, C., Park, H., & Moon, S. (2010). What is Twitter, a social network or a news media? Proceedings of the 19th international conference on World wide web,

Kwok, K. O., Li, K. K., Chan, H. H. H., Yi, Y. Y., Tang, A., Wei, W. I., & Wong, S. Y. S. (2020). Community responses during early phase of COVID-19 epidemic, Hong Kong. *Emerging infectious diseases*, *26*(7), 1575.

Lancet, T. (2021). Health as a foundation for society. *Lancet (London, England)*, *397*(10268), 1.

Larson, H. J. (2020). Blocking information on COVID-19 can fuel the spread of misinformation. *Nature*, *580*(7803), 306-307.

Lazer, D. M., Baum, M. A., Benkler, Y., Berinsky, A. J., Greenhill, K. M., Menczer, F., Metzger, M. J., Nyhan, B., Pennycook, G., Rothschild, D., Schudson, M., Sloman, S. A., Sunstein, C. R., Thorson, E. A., Watts, D. J., & Zittrain, J. L. (2018). The science of fake news. *Science, 359*(6380), 1094–1096. https://doi.org/10.1126/science.aao2998

Leach, M., MacGregor, H., Scoones, I., & Wilkinson, A. (2021). Post-pandemic transformations: How and why COVID-19 requires us to rethink development. *World development*, *138*, 105233.

Leach, M., Stirling, A. C., & Scoones, I. (2010). *Dynamic sustainabilities: technology, environment, social justice*. Taylor & Francis.

Ledingham, J. A. (2003). Explicating relationship management as a general theory of public relations. *Journal of public relations research*, *15*(2), 181-198.

Ledingham, J. A. (2006). Relationship management: A general theory of public relations. *Public relations theory II*, 465-483.

Ledingham, J. A. (2011). Political public relations and relationship management. *Political public relations: Principles and applications*, 235-253.

Ledingham, J. A., & Bruning, S. D. (2000). *Public relations as relationship management: A relational approach to the study and practice of public relations*. Routledge.

Ledraa, T., & Aldegheishem, A. (2023). Does City Size Affect COVID-19 Spread and Policy Measures? The case of Riyadh Province, Saudi Arabia. *International Review for Spatial Planning and Sustainable Development*, *11*(3), 228-243.

Lee, C.-H., Wang, D., Desouza, K. C., & Evans, R. (2021). Digital transformation and the new normal in China: how can enterprises use digital technologies to respond to COVID-19? *Sustainability*, *13*(18), 10195.

Lee, M. (2008). Public relations as crisis management. *Government public relations: A reader*, 275-284.

Lelisho, M. E., Pandey, D., Alemu, B. D., Pandey, B. K., & Tareke, S. A. (2023). The negative impact of social media during COVID-19 pandemic. *Trends in Psychology*, *31*(1), 123-142.

Lettieri, E., Masella, C., & Radaelli, G. (2009). Disaster management: findings from a systematic review. *Disaster Prevention and Management: An International Journal*, *18*(2), 117-136.

Leykin, D., Aharonson-Daniel, L., & Lahad, M. (2016). Leveraging social computing for personalized crisis communication using social media. *PLoS currents*, *8*.

Li, L., Zhang, Q., Wang, X., Zhang, J., Wang, T., Gao, T. L., ... & Wang, F. Y. (2020). Characterizing the propagation of situational information in social media during covid-19 epidemic: A case study on weibo. *IEEE Transactions on computational social systems*, *7*(2), 556-562..

Li, Y., Twersky, S., Ignace, K., Zhao, M., Purandare, R., Bennett-Jones, B., & Weaver, S. R. (2020). Constructing and communicating COVID-19 stigma on Twitter: A content analysis of tweets during the early stage of the COVID-19 outbreak. *International journal of environmental research and public health*, *17*(18), 6847.

Lichtman, M. (2013). *Qualitative research for the social sciences*. SAGE publications.

Lim, C., & Putnam, R. D. (2010). Religion, social networks, and life satisfaction. *American sociological review*, *75*(6), 914-933.

Lin, X., Spence, P. R., & Lachlan, K. A. (2016). Social media and credibility indicators: The effect of influence cues. *Computers in human behavior*, *63*, 264-271.

Lin, Y., & Kant, S. (2021). Using social media for citizen participation: Contexts, empowerment, and inclusion. *Sustainability*, *13*(12), 6635.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. sage.

Lindekilde, L. (2014). Discourse and frame analysis: In-depth analysis of qualitative data in social movement research. In *Methodological practices in social movement research* (pp. 195-227). Oxford University Press.

Lissiman, E., Bhasale, A. L., & Cohen, M. (2014). Garlic for the common cold. *Cochrane Database of Systematic Reviews*(11).

Liu, B. F., & Kim, S. (2011). How organizations framed the 2009 H1N1 pandemic via social and traditional media: Implications for US health communicators. *Public Relations Review*, *37*(3), 233-244.

Liu, B. F., Austin, L., & Jin, Y. (2011). How publics respond to crisis communication strategies: The interplay of information form and source. *Public Relations Review*, *37*(4), 345-353.

Liu, W., Lai, C.-H., & Xu, W. W. (2018). Tweeting about emergency: A semantic network analysis of government organizations' social media messaging during hurricane Harvey. *Public Relations Review*, *44*(5), 807-819.

Lochbuehler, K., Mercincavage, M., Tang, K. Z., Tomlin, C. D., Cappella, J. N., & Strasser, A. A. (2018). Effect of message congruency on attention and recall in pictorial health warning labels. *Tobacco control*, *27*(3), 266-271.

Loepp, E. D. (2008). Crisis rhetoric: a theory of communication in times of crisis.

Long, D. E. (2005). *Culture and customs of Saudi Arabia*. Bloomsbury Publishing USA.

Lovejoy, K., & Saxton, G. D. (2012). Information, community, and action: How nonprofit organizations use social media. *Journal of computer-mediated communication*, *17*(3), 337-353.

Lunn, P. D., Timmons, S., Belton, C. A., Barjaková, M., Julienne, H., & Lavin, C. (2020). Motivating social distancing during the COVID-19 pandemic: An online experiment. *Social science & medicine*, *265*, 113478.

Lwin, M. O., Lu, J., Sheldenkar, A., Cayabyab, Y. M., Yee, A. Z. H., & Smith, H. E. (2020). Temporal and textual analysis of social media on collective discourses during the Zika virus pandemic. *BMC Public Health*, *20*(1), 1-9.

Ma, L., & Zhan, M. (2016). Effects of attributed responsibility and response strategies on organizational reputation: A meta-analysis of situational crisis communication theory research. *Journal of public relations research*, *28*(2), 102-119.

Mabkhot, H., Isa, N. M., & Mabkhot, A. (2022). The Influence of the Credibility of Social Media Influencers SMIs on the Consumers' Purchase Intentions: Evidence from Saudi Arabia. *Sustainability*, *14*(19), 12323.

Macnamara, J. (2021). New insights into crisis communication from an "inside" emic perspective during COVID-19. *Public Relations Inquiry*, *10*(2), 237-262.

Mahdikhani, M. (2022). Predicting the popularity of tweets by analyzing public opinion and emotions in different stages of Covid-19 pandemic. *International Journal of Information Management Data Insights*, *2*(1), 100053.

Maison, D. (2018). *Qualitative marketing research: Understanding consumer behaviour*. Routledge.

Majumder, S. (2023). *Saudi Arabia's social and digital trends: What you need to know. Campaign Middle East* https://campaignme.com/saudi-arabias-social-and-digital-trends-what-you-need-to-know/#:~:text=The%20number%20of%20social%20media,audiences%20and%20increase%20brand%20awareness.

Malik, A., Khan, M. L., & Quan-Haase, A. (2021). Public health agencies outreach through Instagram during the COVID-19 pandemic: Crisis and Emergency Risk Communication perspective. *International Journal of Disaster Risk Reduction*, *61*, 102346.

Marken, G. (2007). Social media… the hunted can become the hunter. *Public Relations Quarterly*, *52*(4), 9.

Marsen, S. (2020). Navigating crisis: The role of communication in organizational crisis. *International Journal of Business Communication*, *57*(2), 163-175.

Martinko, M. J., & Mackey, J. D. (2019). Attribution theory: An introduction to the special issue. *Journal of Organizational Behavior*, *40*(5), 523-527.

Mathrubhumi. (2020, 10 July 2020). *Mathrubhumi.* https://english.mathrubhumi.com/news/kerala/lockdown-violation-in-poonthura-people-begins-protest-on-streets-1.4894876#:~:text=Thiruvananthapuram%3A%20The%20locals%20residents%20of,gathered%20without%20even%20wearing%20masks.

Matteo, C., Walter, Q., Galeazzi, A., Michele, V. C., Emanuele, B., Lucia, S. A., ... & Antonio, S. (2020). The covid-19 social media infodemic. *Scientific Reports*, *10*(16598 (2020)).

Maxwell, J. (1992). Understanding and validity in qualitative research. *Harvard educational review*, *62*(3), 279-301.

Mayfield, A. (2006). Social media… the hunted can become the hunter. *Public Relations Quarterly*, *52*(4), 9.

McCombs, M., & Valenzuela, S. (2020). *Setting the agenda: Mass media and public opinion.* John Wiley & Sons.

McGregor, S. L. (2010). *Critical discourse analysis: A primer.* Mount Saint Vincent University.

Medford, R. J., Saleh, S. N., Sumarsono, A., Perl, T. M., & Lehmann, C. U. (2020). An "infodemic": leveraging high-volume Twitter data to understand early public sentiment for the coronavirus disease 2019 outbreak. Open forum infectious diseases,

Mergel, I. (2012). *Social media in the public sector: A guide to participation, collaboration and transparency in the networked world.* John Wiley & Sons. Saudi Census (2022). General Authority for Statistics, Kingdom of Saudi Arabia. Retrieved from: https://www.stats.gov.sa/en

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Metaxas, P. T., Mustafaraj, E., & Gayo-Avello, D. (2011, October). How (not) to predict elections. In *2011 ieee third international conference on privacy, security, risk and trust and 2011 ieee third international conference on social computing* (pp. 165-171). IEEE..

Mian, A., & Khan, S. (2020). Coronavirus: the spread of misinformation. *BMC medicine*, *18*, 1-2.

Mickoleit, A. (2014). Social media use by governments: A policy primer to discuss trends, identify policy opportunities and guide decision makers.

Miller, N. P., Milsom, P., Johnson, G., Bedford, J., Kapeu, A. S., Diallo, A. O., Hassen, K., Rafique, N., Islam, K., & Camara, R. (2018). Community health workers during the Ebola outbreak in Guinea, Liberia, and Sierra Leone. *Journal of global health*, *8*(2).

Mitroff, I. I. (2004). *Crisis leadership: Planning for the unthinkable*. John Wiley & Sons.

MOE. (2021). *Educational Indicators*. M. o. E. S. Arabia. https://moe.gov.sa/en/knowledgecenter/dataandstats/Pages/educationindicators.aspx

MoH. (2009). *Statistical Book for 2009*.

MoH. (2018). *All the Kingdom Will be Covered by Telemedicine in Two Months*. https://www.moh.gov.sa/en/Ministry/MediaCenter/News/Pages/news-2018-03-06-006.asp

MoH. (2019). https://www.moh.gov.sa/en/Pages/default.aspx

MoH. (2020). *THE KINGDOM OF SAUDI ARABIA's EXPERIENCE in Health Preparedness and Response to COVID-19 Pandemic*. https://www.moh.gov.sa/en/Ministry/MediaCenter/Publications/Documents/COVID-19-NATIONAL.pdf

MoH. (2020b). *(Mawid) Service*. https://www.moh.gov.sa/en/eServices/Pages/cassystem.aspx

MoH. (2020c). *E-Prescription Service*. https://www.moh.gov.sa/en/eServices/Pages/Prescriptions.aspx

MoH. (2020e). *Over 2M Beneficiaries of «Takkad» Centers and «Tetamman» Clinics 2020*. https://www.moh.gov.sa/en/Ministry/MediaCenter/News/Pages/News-2020-08-12-007.aspx

MoH. (2020f). *Tetamman App*. https://www.moh.gov.sa/en/eServices/Pages/Rest-assured.aspx

MoH. (2021a). *Awareness plateform-COVID19*. https://www.moh.gov.sa/en/awarenessplateform/VariousTopics/

MoH. (2021b). *MOH issues COVID-19 awareness guidelines in many languages*. https://www.moh.gov.sa/en/Ministry/MediaCenter/News/Pages/News-2020-03-17-001.aspx

Mohammed, A., & Ferraris, A. (2021). Factors influencing user participation in social media: Evidence from twitter usage during COVID-19 pandemic in Saudi Arabia. *Technology in Society*, *66*, 101651.

Morahan-Martin, J. M. (2004). How internet users find, evaluate, and use online health information: a cross-cultural review. *CyberPsychology & Behavior*, *7*(5), 497-510.

Morgan, M. G. (2002). *Risk communication: A mental models approach*. Cambridge University Press.

Morstatter, F., Pfeffer, J., Liu, H., & Carley, K. (2013). Is the sample good enough? Comparing data from Twitter's streaming API with Twitter's firehose. In *Proceedings of the international AAAI conference on web and social media* (Vol. 7, No. 1, pp. 400-408).

Mufsin, P., & Malakar, S. (2020). *How a Tiny South Indian state is using transmedia storytelling to fight COVID-19 - Creating relevant content, available through multiple platforms, is helping Kerala combat the coronavirus [Online]* https://thediplomat.com/2020/04/how-a-tiny-south-indian-state-is-using-transmedia-storytelling-to-fight-covid-19/

Muhammed T, S., & Mathew, S. K. (2022). The disaster of misinformation: a review of research in social media. International journal of data science and analytics, 13(4), 271-285.

Muhammed, T. S., & Mathew, S. K. (2022). The disaster of misinformation: a review of research in social media. *International journal of data science and analytics*, *13*(4), 271-285.

Naeem, H. (2023). Is a subpersonal virtue epistemology possible? *Philosophical Explorations*, 1-18.

National Centre for e-Learning. (2020). https://www.my.gov.sa/wps/portal/snp/agencies/agencyDetails/AC399/!ut/p/z0/04_Sj9CPykssy0xPLMnMz0vMAfIjo8zivQIsTAwdDQz9LQwNzQwCnS0tXPwMvYwNDAz0g1Pz9L30o_ArAppiVOTr7JuuH1WQWJKhm5mXlg8f4ehsbGmpX5DtHg4ANOKZFw!!/#:~:text=The%20Centre%20is%20the%20competent,reliable%20e%2Deducation%20for%20all.

Natto, Z. S., & Alshaeri, H. K. (2021). Characteristics of first cases of coronavirus disease 2019 and the effort to prevent the early spread of COVID-19 in Saudi Arabia. *Risk Management and Healthcare Policy*, 315-321.

Nautiyal, R., Albrecht, J. N., & Carr, A. (2023). Can destination image be ascertained from social media? An examination of Twitter hashtags. *Tourism and Hospitality Research*, *23*(4), 578-593.

Ndlela, M. N. (2018). Engaging Stakeholders in the Management of Natural Resource Risks. In M. N. Ndlela & I. A. Glenna (Eds.), *Societal and Policy Dimensions in the Adoption of Biotechnological Innovations in Agriculture*. IGI Global.

Ngai, C. S. B., Singh, R. G., Lu, W., & Koon, A. C. (2020). Grappling with the COVID-19 health crisis: content analysis of communication strategies and their effects on public engagement on social media. *Journal of medical Internet research*, *22*(8), e21360.

Nuttavuthisit, K., Nuttavuthisit, K., & Achauer. (2019). *Qualitative Consumer and Marketing Research*. Springer.

O'Connor, A. M., Légaré, F., & Stacey, D. (2003). Risk communication in practice: the contribution of decision aids. *Bmj*, *327*(7417), 736-740.

Olaniran, B. A., & Williams, D. E. (2008). Applying anticipatory and relational perspectives to the Nigerian delta region oil crisis. *Public Relations Review*, *34*(1), 57-59.

Olmastroni, F., Guidi, M., Martini, S., & Isernia, P. (2021). Framing Effects on the COVID-19 See-Saw. *Swiss Political Science Review*, *27*(2), 257-270.

Ordenes, F. V., & Silipo, R. (2021). Machine learning for marketing on the KNIME Hub: The development of a live repository for marketing applications. *Journal of Business Research*, *137*, 393-410.

Oyeyemi, S. O., Gabarron, E., & Wynn, R. (2014). Ebola, Twitter, and misinformation: a dangerous combination? *Bmj*, *349*.

Ozuem, W., Willis, M., & Howell, K. (2022). Thematic analysis without paradox: sensemaking and context. *Qualitative Market Research: An International Journal*, *25*(1), 143-157.

Palen, L., & Hughes, A. L. (2018). Social media in disaster communication. In W. D. Rodríguez & J. E. Trainor (Eds.), *Handbook of disaster research* (pp. 497-518). Springer.

Palen, L., Vieweg, S., Sutton, J., Liu, S. B., & Hughes, A. (2007). Crisis informatics: Studying crisis in a networked world. Proceedings of the Third International Conference on E-Social Science,

Palenchar, M. J. (2020). Historical trends of risk and crisis communication. In *Handbook of risk and crisis communication* (pp. 31-52). Routledge.

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and policy in mental health and mental health services research*, *42*, 533-544.

Panagiotopoulos, P., Barnett, J., Bigdeli, A. Z., & Sams, S. (2016). Social media in emergency management: Twitter as a tool for communicating risks to the public. *Technological Forecasting and Social Change*, *111*, 86-96.

Paraskevas, A. (2006). Crisis management or crisis response system? A complexity science approach to organizational crises. *Management decision*, *44*(7), 892-907.

Paulik, L. B., Keenan, R. E., & Durda, J. L. (2020). The case for effective risk communication: Lessons from a global pandemic. *Integrated Environmental Assessment and Management*, *16*(5), 552.

Pearce, J. (2008). *Gulf PR industry booms* www.ipra.org/news/itle/gulf-pr-industrybooms/platteau

Pearson, C. M., & Clair, J. A. (1998). Reframing crisis management. *Academy of management review*, *23*(1), 59-76.

Pearson, C. M., & Clair, J. A. (1998). Reframing crisis management. *Academy of Management Review*, 23(1), 59–76. https://doi.org/10.5465/amr.1998.192960

Pennycook, G., & Rand, D. G. (2021). The psychology of fake news. *Trends in cognitive sciences*, *25*(5), 388-402. https://doi.org/10.1016/j.tics.2021.02.007

Pennycook, G., McPhetres, J., Zhang, Y., Lu, J. G., & Rand, D. G. (2020). Fighting COVID-19 misinformation on social media: Experimental evidence for a scalable accuracy-nudge intervention. *Psychological science*, *31*(7), 770-780.

Pereira, C. S., Veloso, B., Durão, N., & Moreira, F. (2022). The influence of technological innovations on international business strategy before and during COVID-19 pandemic. *Procedia computer science*, *196*, 44-51.

Pfefferbaum, B., Newman, E., Nelson, S. D., Nitiéma, P., Pfefferbaum, R. L., & Rahman, A. (2014). Disaster media coverage and psychological outcomes: descriptive findings in the extant research. *Current psychiatry reports*, *16*, 1-7.

Pickard, A. J. (2013). *Research methods in information*. Facet publishing.

Piwko, A. M. (2021). Islam and the COVID-19 Pandemic: Between Religious Practice and Health Protection. *Journal of Religion and Health, 60*(5), 3291–3308. https://doi.org/10.1007/s10943-021-01346-y

Podloski, B., & Kelman, I. (2023). Categorising potential non-disasters. *Disaster Prevention and Management: An International Journal*.

Polit, D., & Beck, C. (2020). *Essentials of nursing research: Appraising evidence for nursing practice*. Lippincott Williams & Wilkins.

Pollett, S., & Rivers, C. (2020). Social media and the new world of scientific communication during the COVID-19 pandemic. *Clinical Infectious Diseases*, *71*(16), 2184-2186.

Prime, H., Wade, M., & Browne, D. T. (2020). Risk and resilience in family well-being during the COVID-19 pandemic. *American Psychologist*, *75*(5), 631.

Procopio, C. H., & Procopio, S. T. (2007). Do you know what it means to miss New Orleans? Internet communication, geographic community, and social capital in crisis. *Journal of applied communication research*, *35*(1), 67-87.

PTI. (2020). Lockdown: Community kitchens feeding hungry, needy in Kerala. *Press Trust of India*. https://yourstory.com/2020/03/lockdown-community-kitchens-feeding-hungry-needy-kerala

Quinn, S. C., Parmer, J., Freimuth, V. S., Hilyard, K. M., Musa, D., & Kim, K. H. (2013). Exploring communication, trust in government, and vaccination intention later in the 2009 H1N1 pandemic: results of a national survey. *Biosecurity and bioterrorism: biodefense strategy, practice, and science*, *11*(2), 96-106.

R Lyles, C., López, A., Pasick, R., & Sarkar, U. (2013). "5 mins of uncomfyness is better than dealing with cancer 4 a lifetime": an exploratory qualitative analysis of cervical and breast cancer screening dialogue on Twitter. *Journal of Cancer Education*, *28*, 127-133.

Raamkumar, S. A., Tan, S. G., & Wee, H. L. (2020). Measuring the outreach efforts of public health authorities and the public response on Facebook during the COVID-19 pandemic in early 2020: cross-country comparison. *Journal of medical Internet research*, *22*(5), e19334.

Radu, R. (2020). <? covid19?> Fighting the 'Infodemic': Legal Responses to COVID-19 Disinformation. *Social Media+ Society*, *6*(3), 2056305120948190.

Raghunath, A. (2020, March 10, 2020). As Fake News on Coronavirus Spreads, Kerala Police Tightens

Rainie, L., & Fox, S. (2000). The online health care revolution.

Rand, P., & Rodriguez, G. (2007). *Relating to the public: The evolving role of public relations in the age of social media*, http://www.prfirms.org/_data/n_0001/resources/live/CPRF%20Social%20Media%20White%20Paper%20FINAL.pdf

Ratten, V. (2023). The post COVID-19 pandemic era: Changes in teaching and learning methods for management educators. *The International Journal of Management Education*, *21*(2), 100777.

Renn, O. (2008). White paper on risk governance: Toward an integrative framework. *Global risk governance: Concept and practice using the IRGC framework*, 3-73.

Resendes, M. (2021). Examining public health risk communication via social media by provincial and local health authorities in Ontario during the COVID-19 pandemic.

Reynolds, B., & Seeger, M. (2005). Crisis and emergency risk communication as an integrative model. *Journal of health communication*, *10*(1), 43-55.

Reynolds, B., & Seeger, M. W. (2005). "Crisis and Emergency Risk Communication as an Integrative Model." *Journal of Health Communication*, 10(1), 43-55.

Reynolds, B., & Seeger, M. W. (2005). Crisis and emergency risk communication as an integrative model. *Journal of Health Communication, 10(1)*, 43-55. https://doi.org/10.1080/10810730590904571

Reynolds, B., & Seeger, W. M. (2020). *CERC manual crisis emergency risk communication*. https://emergency.cdc.gov/cerc/manual/index.asp

Richter, A., & Näswall, K. (2019). Job insecurity and trust: Uncovering a mechanism linking job insecurity to well-being. *Work & Stress*, *33*(1), 22-40.

Robinson, L., Schulz, J., Khilnani, A., Ono, H., Cotten, S. R., McClain, N., Levine, L., Chen, W., Huang, G., & Casilli, A. A. (2020). Digital inequalities in time of pandemic: COVID-19 exposure risk profiles and new forms of vulnerability. *First monday*, *25*(10).

Rodgers, A., Corbett, T., Bramley, D., Riddell, T., Wills, M., Lin, R.-B., & Jones, M. (2005). Do u smoke after txt? Results of a randomised trial of smoking cessation using mobile phone text messaging. *Tobacco control*, *14*(4), 255-261.

Roos, D. (2015). How to Leverage an API for Conferencing. http://money.howstuffworks.com/business-communications/how-to-leverage-an-api-forconferencing1.htm

Roux-Dufort, C. (2007). Is crisis management (only) a management of exceptions? *Journal of contingencies and crisis management*, *15*(2), 105-114.

Rowley, J. (2012). Evidence-based marketing: a perspective on the 'practice-theory divide'. *International Journal of Market Research*, *54*(4), 521-541.

Rubens, D. (2023). *Strategic risk and crisis management: A handbook for modelling and managing complex risks*. Kogan Page Publishers.

Russonello, G. (2020). Afraid of coronavirus? That might say something about your politics. *The New York Times*. https://www.nytimes.com/2020/03/13/us/politics/coronavirus-trump-polling.html

Safarpour, H., Farahi-Ashtiani, I., Pirani, D., Nejati, B., & Safi-Keykaleh, M. (2021). Risk communication in the Covid-19 outbreak: Two sides of the same coin. *Disaster medicine and public health preparedness*, *15*(4), e1-e2.

Salam, A. A., Al-Khraif, R. M., & Elsegaey, I. (2022). COVID-19 in Saudi Arabia: an overview. *Frontiers in Public Health*, *9*, 736942.

Salem, F., & Mourtada, R. (2012). Social media, employment and entrepreneurship: New frontiers for the economic empowerment of Arab youth. *Employment and Entrepreneurship: New Frontiers for the Economic Empowerment of Arab Youth (October 3, 2012)*.

Sanjeev, M., Pande, N., & PK, S. K. (2021). Role of effective crisis communication by the government in managing the first wave Covid-19 pandemic–A study of Kerala government's success. *Journal of Public Affairs*, *21*(4), e2721.

Saudi Arabia Business Directory (2016). *PR in Saudi Arabia* www.saudiayp.com/category/Public_relations

Schiavo, R. (2014). Risk communication: Ebola and beyond. In (Vol. 7, pp. 239-241): Taylor & Francis.

Schillinger, D., Chittamuru, D., & Ramírez, A. S. (2020). From "infodemics" to health promotion: a novel framework for the role of social media in public health. *American journal of public health*, *110*(9), 1393-1396.

Schoofs, L., Claeys, A.-S., De Waele, A., & Cauberghe, V. (2019). The role of empathy in crisis communication: Providing a deeper understanding of how organizational crises and crisis communication affect reputation. *Public Relations Review*, *45*(5), 101851.

Schroeder, A., Pennington-Gray, L., Donohoe, H., & Kiousis, S. (2013). Using social media in times of crisis. *Journal of Travel & Tourism Marketing*, *30*(1-2), 126-143.

Schwarz, A. (2008). Covariation-based causal attributions during organizational crises: Suggestions for extending Situational Crisis Communication Theory (SCCT). *International Journal of Strategic Communication*, *2*(1), 31-53.

Scott, J., & Marshall, G. (2009). *A dictionary of sociology*. Oxford University Press, USA.

Seddighi, H., & Salmani, I. (2020). Twitter functions in COVID-19 pandemic and other natural disasters: A literature review.

Seeger, M. (2020). Crisis communication researcher shares 5 key principles that officials should use in coronavirus. *The Conversation. Available online: http://theconversation. com/crisis-communication-researcher-shares-5-key-principles-that-officials-should-use-in-coronavirus-133046 (accessed on 12 April 2022)*.

Seeger, M. W. (2006). Best practices in crisis communication: An expert panel process. *Journal of applied communication research*, *34*(3), 232-244.

Seeger, M. W., Sellnow, T. L., & Ulmer, R. R. (2003). *Communication and organizational crisis*. Greenwood Publishing Group.

Shahbaznezhad, H., Dolan, R., & Rashidirad, M. (2021). The role of social media content format and platform in users' engagement behavior. *Journal of Interactive Marketing*, *53*(1), 47-65.

Shahi, G., Dirkson, A., & Majchrzak, T. (2020). An exploratory study of COVID-19 misinformation on Twitter. *Online social networks and media*, *22*.

Shaluf, I. M., Fakharu'l-razi, A., & Aini, M. S. (2003). A review of disaster and crisis. *Disaster Prevention and Management*, *12*(1), 24-32.

Sharma, M., Yadav, K., Yadav, N., & Ferdinand, K. C. (2017). Zika virus pandemic—analysis of Facebook as a social media health information platform. *American journal of infection control*, *45*(3), 301-302.

Shen, P. (2020). The Chinese Cognitive Warfare Model: The 2020 Taiwan Election. *Prospect Quarterly*, *22*(1), 1-66.

Shi, H., Han, X., Jiang, N., Cao, Y., Alwalid, O., Gu, J., Fan, Y., & Zheng, C. (2020). Radiological findings from 81 patients with COVID-19 pneumonia in Wuhan, China: a descriptive study. *The Lancet infectious diseases*, *20*(4), 425-434.

Shin, I., Wang, L., & Lu, Y. T. (2022). Twitter and endorsed (fake) news: The influence of endorsement by strong ties, celebrities, and a user majority on credibility of fake news during the COVID-19 pandemic. *International Journal of Communication*, *16*, 2573-2595.

Signorini, A., Segre, A. M., & Polgreen, P. M. (2011). The use of Twitter to track levels of disease activity and public concern in the US during the influenza A H1N1 pandemic. *PloS one*, *6*(5), e19467.

Singh, A. R. (2023). Use of Social Media during Pandemic Situation. *The Impact of the Covid-19 Pandemic on People and their Lives: Socio-Political and Economic Aspects*.

Singh, M. K., & Neog, Y. (2020). Contagion effect of COVID-19 outbreak: Another recipe for disaster on Indian economy. *Journal of Public Affairs*, *20*(4), e2171.

Singh, S. (2020). "We were grateful to have him back"- A parent talks about the impact of COVID19. *BrainGain Mag*. https://www.braingainmag.com/a-parent-talks-about-the-impact-of-covid19.htm

Sinnenberg, L., Buttenheim, A. M., Padrez, K., Mancheno, C., Ungar, L., & Merchant, R. M. (2017). Twitter as a tool for health research: a systematic review. *American journal of public health*, *107*(1), e1-e8.

Sleigh, J., Amann, J., Schneider, M., & Vayena, E. (2021). Qualitative analysis of visual risk communication on twitter during the Covid-19 pandemic. *BMC Public Health*, *21*, 1-12.

Smith, G. (2018). *Modern day propaganda: characteristics of fake news and psychological effects on the public* Utica College].

Smith, G. D., Ng, F., & Li, W. H. C. (2020). COVID-19: Emerging compassion, courage and resilience in the face of misinformation and adversity. *Journal of clinical nursing*, *29*(9-10), 1425.

Smith, K., & Petley, D. N. (2009). *Environmental hazards: Assessing risk and reducing disaster* (5th ed.). Routledge.

Smith, M. J. (2006). Responding to global infectious disease outbreaks: Lessons from SARS on the role of risk perception, communication, and management. *Social Science & Medicine*, *63*(12), 3113-3123.

Smith, M. J., & Upshur, R. E. (2020). Learning lessons from COVID-19 requires recognizing moral failures. *Journal of bioethical inquiry*, *17*, 563-566.

Son, J., Lee, H. K., Jin, S., & Lee, J. (2019). Content features of tweets for effective communication during disasters: A media synchronicity theory perspective. *International Journal of Information Management*, *45*, 56-68.

Srivastava, A. (2022). Rethinking performativity in higher education in a crisis: The case of performative universities' early responses during the COVID-19 pandemic. In *Global Higher Education During and Beyond COVID-19: Perspectives and Challenges* (pp. 149-158). Singapore: Springer Nature Singapore. Lewandowsky, S., Ecker, U. K., Seifert, C. M., Schwarz, N., & Cook, J. (2012). Misinformation and its correction: Continued influence and successful debiasing. *Psychological science in the public interest*, *13*(3), 106-131.

Starbird, K., & Palen, L. (2010). Pass it on?: Retweeting in mass emergency. ISCRAM,

Stark, A., McConnell, A., & Drennan, L. T. (2014). *Risk and crisis management in the public sector*. Routledge.

Statista Research Department. (2022). *Social media as a news outlet worldwide 2023*. https://www.statista.com/statistics/718019/social-media-news-source/

Statista Research Department. (2023). *Mobile internet usage worldwide - Statistics & Facts* https://www.statista.com/topics/779/mobile-internet/#topicOverview

Statistics, G. A. f. (2020). *Population estimates, 2020* https://www.stats.gov.sa/en.

Steckler, A., McLeroy, K. R., Goodman, R. M., Bird, S. T., & McCormick, L. (1992). Toward integrating qualitative and quantitative methods: An introduction. In (Vol. 19, pp. 1-8): Sage Publications Sage CA: Thousand Oaks, CA.

Stephens, K. K., & Malone, P. C. (2009). If the organizations won't give us information…: The use of multiple new media for crisis technical translation and dialogue. *Journal of Public Relations Research*, *21*(2), 229-239.

Sturges, D. L. (1994). Communicating through crisis: A strategy for organizational survival. *Management Communication Quarterly*, *7*(3), 297-316.

Sturmberg, J. P., & Martin, C. M. (2020). COVID-19–how a pandemic reveals that everything is connected to everything else. *Journal of Evaluation in Clinical Practice*, *26*(5), 1361.

Sueki, H. (2015). The association of suicide-related Twitter use with suicidal behaviour: a cross-sectional study of young internet users in Japan. *Journal of affective disorders*, *170*, 155-160.

Sui Pheng, L., Ho, D. K., & Soon Ann, Y. (1999). Crisis management: a survey of property development firms. *Property Management*, *17*(3), 231-251.

Sutton, J. N., Palen, L., & Shklovski, I. (2008). Backchannels on the front lines: Emergency uses of social media in the 2007 Southern California Wildfires.

Swire-Thompson, B., & Lazer, D. (2020). Public health and online misinformation: challenges and recommendations. *Annu Rev Public Health*, *41*(1), 433-451.

Syrdal, H. A., & Briggs, E. (2018). Engagement with social media content: A qualitative exploration. *Journal of Marketing Theory and Practice*, *26*(1-2), 4-22.

Tahamtan, I., Potnis, D., Mohammadi, E., Miller, L. E., & Singh, V. (2021). Framing of and attention to COVID-19 on Twitter: thematic analysis of hashtags. *Journal of medical Internet research*, *23*(9), e30800.

Tang, G., Ren, S., Chadee, D., & Yuan, S. (2020). The dark side of social media connectivity: Influence on turnover intentions of supply chain professionals. *International Journal of Operations & Production Management*, *40*(5), 603-623.

Tang, L., Bie, B., Park, S.-E., & Zhi, D. (2018). Social media and outbreaks of emerging infectious diseases: A systematic review of literature. *American journal of infection control*, *46*(9), 962-972.

Taylor, M., & Kent, M. L. (2014). Dialogic engagement: Clarifying foundational concepts. *Journal of public relations research*, *26*(5), 384-398.

Telg, R. (2010). Risk and Crisis Communication: When Things Go Wrong: WC093/WC093, 7/2010. *EDIS*, *2010*(6).

The Saudi Gazette. (2020, 8 October). Saudi Arabia to continue with distance education: Minister. *The Saudi Gazette*. https://saudigazette.com.sa/article/598919

Tian, Y., & Yang, J. (2022). Deny or bolster? A comparative study of crisis communication strategies between Trump and Cuomo in COVID-19. *Public Relations Review*, *48*(2), 102182.

Titscher, S., Mayer, M., Wodak, R., & Vetter, E. (2009). Text & Discourse Analysis Methods. *Yogyakarta: Student Library*.

Tremblay, S., Castiglione, S., Audet, L.-A., Desmarais, M., Horace, M., & Peláez, S. (2021). Conducting qualitative research to respond to COVID-19 challenges: Reflections for the present and beyond. *International Journal of Qualitative Methods*, *20*, 16094069211009679.

Triantafillidou, A., & Yannas, P. (2020). Social media crisis communication in racially charged crises: Exploring the effects of social media and image restoration strategies. *Computers in human behavior*, *106*, 106269.

Trochim, W., Donnelly, J. P., & Arora, K. (2017). Research Methods: The Essential Knowledge Base.

Tufekci, Z. (2014, May). Big questions for social media big data: Representativeness, validity and other methodological pitfalls. In *Proceedings of the international AAAI conference on web and social media* (Vol. 8, No. 1, pp. 505-514).

Tursunbayeva, A., Franco, M., & Pagliari, C. (2017). Use of social media for e-Government in the public health sector: A systematic review of published studies. *Government Information Quarterly*, *34*(2), 270-282.

Ulmer, R. R., Sellnow, T. L., & Seeger, M. W. (2015). *Effective crisis communication: Moving from crisis to opportunity*. Sage Publications.

Ulmer, R. R., Sellnow, T. L., & Seeger, M. W. (2017). *Effective Crisis Communication: Moving from Crisis to Opportunity*. Sage Publications.

Ulmer, Robert R., Sellnow, Timothy L., & Seeger, Matthew W. (2010). *Effective crisis communication: Moving from crisis to opportunity*. Sage Publications.

UNICEF. (2015). *Lofa County: Communities took the matter in their own hands*. https://www.unicef.org/cbsc/files/Communities_took_the_matter_in_their_own_hands -Lofa(4).pdf.

Utami, D. R. (2021). Community-Based Health Communication: A Strategic Approach to Empower Community Health Sustainability. In *Emerging Research on Health Communication in Asian Countries*. IGI Global.

Van Bavel, J. J., Baicker, K., Boggio, P. S., Capraro, V., Cichocka, A., Cikara, M., ... & Willer, R. (2020). Using social and behavioural science to support COVID-19 pandemic response. *Nature human behaviour*, *4*(5), 460-471.

Van Bavel, J. J., Baicker, K., Boggio, P. S., Capraro, V., Cichocka, A., Cikara, M., ... & Willer, R. (2020). Using social and behavioural science to support COVID-19 pandemic response. Nature human behaviour, 4(5), 460-471.

Van de Belt, T. H., Berben, S. A., Samsom, M., Engelen, L. J., & Schoonhoven, L. (2012). Use of social media by Western European hospitals: longitudinal study. *Journal of medical Internet research*, *14*(3), e1992.

Van der Meer, T. G., & Jin, Y. (2020). Seeking formula for misinformation treatment in public health crises: The effects of corrective information type and source. *Health communication*, *35*(5), 560-575.

Van Dijk, T. A. (2006). Discourse, context and cognition. *Discourse studies*, *8*(1), 159-177.

Van Dijk, T. A. (2009). *Society and discourse: How social contexts influence text and talk*. Cambridge University Press.

Vaughan, E., & Tinker, T. (2009). Effective health risk communication about pandemic influenza for vulnerable populations. *American Journal of Public Health*, 99(S2), S324-S332. https://doi.org/10.2105/AJPH.2009.162537

Veil, S. R., Buehner, T., & Palenchar, M. J. (2011). A work-in-process literature review: Incorporating social media in risk and crisis communication. *Journal of contingencies and crisis management*, *19*(2), 110-122.

Veil, S. R., Sellnow, T. L., & Petrun, E. L. (2012). Hoaxes and the paradoxical challenges of restoring legitimacy: Dominos' response to its YouTube crisis. *Management Communication Quarterly*, *26*(2), 322-345.

Verhoeven, P., Tench, R., Zerfass, A., Moreno, Á., & Verčič, D. (2014). Crisis? What crisis?: How European professionals handle crises and crisis communication. *Public Relations Review*, *40*(1), 107-109.

Vigil on Social Media. *Deccan Herald*. https://www.deccanherald.com/india/as-fake-news-on-coronavirus-spreads-kerala-police-tightens-vigil-on-social-media-812299.html

Vision 2030. (n.d.). Health Sector Transformation Program. https://www.vision2030.gov.sa/en/explore/programs/health-sector-transformation-program

Vito, D., Lauriola, P., & D'Apice, C. (2022). The COVID-19 pandemic: Reshaping public health policy response envisioning health as a common good. *International Journal of Environmental Research and Public Health*, 19(16), 9985.

Vos, S. C., Sutton, J., Yu, Y., Renshaw, S. L., Olson, M. K., Gibson, C. B., & Butts, C. T. (2018). Retweeting risk communication: the role of threat and efficacy. *Risk analysis*, *38*(12), 2580-2598.

Walliman, N. (2021). *Research methods: The basics.* Routledge.

Wang, X., Chao, F., Yu, G., & Zhang, K. (2022). Factors influencing fake news rebuttal acceptance during the COVID-19 pandemic and the moderating effect of cognitive ability. *Computers in human behavior*, *130*, 107174.

Wang, Y., Hao, H., & Platt, L. S. (2021). Examining risk and crisis communications of government agencies and stakeholders during early-stages of COVID-19 on Twitter. *Computers in human behavior*, *114*, 106568.

Waters, R. D., Burnett, E., Lamm, A., & Lucas, J. (2009). Engaging stakeholders through social networking: How nonprofit organizations are using Facebook. *Public Relations Review*, *35*(2), 102-106.

Weick, K. E. (1988). Enacted sensemaking in crisis situations [1]. *Journal of management studies*, *25*(4), 305-317.

Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological review*, *92*(4), 548.

WHO. (2018). *Communicating risk in public health emergencies: a WHO guideline for emergency risk communication (ERC) policy and practice.* https://www.who.int/publications/i/item/9789241550208

WHO. (2020). *Immunizing the public against misinformation 2020*. https://www.who.int/news-room/feature-stories/detail/immunizing-the-public-against-misinformation,

WHO. (2020a). *Rolling updates on coronavirus disease*. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports.

WHO. (2020c). *WHO Director-General's opening remarks at the media briefing on COVID-19*. W. H. Organisation. https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020

WHO. (2021). *Social isolation and loneliness* https://www.who.int/teams/social-determinants-of-health/demographic-change-andhealthy-ageing/social-isolation-and-loneliness

Williams, T. A., Gruber, D. A., Sutcliffe, K. M., Shepherd, D. A., & Zhao, E. Y. (2017). Organizational response to adversity: Fusing crisis management and resilience research streams. *Academy of management annals*, *11*(2), 733-769.

Witte, K., & Allen, M. (2000). A meta-analysis of fear appeals: Implications for effective public health campaigns. *Health education & behavior*, *27*(5), 591-615.

Wodak, R. (2009). *The Discourse of Politics in Action: Politics as Usual.* Palgrave Macmillan.

Wodak, R., & Meyer, M. (2015). *Methods of critical discourse studies*. Sage.

World Bank. (2012). *Data: Saudi Arabia*. http://data.worldbank.org/country/saudi-arabia

World Health Organization (2020). Coronavirus disease (COVID-19) pandemic. WHO Timeline, available at https://www.who.int/emergencies/diseases/novel-coronavirus-2019/interactive-timeline

World Health Organization (WHO). (2020). Managing the COVID-19 infodemic: Promoting healthy behaviours and mitigating the harm from misinformation and disinformation. WHO. https://www.who.int/news/item/23-09-2020-managing-the-covid-19-infodemic

World Health Organization. (2020). *COVID-19 Strategy Update*. Available at: https://www.who.int/publications-detail/covid-19-strategy-update-13-april-2020

World Health Organization. (2020). WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020. Available at: https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020

Wouters, O. J., Shadlen, K. C., Salcher-Konrad, M., Pollard, A. J., Larson, H. J., Teerawattananon, Y., & Jit, M. (2021). Challenges in ensuring global access to COVID-19 vaccines: production, affordability, allocation, and deployment. *The Lancet*, *397*(10278), 1023-1034.

Wukich, C., & Mergel, I. (2016). Closing the citizen-government communication gap: Content, audience, and network analysis of government tweets. *Journal of Homeland Security and Emergency Management*, *12*(3), 707-735.

Xie, L., Pinto, J., & Zhong, B. (2022). Building community resilience on social media to help recover from the COVID-19 pandemic. *Computers in human behavior*, *134*, 107294.

Xu, L., Qiu, J., Gu, W., & Ge, Y. (2020). The dynamic effects of perceptions of dread risk and unknown risk on SNS sharing behavior during EID events: Do crisis stages matter. *Journal of the Association for Information Systems*, *21*(3), 545-573.

Yezli, S., & Khan, A. (2020). COVID-19 social distancing in the Kingdom of Saudi Arabia: Bold measures in the face of political, economic, social and religious challenges. *Travel medicine and infectious disease*, *37*, 101692.

Yi, Z., & Cui, Y. (2019). How Do Multiple and Emotional Reviews Affect the Perceived Helpfulness of Online Reviews? The Case of TripAdvisor. *Journal of Travel & Tourism Marketing*, *36*(5), 591-606.

Zaid, B., Fedtke, J., Shin, D. D., El Kadoussi, A., & Ibahrine, M. (2022). Digital Islam and Muslim millennials: How social media influencers reimagine religious authority and Islamic practices. *Religions*, *13*(4), 335.

Zeemering, E. S. (2020). What Are We Talking About When We Talk About social media? Definitions and Research Boundaries in Public Administration. *American Review of Public Administration*, *50*(6-7), 570-581.

Zhang, H. (2022). The influence of the ongoing COVID-19 pandemic on family violence in China. *Journal of family violence*, *37*(5), 733-743.

Zhao, X. (2020). How China's State Actors Create a" Us vs US" World during Covid-19 Pandemic on Social Media. *Media and Communication*, *8*(2), 452-457.

Zhao, Y., Cheng, S., Yu, X., & Xu, H. (2020). Chinese public's attention to the COVID-19 epidemic on social media: observational descriptive study. *Journal of medical Internet research*, *22*(5), e18825.

Zhu, S., Feng, S., Ning, X., & Zhou, Y. (2022). Analysis of China's fight against COVID-19 from the perspective of policy tools—policy capacity. *Frontiers in Public Health*, *10*, 951941.

Zimal, L. A., & Aysar, A. A. (2021). Public Relations Strategy Analysis Crisis Communications. *Journal La Sociale*, *2*(3), 1-8.

Zimmerman, R. S., DiClemente, R. J., Andrus, J. K., & Hosein, E. N. (2016). *Introduction to global health promotion*. John Wiley & Sons.

Zrieq, R., Kamel, S., Boubaker, S., Algahtani, F. D., Alzain, M. A., Alshammari, F., Alshammari, F. S., Aldhmadi, B. K., Atique, S., & Al-Najjar, M. A. (2022). Time-Series Analysis and Healthcare Implications of COVID-19 Pandemic in Saudi Arabia. Healthcare,

Zviadadze, S. (2014). I 'like'my patriarch. Religion on Facebook. New forms of religiosity in contemporary Georgia. *Online-Heidelberg Journal of Religions on the Internet*, *6*.

Appendices

Appendix 1: The 100 posts of MoH

ID	Comments	Retweets	Likes	date	post
MOH 1	6076	47966	37536	27/03/2020	The huge crises would be controlled if we all united together, a message from Health minster #protectyourself from Corona (multiple languages)
MOH 2	4197	24108	29462	06/06/2020	Moh: The news regarding a new corona virus record is wrong. The situation is under control, and we have an eye on it. (multiple languages)
MOH 3	4047	19198	7204	13/04/2020	#Breaking king Salman and the other guardian of the Kingdom are keen on the health and safety of their nation. The situation is under control. Trust us, we are doing our best. #كلنا
MOH 4	4014	17932	7413	06/06/2020	Within 45 seconds only. The fast-track service for examination of the new Corona virus is allocated on different platforms. #We are all
MOH 5	3603	8751	6329	30/04/2020	Trust Allah if if you are believers. Do your best and every one of us should have a sense of responsibility in order to maintain the health and homeland. # All of us.
MOH 6	3277	7657	6623	07/06/2020	Highlights of the press conference for the official spokesman of the Ministry of Health
MOH 7	3227	7356	19140	30/03/2020	the custodian of the two Holy Mosques and his Highness the Crown Prince decided to stop the Friday congregational prayer and exclude the two holy mosques
MOH 8	2870	6775	7086	20/04/2020	My dear brothers and sisters, be sure about the method of prevention. Take care of your health and those you love. Wash your hands regularly, wear the mask, and keep your distance.
MOH 9	204	6775	1201	29/03/2020	Highlights of the press conference for the official spokesperson of the Ministry of Health

MOH 10	2862	6524	6534	19/06/2020	HIGHLIGHTS Of the Press Conference of the Official Spokesperson.
MOH 11	155	6524	4904	11/06/2020	All of you, please follow the protocols and prevention guidance regarding corona virus. "All of us (multiple languages)
MOH 12	2777	6347	14830	29/07/2020	We know you are all excited about the Eid celebration. Please do not let your celebration of Eid is a source of risk. We can prompt and rejoice and meet our hearts with the application of safe spaces and commitment to health behaviours (multiple languages)
MOH 13	1167	6347	5143	10/06/2020	To Stop the Spread of the Virus and Protect Those Around You, Isolate Yourself AS Soon as You Experience Symptoms Such As Fever Or Shortness of Breath And Contact (Moh) 937 # Covid19 (multiple languages)
MOH 14	2706	6257	6828	15/06/2020	The Kingdom is among the world's distinct countries in applying tests and also in controlling so far in terms of statistics of the number of people affected with corona. This indicates our excellent policy of controlling the spread of corona virus. thanks to the impact of the application of proactive precautionary measures.
MOH 15	333	6257	4041	29/05/2020	Maintain your trust in God during this hard situation, do not follow the non-experienced individuals as it causes health trouble in your society, May God save us.
MOH 16	2685	6247	6391	25/05/2020	Total number of cases reached 2385 case with 100 new Corona virus (Covid 19), recording (5) cases of mortality God, and registration (68) recovery status to become total limit (488).
MOH 17	829	6247	4917	01/04/2020	We reaffirm the importance of taking information from its official sources and do not believe in the rumours. All information regarding the new

					coronavirus variant is announced through official sources through the Saudi News Agency and the daily press conference. (multiple languages)
MOH 18	2558	6199	6576	20/25/2020	Continuing for the efforts of #Volunteer Heroes and government integration, volunteering was launched and aimed at sharing society in achieving health volunteering.
MOH 19	2498	6133	6902	07/06/2020	To every health practitioner, your safety is concerned. We are grateful to your services and people support you. #Prevention_kurona
MOH 20	1462	6133	5719	11/04/2020	Highlights of the press conference for the official spokesman of the Ministry of Health
MOH 21	2390	6113	5813	20/08/2020	Do not open your home for infection. Beware of dealing with people outside that transmit the infection for you and your family. #Prevent_yourself from corona #Allofus.
MOH 22	220	6113	4445	02/12/2020	We thank our people from the heart. Peace and blessings of Allah be upon you.
MOH 23	2297	6088	14085	12/05/2020	We will see the good days with good health if you follow preventive measures. Allah will help us. Just follow the rules and stay away from the gatherings.
MOH 24	246	6071	1900	22/05/2020	Eid Mubarak! We should pray and celebrate Eid-ul-Fitr this time in our homes and avoid gathering in congregations at the mosque.
MOH 25	2222	6050	6932	29/03/2020	be aware of trading rumours about the new Corona virus. The right information is only available at official platforms (multiple languages)
MOH 26	143	6050	4598	19/04/2020	Not Everything You Read on the Internet about #Coronavirus is true. Here are A Few Common Myths. #Covid19
MOH 27	2142	6028	6386	15/05/2020	SOME Jobs Carry A Higher Risk of # Covid19 Transmission. Please take care of your health and follow the protocols. Use protective measures and keep the distance.

MOH 28	414	6028	6512	15/04/2020	The information regarding the new COVID-19 virus (COVID-19) variant has been updated on all government websites. We will keep the masses updated. Keep an eye the next update will be at 4 pm.
MOH 29	2028	6024	6613	10/07/2020	Restaurants and shopping malls are high at risk. Avoid gathering at shopping malls and restaurants and use delivery options instead, (multiple languages)
MOH 30	1909	6024	3274	09/04/2020	The total number of Covid-19 cases has reached 2523, 4 deaths and 63 recovery cases are recorded.
MOH 31	1094	6024	6273	06/04/2020	Highlights of the press conference for the official spokesman of the Ministry of Health
MOH 32	1115	6024	5523	03/06/2020	My brother and resident, isolate yourself immediately when you have symptoms of coronavirus. For your health and for your community We wish you health and wellness. #weurealltogother
MOH 33	1980	6010	5736	05/04/2020	Learn about the right way to receive the right information. # Prevention_corona
MOH 34	1180	6010	4977	05/04/2020	Easy and simple steps you can protect your health and your family's health by booking an appointment of "Corona Test". #All of us (multiple languages)
MOH 35	1915	6004	10017	15/05/2020	speech of Health Minister. #We are ultrated
MOH 36	771	6004	4949	12/05/2020	Please have patience; we will see the good days with good health. Trust Allah if you are a believer. Allah will help us. Just follow the rules and stay away from the gatherings
MOH 37	999	5998	5057	30/03/2020	stay home, Stay live (multiple languages)
MOH 38	634	5994	5682	21/04/2020	If my servants ask me, I am close to them. (Quranic verse)
MOH 39	1825	5980	5815	06/05/2020	The correct attitude when you feel the symptoms of the new Corona virus, isolate yourself and call 937 # We are all together. (multiple languages)

MOH 40	143	5980	4547	27/05/2020	Dear brother, my dear sister: Be sure about the methods of prevention. Take care of your health and those you love. Follow protocols of prevention.
MOH 41	1685	5894	9444	13/05/2020	Clarification: The number of cases registered on April 7 is 327 as follows: 190 cases were announced within the press conference yesterday in the beginning of conference. At the end of April 7, 137 more cases were announced.
MOH 42	6076	5894	4515	28/09/2020	When neglecting preventive instructions, you are at risk!
MOH 43	1682	5883	5441	31/05/2020	Do you know what is the nearest health centre for you? Via Watts AP # Health_937 You will know immediately, through the link:
MOH 44	333	5869	8547	05/04/2020	Learn about the right way to receive the right information. Pls follow health care rules on MoH website #Korona (multiple languages)
MOH 45	166	5869	608	10/06/2020	To Stop the Spread of the Virus and Protect Those Around You, isolate yourself as soon as You Experience Symptoms Such As Fever Or Shortness of Breath And Contact (Moh) 937 #Covid19
MOH 46	679	5838	5403	09/11/2020	The pandemic continues and the virus exists but thank God the situation is better. Please continue to follow the preventive guidelines to protect yourself and your loved one. #Allofus (multiple languages)
MOH 47	1662	5834	5916	21/05/2020	We are all responsible. Please take care of your hygiene. Wash your hands frequently as cleanliness is half of our faith (multiple languages)
MOH 48	752	5834	4087	22/06/2020	Tips on Heart Health, with Dr. Abdul Rahman Al Qahtani via live broadcast tomorrow Sunday, 19 Apr 2020 at 1 pm.
MOH 49	1650	5817	8768	02/04/2020	Following are the hours of preliminary health care centres during the month of Ramadan. Please check the timings in your areas.

MOH 50	895	5795	12307	03/05/2020	Before you go shopping, here are some important guidelines that can help you in the prevention of corona virus. Please follow the guidelines and take care of your health and your loved ones. (multiple languages)
MOH 51	537	5790	6007	29/04/2020	Tips for diabetics in # Ramadan, with Dr. Nagi Al-Juhani via live broadcast on Wednesday, 22 Apr 2020 at 1 pm.
MOH 52	1500	5780	5945	23/03/2020	based on the guidance of the Minister of Health, it is our national duty to follow the preventive measures against Coronavirus. Download the application and book your appointment.
MOH 53	1456	5778	6348	01/05/2020	How to Safely Receive Packages and Deliveries? # Covid19 (multiple languages)
MOH 54	1447	5750	5775	01/11/2020	Our doctors are our heroes. Heroes know the meaning of responsibility and work. The entire nation thanks them for their services
MOH 55	1441	5743	6157	13/05/2020	Within 45 seconds only .. The fast track service for examination of the new Corona virus is allocated on different platforms. # We are all: (multiple languages)
MOH 56	1415	5699	5677	21/05/2020	When You Should Be Quarantine? # Covid19 (multiple languages)
MOH 57	1323	5668	5588	10/12/2020	Maintain your trust in God during this critical situation, do not follow the individuals for sensation as it can create health trouble in your homeland, May God save us.
MOH 58	246	5644	3488	01/06/2020	IF You Experience Any Symptoms, Please Head to The Nearest Healthcare Facility to Receive the Required Treatment Free of Charge. #Covid19 (multiple languages)
MOH 59	1135	5508	6515	16/06/2020	The Ministry of Health launches awareness campaign aimed at social spacing and leaving a distance. (multiple languages)

MOH 60	1104	5454	5581	21/06/2020	We warn of trading rumours about the new Corona virus. The right information is only available at official platforms
MOH 61	811	5412	16347	30/04/2020	Continuing for the efforts of # Volunteer Heroes and government integration, @h_volunteering was launched and aimed at sharing society in achieving health volunteering.
MOH 62	759	5386	8123	11/04/2020	# Health announces recording (355) new cases of new Corona (Kovid 19), and registration (3) cases of death of them, and registration (35) recovery (666) and Praise be to God.
MOH 63	720	5302	7982	13/04/2020	The spread of virus faster than imagined! And you will put him an end. All of us needs to be a responsible citizen. # All of us (multiple languages)
MOH 64	701	5159	7751	24/06/2020	Staying at Home Reduces the Spread of the New Coronavirus. # Covid19 (multiple languages)
MOH 65	612	5096	10579	21/07/2020	A Handy Guide to Home Quarantine. # Covid19") (multiple languages)
MOH 66	382	4991	8153	02/08/2020	In response to your initiatives and desire to invest, we found here to join the spirit of tender across the sanitary volunteer platform.
MOH 67	294	4909	2551	09/04/2020	8 Steps to Protect Yourself From # coronavirus
MOH 68	1341	4666	7340	23/07/2020	We stress the importance of dimension on gatherings. We are still in the end stage. Please keep distance between you and the others. Please arrange gathering in a big space. Have 1 meter distance in order to prevent the new Corona infection. (multiple languages)
MOH 69	93	4637	700	18/07/2020	#Ramadan Before you go shopping, here are some important guidelines that can help you in the prevention of coronavirus. Please follow the guidelines and take care of your health and your loved ones. (multiple languages)

MOH 70	1355	4572	6085	09/04/2020	To our children and our daughters who are returning to the homeland We wish you a safe and healthy journey. Please follow all guidelines.
MOH 71	1860	4547	5712	13/05/2020	The number of laboratory tests for the new Corona virus (Kovid-19) in the Kingdom until April 8 examined 115,585 at 10 laboratories around the Kingdom using the molecular polymerization technology, at a rate of 3340 examination per million people.
MOH 72	1202	4488	6654	12/05/2020	Absher Ya Watan #Allweare responsible. Please take care of your hygiene. Wash your hand frequently, as cleanliness is half of our faith. (multiple languages)
MOH 73	111	4456	3098	20/08/2020	Do not open your home for infection. Beware of dealing with people outside that transmit the infection for you and your family. #Prevention_corona #All of us (multiple languages)
MOH 74	3227	4445	1009	02/03/2020	Efforts are made to achieve public interest, which came with decisive decisions in order to save lives, do not cause the epidemic outbreak.
MOH 75	577	4442	7616	03/06/2020	After Eid al-Fitr, we recorded a significant increase in Corona's injuries. In this feast, visit your loved ones, and for your safety, please commit.")
MOH 76	255	4420	1701	21/06/2020	The MOH is not forwarding any messages on the WhatsApp group. All information on the new coronavirus variant was issued by the account of the official ministry and the Saudi News agency and the daily press conference only (multiple languages)
MOH 77	111	4388	5040	26/05/2020	# Health announces recording (382) new cases of new Corona virus (Kovid 19), recording (5) cases of mortality God, and recording (35) recovery status to become total limit (720).
MOH 78	3227	4387	3009	11/04/2020	#The ministry of Health are arranging 100 new fully equipped beds on the emergency basis in many hospitals. #Ministry of Health.

MOH 79	573	4221	5725	17/06/2020	The Ministry of Health gives you the best information source regarding corona test. Download the application and book your appointment. (multiple languages)
MOH 80	419	4217	5433	20/08/2020	we are updating our X page about all policies instantly. We are not forwarding any messages on the WhatsApp group (multiple languages)
MOH 81	155	4179	6476	12/04/2020	{And whoever safes someone's life as if he/she safes all peoples' life} (Quranic verse), donate to rescue (3) peoples' life, book an appointment to donate blood through blood bank on MOH website.
MOH 82	892	4136	4744	11/04/2020	From our operating rooms to your houses, thank you. We are only providing information regarding corona virus on official website and official twitter handler. # We are all together
MOH 83	2222	4132	4367	01/09/2020	The government made efforts to achieve public interest, which came with the decisive decision in order to save lives, do not cause the epidemic outbreak
MOH 84	246	4130	8321	24/06/2020	Pregnant and worried about coronavirus? Stay Safe with These Tips #Covid19
MOH 85	143	4041	1978	17/09/2020	Thanks to God, today the number of recovery has exceeded the number of active situations. The situation is getting better and people are getting better. Please take care of yourself and your loved ones.
MOH 86	1204	4010	5189	03/06/2020	If each person committed to wearing a mask when leaving from home, we will mitigate the transmission too much. Please commit to wearing a mask. When you find a non-committed person, remind him. God saves you all. (multiple languages)
MOH 87	1143	3841	5904	13/04/2020	Speaker of the Ministry of Health: Through (6) steps and (6) questions early discovery of more than (40)

					case infected via # test_kurona through appointment. Download health application.
MOH 88	986	3833	4758	10/12/2020	Many of your daily activities have health protocols that maintain your safety and integrity of your community; Know them now. # We return
MOH 89	906	3780	4636	13/04/2020	How to Properly Wear A Face Mask? # Covid19 (multiple languages)
MOH 90	112	3471	1899	23/05/2020	I hope you do not want the joy of the Eid is a source of at risk. We can prompt and rejoice and meet our hearts with the application of safe spaces and commitment to health behaviours. Every year and you are in health and wellness.
MOH 91	678	3470	1901	09/04/2020	Protect yourself and for those around you. You must disclose if you contract virus. Please protect your family. # All of us (multiple languages)
MOH 92	283	1691	2546	26/09/2020	# Health announces registration (1701) new cases of new Corona virus (Kovid 19), recording (10) cases of mortality God, and registration (1322) recovery (9120)
MOH 93	266	1668	2489	24/09/2020	# Health announces (1704) new cases of new Corona virus (Kovid 19), recording (10) cases of mortality God and (1024) recovery.
MOH 94	94	1667	668	05/04/2020	Prophet Mohammad peace be upon him, said: (It is enough of a lie for a person to narrate everything he hears) sharing incorrect news negatively reflects on the awareness efforts provided by the competent authorities. end to every rumour. #We_are_all_responsible
MOH 95	109	1598	2983	12/06/2020	Thanks a lot, to our health heroes who work in frontline of the covid-19
MOH 96	1651	1550	3547	17/06/2020	If you feel any corona symptoms, please go immediately to the nearest Tetamen clinic (assuring clinic) (multiple languages)

MOH 97	221	1500	2267	29/05/2020	To protect yourself and others at the public places pls cover up your nose and mouth by medical or fabric mask. (multiple languages)
MOH 98	106	1487	1460	08/04/2020	Please keep a safe distance #protectionofcorona (multiple languages)
MOH 99	101	1482	2814	05/08/2020	Home isolation is for the infected person and its duration is (10) days, while home quarantine is for the person who was in contact with the confirmed case and its duration is (14) days. This video explains through an example of a family whose member was infected (multiple languages)
MOH 100	117	1071	1269	20/04/2020	In addition to previous activities of delivery, new policies include restaurant delivery services as well. We urge you to choose delivery instead of dining in. Save yourself and protect your loved ones. The vaccine may take up to three months to get ready

Appendix 2: The 100 posts of MoE

ID	Comments	Likes	Retweets	date	post
MOE 1	700	99	5451	21/05/2020	Director General of # Education adopts the beginning of the implementation of the Jeddah Distance Education Award within educational supervision management initiatives, which aims to stimulate teachers and educationists on distinguished educational practices in distance learning according to specific criteria.
MOE 2	782	5354	2648	16/06/2020	SOME Jobs Carry a Higher Risk of # Covid19 Transmission. Please take care of your health and follow the protocols. Use protective measures and keep your distance. (multiple languages)
MOE 3	337	5354	2361	14/04/2020	the MOE approves the shutdown of all the universities of the Kingdom considering the Covid-19 pandemic
MOE 4	700	4274	1872	30/04/2020	The educational activities are suspended. Teaching will be held via Zoom. #MOE #zoom
MOE 5	943	3849	1861	11/05/2020	Recommendations and advice for parents and students include studying remotely in a safe environment during the educational process. # We're all responsible. (multiple languages)
MOE 6	286	3849	1848	13/04/2020	The MOE sets up telephonic consultations (student consulting management) in all governorates and regions to answer students' educational and psychological concerns and questions
MOE 7	246	3002	1841	21/04/2020	The Ministry of Education has continued to deliver textbooks for education departments in various regions and governorates of the Kingdom, according to a time plan for distribution, with the application of all the precautionary measures of the Corona virus. https://t.co/8xn3c0l29x

MOE 8	761	2999	1781	23/07/2020	We stress the importance of dimension in gatherings. We are still in the end stage. Please keep a distance between you and the others. Please arrange a gathering in a big space. Have a 1-meter distance to prevent the new Corona infection
MOE 9	29	506	1710	14/03/2020	#The Ministry of Education extends its congratulations to you as the holy month of Ramadan approaches, Ramadan Mubarak! stay safe.
MOE 10	297	3786	1710	04/06/2020	The tutorial of the twelfth grade will be broadcast at 6 o'clock via Al-Ain channels. #remoteaching, #remotelearning.
MOE 11	545	3504	1673	30/04/2020	E-learning improves the learning outcomes. The future makes the difference # Studytime")
MOE 12	293	1557	1658	03/05/2020	The learning will flourish; we are preparing plans for our students
MOE 13	140	1178	1580	20/05/2020	a lot of communication between educators and learners while there was a study break. More than three million students use interactive educational sites to complete their calendar procedures.
MOE 14	154	2105	1577	05/06/2020	Although we are back, we are committed to following health protocols against the coronavirus. Keep 2 meters distance and wear the mask.
MOE 15	101	1161	1529	16/04/2020	#The Minister of Education assists those who choose to return to their country and expresses gratitude to Mr. Crown Prince and the Custodian of the Two Holy Mosques for their interest in their daughters and children.
MOE 16	286	1476	1527	10/03/2020	Please can everyone stay calm
MOE 17	71	1146	1518	06/09/2020	The educational portal is developed for Self-evaluation and educational materials to serve the students' demands. # All of us
MOE 18	100	1114	1516	16/06/2020	#Report #Ministry of Education organised several initiatives in the fields of training, enrichment

					activities, health awareness, remote teaching, and volunteering skills, during pandemic #Corona
MOE 19	59	961	1492	31/08/2020	Good partnership between family and school achieved a successful learning and results in distance learning. #Education (multiple languages)
MOE 20	198	1923	1437	02/07/2020	The education minister declared at the start of the symposium "Strengthening National Enhancement of Crisis" that "we will not allow the exploitation of educational institutions to promote radical thought, the deployment of state policy, and directions.
MOE 21	131	958	1389	02/05/2020	With a remote education we build the homeland and protect the generations .. #All of us (multiple languages)
MOE 22	306	958	1272	05/06/2020	# The Minister of Education participates in the extraordinary meeting of the General Conference of the Arab Education Office for Remote States. https://t.co/lp8wczScyuu
MOE 23	72	932	1107	08/09/2020	Part of the activation of interactive classes of teachers with their students in online Platform
MOE 24	91	883	1040	28/09/2020	Over a period of a year, Ministry of Education Projects established new records for the construction, maintenance, and operation of school buildings to better serve students.
MOE 25	193	1687	955	03/05/2020	Since the study comments a month ago, while on a distance learning trip, the Ministry of Education has not yet been impacted and will continue until the end of the semester.
MOE 26	759	940	955	10/04/2020	MOE A special flight is arranged for the transfer of students from abroad
MOE 27	80	940	908	05/04/2020	Institute of Professional Development in the MOE launches a remote teaching training platform and business partnership with universities to sustain the development process for teachers. #remoteaching, #remotelearning.

MOE 28	94	778	866	23/05/2020	The best way to reduce risk is to avoid social contact. Eid Mubarak!
MOE 29	110	951	859	03/03/2020	More than 36 million certificates are saved on # system and 10 million users within digital transformation achievements in education https://t.co/tkrm8seoap https://t.co/u2jcjamsnz
MOE 30	725	820	818	11/12/2020	How do teachers use learning tools effectively to succeed the distance educational journey? https://t.co/pguwWyFHE6")
MOE 31	420	464	818	14/03/2020	To learn more, kindly follow the official health channel. The quarantine: what is it? (multiple languages)
MOE 32	29	440	767	11/08/2020	#The Ministry of Education uses its website to show the controls that extend the time for sending out educational jobs.
MOE 33	383	440	767	27/10/2020	Love the profession, and passionate education. lead a teacher to creativity, creating an interactive educational environment from his home.
MOE 34	330	594	761	02/06/2020	Every day new cases of # Corona virus is recorded! Your cooperation with the security workers is recorded A major step of prevention and reduce its spread. # Staysafe #weAll are responsible (multiple languages)
MOE 35	496	1113	656	27/05/2020	Under the leadership of the Minister of Education, all of our schools have a special and wonderful coherence.
MOE 36	138	738	656	29/05/2020	emphasised the heartfelt congratulations to the servant of the Custodian of the Two Holy Mosques and for His Highness the Crown Prince - God save them - on Eid al-Fitr, may Allah accept your prayers and fasting, Eid Mubarak! on behalf of all the staff members of educational institutions, universities, and technical training colleges.
MOE 37	603	2165	651	23/05/2020	We (the MOE) are working with relevant authorities to show that the power is not concentrated at one

					point. It is distributed among different departments, and all of these relevant departments are active in helping their people.
MOE 38	120	204	651	31/10/2020	The Ministry of Education continues to receive participations for my school competition and share 41,000 content at communication accounts.
MOE 39	242	620	646	26/03/2020	Teaching activities are suspended. Many educational institutions are converted into health centre, which includes seven wings with 69 beds. The administrative services are provided to fight Corona Virus
MOE 40	17	752	615	28/09/2020	The official spokesman for the General Education for the news channel after the end of the academic year: We have achieved our strategic goal in the continuation of the educational process during the pandemic of Corona.
MOE 41	66	867	604	04/04/2020	Education staffs' efforts to success, and health for our children and daughters in all stages, to achieve their ambitions and service their homeland, thanks to university managers and faculty members on their efforts.
MOE 42	91	107	604	23/12/2020	Al Jouf prince is visiting the Department of Education and thanks them for their efforts during the pandemic #Corona
MOE 43	497	394	521	18/08/2020	The National E-Learning Centre is organizing a remote training for teachers and educationists
MOE 44	22	493	501	10/05/2020	guidelines for safe application use when attending meetings, lectures, and classes. The time zone is GMT +3.
MOE 45	190	903	484	27/03/2020	The MOE decides to turn the student's house 20 rooms into 100 beds hospital to serve the homeland, citizens, and residents as part of efforts to reduce the spread of the coronavirus. #Virus_cosrona

MOE 46	239	460	484	27/05/2020	Under the leadership of the Minister of Education, all of our schools have a special and wonderful coherence.
MOE 47	508	381	441	30/06/2020	Avoid Crowds and stay at least 2 meters from others
MOE 48	170	849	409	03/06/2020	My brother and resident, isolate yourself immediately when you have symptoms of coronavirus. For your health and for your community
MOE 49	59	696	409	21/05/2020	Under the title "Educational systems in the face of crises and disasters - Kovid 19," which includes participation from 43 countries and 12 international organisations, the Minister of Education is in control of the virtual extras of education and education ministers in ISESCO.
MOE 50	904	543	409	20/08/2020	Do not open your home for infection. Beware of dealing with people outside that could transmit the infection to you and to your family(multiple languages)
MOE 51	40	393	409	23/07/2020	We reaffirm the importance of taking information from its official sources and do not believe in rumours. All information regarding the new coronavirus variant is announced through official sources through the Saudi News agency and daily press conference,
MOE 52	39	488	368	12/06/2020	Keep up with an education initiative, stay safe
MOE 53	250	1051	354	21/05/2020	Our students, we are glad to provide you, a secure guidance for online education.
MOE 54	35		354	05/05/2020	To support the defence efforts, over 600 volunteers, educators, managers, leaders, school administrators, and supervisors are prepared. #Corona #All of us
MOE 55	17	142	335	22/04/2020	Over 390 free remote training courses offer technical instruction as the first step in the training work.

MOE 56	69	669	324	07/06/2020	we Continuing to Process #online-evening-Learning for our students.
MOE 57	123	390	324	20/04/2020	Many thanks to colleagues, academic institutions, and government agencies for providing injured people with medical care, housing, logistical health insulation, and support for national duty, and public for their corporation in following instructions
MOE 58	41	240	322	07/06/2020	# Awareness For the sake of your health, citizens residents. To keep you healthy and Your community. follow health's guidelines (multiple languages)
MOE 59	623	215	256	27/03/2020	Table of lessons for the eleventh week (I, II, II, and III) can be accessed through the YouTube channel link or live broadcast on Ain channels on IRSAT 12437 vertical frequency from 8 am to 12:30 and again throughout the day.
MOE 60	65	290	240	05/05/2020	The official spokesman at the daily press conference of the Virus #Corona: please follow health rules, protect yourself and your family (multiple languages)
MOE 61	36	641	238	10/05/2020	Thank you to every teacher who tries to provide distance learning education and feel responsible at the time of the national crisis
MOE 62	14	245	238	03/07/2020	During its opening and remote workshops to develop "diagnostic tools" and "therapeutic techniques," with the participation of Dr. Abdullah Al-Rabiah and attending 562 academic researchers, the Minister of Education affirms the unification of national research efforts to address the #Corona virus.
MOE 63	16	238	238	01/12/2020	The Ministry of Education displays potential routes back to the main workplace; To reduce traffic and its intensity, emphasises the significance of taking safety precautions to protect everyone's safety. #Were back
MOE 64	44	670	219	04/05/2020	The Tutorial for the Eight grade will be broadcasted live at 07:00 pm. #remoteaching, #remotelearning

MOE 65	201	2050	219	05/11/2020	#We're back, and we're determined to follow safety precautions given the increased risk of the coronavirus.
MOE 66	405	271	202	20/11/2020	The Minister of Education discusses with university presidents of admission criteria for the next university year
MOE 67	203	207	194	20/06/2020	How to Safely Receive Packages and Deliveries? #Covid-19 (multiple languages)
MOE 68	258	670	189	18/11/2020	At the start of the current academic year (7658 students), more than (121) million riyals have been terminated and equipped (16) new school projects for educational benefit within the framework of supporting wise leadership and sponsoring the students to finish their courses. #Department of Education
MOE 69	432	543	189	30/11/2020	Thank you, teachers, for your efforts. They contributed to facilitating educational alternatives for students. #MOE
MOE 70	22	179	189	15/05/2020	The Ministry of Education concludes the Holy Quran Competition.
MOE 71	260	179	189	12/05/2020	Please have patience; we will see the good days with good health20. Allah will help us. Just follow the rules and stay away from the gatherings (multiple languages)
MOE 72	1282	123	181	21/04/2020	The Ministry of Education is determined on Tuesday and until 19th of Shawwal on alternative tests for students and secondary grade students; Wishing to improve their levels, or who have not been able to make assignments.
MOE 73	60	563	171	10/04/2020	Arrange a special flight for the transfer of citizens returning from abroad
MOE 74	26	202	171	03/07/2020	Keep yourself informed and inform others about coronavirus updates. Please, stay safe, everyone (multiple languages)

MOE 75	19	150	171	10/12/2020	#Education In order to prepare for a serious start to the academic year in more than 1538 schools, the new payments will continue to get new credits for all stages as well as 9000 tables and seats. Additionally, schools supported 350 computers, and 150 offices.
MOE 76	40	174	170	13/03/2020	The National E-Learning Centre is organizing a remote meeting (Webinar) entitled E-learning strategics.
MOE 77	303	191	164	20/11/2020	the Department of Central Warehouses continues to record courses in schools, then added them to the electronic preparation program, as in preparation for distribution to all schools, and confirm all procedures are completed for next academic year
MOE 78	401	132	147	28/04/2020	The department of education takes part in educating the public about healthy, safe prevention practises. (multiple languages)
MOE 79	4203	136	144	19/05/2020	The Saudi government provides compensation to the private sector as a means of support. and steadiness.
MOE 80	16	181	128	03/04/2020	Awareness is the key, brothers, and sisters, for your health and for the health of your community; keep yourself informed and inform others about coronavirus updates. Stay safe, everyone
MOE 81	435	77	124	28/08/2020	when neglecting preventive instructions, you are at risk,
MOE 82	488	115	119	05/09/2020	The right information is only available on official platforms, (multiple languages)
MOE 83	14	137	115	22/05/2020	We thank God to honour us by Eid al-Fitr, after we're fasting and doing prayers. We see hope and positivity in our coming days, may Allah help us and whole world for overcoming all the scourge for better life.
MOE 84	513	156	111	31/10/2020	The Ministry of Education displays potential routes back to the main office; To reduce traffic and its intensity, emphasises the significance of taking

					safety precautions to protect everyone's safety. #We come back!
MOE 85	937	61	109	14/08/2020	The Kingdom led its people, offer help and support to its people at all levels, and prove to the world their strength and excellence
MOE 86	4657	87	102	08/06/2020	On Saturdays, people in the province shop at food supply centres and sanitise automated ATMs as part of the #Education Management Initiative to prevent the spread of the virus.
MOE 87	913	115	101	12/11/2020	Preventive protocols for returning public sector employees, placed on MOH website (multiple languages)
MOE 88	588	78	99	25/07/2020	Please, do not want to be the joy of Eid is a source at risk. Stay Safe and stay home
MOE 89	910	73	98	28/05/2020	King Salman and the other guardian of the Kingdom are keen on the health and safety of their nation. The situation is under control. Trust us; we are doing our best.
MOE 90	2	80	90	29/03/2020	The MOE is working with relevant authorities to ensure the safe return of their students who are studying abroad.
MOE 91	361	80	90	02/05/2020	The MOE designed the curriculum according to remote teaching and moved all teachings remotely. (multiple languages)
MOE 92	49	109	85	03/04/2020	Universities Specifies the final calendar mechanism.
MOE 93	7	87	76	06/05/2020	Moh: a new corona virus record is wrong. The situation is under control, and we have an eye on it, stay safe. (multiple languages)
MOE 94	8	72	63	01/04/2020	Starting E-learning steps and improvement of learning outcomes for the future, makes the difference
MOE 95	1924	76	59	30/07/2020	The Private company has to cut down many workers. The crown prince is preparing for alternatives to accommodate these workers

MOE 96	85		56	30/06/2020	Staying at home can stop the spread of the virus. Stay home, stay lives (multiple languages)
MOE 97	90	99	56	18/04/2020	Please believe in the news coming from official sources and do not believe in the rumours. All information regarding the new coronavirus variant is announced through official sources through the Saudi News Agency and the daily press conference (multiple languages)
MOE 98	493	45	56	03/11/2020	#We return to warn for your health, follow precautions Through: 1. wear the mask 2. Wash or sterilize hands. 3. Do not shake hands. 4. Leave a distance between you and others. 5. Reduce gatherings. Our commitment contributes to overcome this struggle by God's will.
MOE 99	402	72	54	05/04/2020	Saudi Arabia suspends travel to other countries to spread the coronavirus.
MOE 100	301	40	52	20/05/2020	Dr. Al-Sheikh approves the social media accounts of #Education departments (Twitter, Instagram, Snapchat, YouTube, Facebook) to control and raise the efficiency of communication practices in the system.