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Title :

**The impact of the Corona pandemic on the Saudi banking sector and the role
of risk management in crisis management**

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Abstract

This study aims to identify the statistical impact of the Corona pandemic on the Saudi banking sector and its crisis management practices, as well as to examine the role of risk management in mitigating these impacts. Specifically, it explores whether the pandemic affected banking operations, profitability, and customer interactions, and assesses the effectiveness of risk management in navigating the crisis. A quantitative approach was employed for this research. Data were collected using a structured questionnaire distributed electronically through social media platforms. The sample consisted of 120 randomly selected respondents from the Saudi banking sector. Pearson correlation and regression analyses were used to examine the statistical significance of the relationships between the Corona pandemic, risk management, and both the banking sector's performance and crisis management. The study found a statistically significant impact of the Corona pandemic on the Saudi banking sector, with disruptions in operations, profits, and customer interactions. Additionally, the pandemic significantly influenced crisis management practices, leading to the revision of risk management strategies. The analysis also confirmed that risk management had a strong positive impact on both the performance of the banking sector and its crisis management effectiveness.

Keywords: Risk management, Banking sector's, Crisis management, Corona pandemic, Profitability

Chapter one: Introduction

1.1. Introduction

Starting in early 2020, the COVID-19 pandemic has caused immense disruptions throughout economies across the globe, with a profoundly disrupting effect on financial markets, trade, and businesses of all kinds. In large part because it holds a significant place in the economic life of most countries, the banking sector was among those facing one of the most specific challenges: that of financial systems encountering sudden and severe disruption. This had been particularly high in Saudi Arabia, given the dependence of the national economy on oil exports, whose prices had fallen abruptly while demand was reduced during the crisis. This particular combination of economic shocks challenged the resilience of the Saudi banking sector, as weaknesses and strengths showed up in various areas of the financial system. The research paper will also discuss how the pandemic affected the banking industry in Saudi Arabia and the significant role that risk management played during this period (Naseer et al., 2023).

Many problems the pandemic gave rise to involved increased NPLs due to loan defaults by businesses and people resulting from being in lockdown and/or

experiencing economic restrictions. The banks also felt the squeeze of liquidity pressures with customers drawing down savings or reducing deposits against a background of economic uncertainty. In addition, the operation risks also went up with banks needing to urgently adopt remote models of working, fast-track adoption of digital platforms, and handle cybersecurity risks. Most branches were temporarily shut, and the banks fell back on online banking services, adding further stress to the already strained existing infrastructure. Aggregated, these factors have put an inordinate pressure on financial institutions to ensure business continuity, manage credit and operational risks, and sustain customer confidence during uncertainty (Shabir et al., 2023).

On its part, SAMA was leading in proactive liquidity injections, loan deferrals, and regulatory forbearance toward the banking sector. These kinds of policy responses were meant to gradually soften the financial squeeze on businesses and people while averting the destabilization of the banking sector. The pandemic gave reason for digital transformation and accelerated the adoption of new financial technologies, hence changing the outlook toward the mode of conducting banking operations. All this movement toward digital solutions underlined operational risk management, especially with respect to cybersecurity and seamless financial services delivery (Kose et al., 2021).

The COVID-19 pandemic highlighted the vulnerabilities of banking operations and underscored the proactive risk management approach to be put in place. The pandemic revealed different gaps in the Saudi banking system, issues that went well beyond immediate financial losses: disruption to customer service, increased operational complexities, and higher cybersecurity risks. Banks had to review their traditional risk models and go for more agile frameworks to operate in the unprecedented crisis. This transition entailed new tools for stress testing, scenario analysis, and real-time monitoring in order to predict and mitigate risks timely. The crisis made it imperative that a balance be achieved between the need for compliance with evolving regulatory frameworks and the need for flexibility to deal with these emerging challenges.

The pandemic portrayed very well the essence of digital transformation for ensuring continuity in financial services. The change in customer behavior towards remote interaction was compelling enough for banks to invest a lot in upgrading their digital infrastructure. Not only was this related to online banking development, but also to cybersecurity measures that were to be implemented to protect the information of their customers. A sudden acceleration in the use of these digital services raised fears around fraud, phishing attacks, and service outages, thus compelling risk managers to pay greater attention to operational risks. These developments also showed that the resilience of the banking sector increasingly

depends on technology and how it seamlessly fits into any risk management framework.

The regulatory bodies, such as the Saudi Central Bank, have played their role with timely intervention in the form of liquidity support and regulatory forbearance. These were critical in containing systemic failures and resuscitating confidence in the financial markets. It also identified the need for incessant regulatory evolution and calls for future study on how central banks and financial institutions can jointly construct adaptive policies that would contain the impact of future crises.

Indeed, risk management was one of the cornerstones of the response developed by the banking sector during the crisis, and this entailed banks' exploiting every avenue for credit risk mitigation, as well as managing liquidity and continuity of operations. Aside from mitigating the current financial risks, the challenge also suggests compliance with new regulatory requirements to which banks had to adapt their strategies for resiliency. It examines how well risk management practices have been in the tourism industry, curses the impact of the pandemic and, in effect, provides information on how well the sector was prepared for this disaster. The study will also identify the lessons learned and how these may be applied to formulate an effective crisis management plan in the future (Gao & Liu, 2023).

The COVID-19 pandemic brought about critical vulnerabilities in the global economic systems, hence compelling rapid responses from organizations, including banks. The crisis was one of a kind, putting unparalleled pressures on maintaining continuity of operations and financial stability together for financial institutions. For Saudi Arabia, which relies mostly on its revenues from oil, the crisis was both dual and a 'whether' challenge, as the plummeting oil prices compounded the turbulent economic environment. Given the slowing economic activities and the struggle of businesses to remain afloat, it indeed put the banks right in the forefront of both financial and operational risks; thus, proving that crisis management must go beyond financial containment to an approach that covers technological, regulatory, and operational needs comprehensively.

Besides, disruptions impacted a number of dimensions related to banking operations in Saudi Arabia, placing added focus on NPLs, liquidity management, operational continuity, and cybersecurity. These are, for instance, accelerated loan defaults from individuals and companies due to restricted economic activities and across-the-board layoffs. This turbulent economic environment even led to customers withdrawing their savings or reducing their deposits with banks, thereby causing liquidity problems for banks. The unprecedented financial squeeze made banks review their credit policies and strategies of lending in order for them to stay afloat financially during and after the pandemic period.

Meanwhile, operational risks have come to the fore as banks shifted to digital services to serve their customers amid compliance with health protocols. Temporarily closed branches and the need to work remotely made banks accelerate their digital transformation by adopting cloud-based platforms and online financial tools. This shift also opened the door to new risks-especially cybersecurity-due to rising cases of phishing attacks, online fraud, and data breaches that heighten with digital adoption. It also developed the requirement for far stronger cybersecurity frameworks and proactive monitoring through threat intelligence that would minimize any potential negative consequence from such threats.

The pandemic has indeed shed light on policymaking with others and regulatory agility: SAMA played an important role in keeping stability in the financial ecosystem through timely interventions, such as injecting liquidity into the banking system, deferrals of loan installments, and relaxation of regulatory requirements. These also included temporary measures that would not only provide immediate relief but also provide incentives to the banks to facilitate the economy in recovery through well-focused lending programs. Besides, the regulatory forbearance supported banks in absorbing these operational shocks while making required compliance with the changing governance requirement. The crisis underlined the need for constant interaction between the regulators and the financial

institutions for creating adaptive policies that could cope both with the current and the upcoming risks.

The main lessons learned from the pandemic are real-time risk assessments and agile processes to make quick decisions. Saudi banks, therefore, had to revisit their conventional risk management models to introduce advanced tools such as stress testing, scenario analysis, and predictive analytics that allow institutions to stay ahead of risks and make strategic changes in response. Banks also enhanced their KRIs and implemented real-time dashboards as part of the crisis response to monitor developments for timely action. The movement toward agile risk management frameworks indicated that flexibility and adaptability were very key in managing future uncertainties.

The pandemic indeed reshaped customer behavior, with growing demand for frictionless, technology-driven financial services. This rapid adoption of digital platforms, therefore, helped tackle the operational disruption and ushered in a long-lasting transformation in the banking industry. Moving ahead, integration of AI, ML, and blockchain will ensure better efficiency in operations, detection of frauds, and personalization of financial services on the part of banks. These technological changes are more likely to shift the future of banking and make digital resilience a strategic priority for financial institutions.

The crisis also spoke volumes about how risk culture and governance are interlinked when it comes to dealing with uncertainties. Saudi banks have substantially relied on well-defined governance structures, such as the three lines of defense model, in a bid to ensure accountability in aligning their risk management efforts with their strategic objectives. Therefore, the operational managers, compliance teams, and internal auditors were in joint collaboration to monitor the risks while ensuring that mitigation was effectively implemented. This experience also brought to light the need for continual training and development of employees for increasing risk awareness and embedding a proactive attitude toward risk management across all levels of the institution.

In the future, the salience of the pandemic lessons learned will continue to resonate in setting the future of the risk management frameworks amongst banks. Consequently, banks have to position themselves to mitigate new risks emerging from geopolitics, the environment, and regulatory imperatives. The approach for the future will involve integration of financial, operational, and technological risks. More importantly, regulators and industry peers will also be very key in devising systemic risk management strategies that ensure financial stability.

Conclusion: The COVID-19 pandemic has accelerated new waves in the banking industry, compelling institutions to review risk management systems and

plunge deep into digital transformation. Saudi banks have shown strength through the implementation of agile frameworks, which were milestone entities in liquidity management, operational continuance, and customer exposure. On the other hand, the crisis also unveiled some areas for development, particularly in areas like remote operations and cybersecurity. Banks should, therefore, remain committed to strengthening their risk management frameworks in relations to future uncertainties, as the financial landscape continues to change. This research will further investigate the role that risk management has played during the pandemic and how these frameworks can be further refined to consolidate resilience and sustainability within the Saudi banking sector.

The present research work, therefore, focuses on the impacts of the COVID-19 pandemic on the Saudi banking industry, not only during the period of the pandemic but also how it has influenced the long-term implications for risk management. It examines how frameworks are in place with regard to credit, liquidity, and operational risk management and how regulatory interventions have affected banks in terms of performance and stability. The study also investigates how the lessons learned from this crisis can be used to formulate an even more robust crisis management strategy for the banking sector. Therefore, the research study adds to the growing literature that is assessing the nexus between financial resilience and regulatory policies in concert with digital transformation in a disrupted world.

1.2. Study problem

The COVID-19 pandemic's emergence led to a global public health emergency.⁴⁶ People had a great deal of trouble returning to their previous level of functioning because COVID-19 concerns, uncertainties, and stress were too big to handle digitally. The financial system in the Kingdom of Saudi Arabia (KSA) has a history of relative soundness, particularly in banking, due to comparatively strict and enforced domestic supervision, and supported by what has been for the most part a reasonably robust economy. However, the sector is facing challenges of a sluggish economy, need for reform and negative effects of the COVID-19 pandemic (Orlando and Bace, 2021, P 14).

Accordingly, the problem of the current research represents in investigate the impact of the Corona pandemic on the Saudi banking sector and the role of risk management in crisis management.

1.3. Study definitions

Corona pandemic

(Onyeaka, et al., 2021, P 2) defined corona pandemic as “COVID-19 is a viral disease caused by the novel SARS CoV-2 virus, a single-stranded enveloped positive-sense RNA virus¹that emanated from Wuhan China and has spread across

all major cities and countries the world over”. (Onyema, et al., 2020, P 109) defined corona pandemic as “a contagious disease that first emerged in Wuhan, China in 2019. It was later coded “COVID-19” by the W.H.O which stands for Coronavirus Disease 2019”.

The COVID-19 pandemic, also known as the coronavirus pandemic, is one of the most disrupting health crises globally in recent times, with far-reaching impacts on health, education, business, finance, and other sectors. There was an acute respiratory syndrome virus identified as SARS-CoV-2 that spread rapidly, compelling governments across the globe to apply stringent containment measures like lockdowns, travel restrictions, and social distancing. These measures had to be taken to control the infection rate but seriously negatively affected the economy; it totally almost brought to a standstill, especially the industries that required much person-to-person interaction and supply chains. Global trade was affected, oil prices crashed, and the financial systems strained; business entities could not fulfill their financial liabilities, which finally made NPLs increase.

The financial and banking sectors bore the severest blow, as economic uncertainty fast-tracked a rise in withdrawals, seriously lessened customer deposits, and increased credit risk exposure. Most central banks and financial regulators have enacted stimulus packages, regulatory adjustments, and financially relieving

programs to manage and stabilize such markets. Indeed, in the case of Saudi Arabia, the pandemic added to its dual burden of reduced oil revenues and contractions within the other non-oil sectors. SAMA rapidly introduced measures to inject liquidity into the banking system, together with loan deferrals and regulatory forbearance, in order to ensure stability within the financial system.

The crisis further accelerated the requirement for digital transformation within the banks. Banks began to feel the growing pressure of operational risk management as physical branches were closed for a while, and consumers started shifting towards online banking; similarly, banks had to make sure those digital platforms were secure and reliable. This sudden transition catapults into light the priority of integrating advanced technologies into risk management frameworks. With that, cyber risks also soared, placing banks under pressure to increase the pace of security defenses against digital perils in order to secure customer data and help restore confidence in this highly uncertain environment.

This pandemic has brought out the importance of good risk management practices and how the need for adaptive frameworks that could handle unforeseen crises remains so crucial. Moreover, while banks faced the daunting tasks of managing credit, liquidity, and operational risks, they also had to navigate a set of new regulatory measures that were enacted against the backdrop of this effort toward

stabilizing the system. Lessons learned from this experience will provide valuable input for devising resilient crisis management strategies for the future and allow financial institutions to be better prepared for similar disruptions. The present study will be conducted to assess the impact of COVID-19 on the Saudi banking industry and how well risk management interventions and regulatory support worked in maintaining financial stability and continuity of business during the pandemic. The results will contribute to the fast-growing debate on the nexus of risk management, financial resilience, and crisis preparedness, hence acting as a guideline for responses to future global disruptions.

COVID-19 is a viral infection caused by a novel SARS-CoV-2 virus. Having its origin in Wuhan, China, late 2019, it then spread all over the world very rapidly, and for this disease, the World Health Organization coined the name "Coronavirus Disease 2019" (Onyeaka et al., 2021; Onyema et al., 2020). This has been one of the most disrupting health crises in recent times with wide ramifications going well beyond the realms of public health. Its impact trickled down into vital industries: education, business, finance, trade, and brought most economies almost to a standstill. Many countries of the world were then forced to institute stringent containment policies, which involved lockdowns, travel bans, and social distancing as a measure of containment. While such containment measures were imperative and

essential for public health, they caused massive disruptions in supply chains, service industries, and labour markets.

Global trade received heavy blows with disrupted logistical cycles that delayed production and shipments, while most industries suffered due to supply shortages. The volatile ups and downs in oil prices first went up and then crashed, putting heavy pressure on those countries which relied heavily on oil exports, such as Saudi Arabia. When the level of economic activities was reduced, non-performing loans increased significantly, and many businesses and people could not pay their debts. These developments further exposed the financial vulnerabilities and raised the credit risk for banks and compelled the financial institutions to re-think their lending practices and policies towards risk exposure.

It was an unparalleled situation to arise before the financial and banking sectors. With increased uncertainty, the customers' rush for withdrawal of savings resulted in a drastic shrinkage of deposits. In addition to the drying up of liquidity, the increased credit risks stretched financial stability, especially for those banks that were highly exposed to sectors at risk. Such challenges were addressed with appropriate measures by most central banks and financial regulators in the world, including the Saudi Arabian Monetary Authority. SAMA implemented the utilization of stimulus packages and injected liquidity into the financial system to

prevent the freezing of credit markets. Facilities for loan deferrals, regulatory forbearance, and other mechanisms supporting the financial burden on persons and businesses and maintenance of continuity in economic activities during the crisis were also provided.

This is an exposition that the dual-revenue economy, dependent on oil and non-oil sectors in Saudi Arabia, needed in terms of various sharp contractions. The unprecedented pressure that is now placed on the financial system accelerates the push for digital transformation onto the banking industry. While the physical branches were being closed down temporarily, it required a quick changeover by banks to provide their services digitally so that customer access and engagement would be assured. The shift to online banking also brought its own operational challenges, including demands for scalable and secure digital platforms. Banks needed to provide the reliability of these platforms while facing increased cybersecurity threats: phishing, malware attacks, and fraud, which also surge hand in hand with growth in digital transactions.

The rapid adoption of advanced technologies in the banking sector became a dire need-not only for continuity but also to manage risks. Institutions were compelled to advance their cybersecurity to safeguard customer data and minimize operational risk. This digital movement further underlined the imperative need for

integrating advanced technologies, including AI and real-time analytics, within the risk management framework to facilitate early threat detection and rapid response. Increasingly, financial resilience was seen to be inexorably linked with the seamless integration between technology and the practice of risk management.

Financial institutions faced equal pressure in evolving regulatory requirements as new threats to financial stability opened up. In this respect, regulators introduced new measures, focusing more on how to enhance resiliency, ensure transparent reporting, and maintain customer trust through times of change and uncertainty. The banking sector had to operate within this ever-changing regulatory environment even while controlling liquidity, credit, and operational risks continually. This experience has brought out the need for banks to devise adaptive risk management frameworks that could take into consideration immediate challenges combined with long-term uncertainties.

The most critical lessons emerging from this crisis have been related to adequate governance structure and proactive risk management strategy. This consists of the need to make banks continuously enhance their preparedness for crisis by embedding scenario-based stress testing, real-time monitoring, and contingency planning into their routine operations. Agility and flexibility in responding to unanticipated disruptions are now critical ingredients of financial risk management.

The third dimension: there should be close and effective collaboration among the financial institutions and regulators as a cornerstone in constructing policies that will mitigate risks while nurturing financial stability and growth.

In the post-pandemic environment, customer expectations have changed significantly toward convenience, transparency, and safety related to digital financial services. Changing customer experience demands more investment in financial technologies and digital innovation. Banks have to build resilient digital infrastructures that can sustain further disruptions in the future and enable continuous delivery of services. Furthermore, the increasing importance of cybersecurity will become imperative for banks in their stand guard against digital threats, as customer confidence will be pivotal for competitive advantage in a technology-driven financial world.

The study will be conducted to assess the effects of the COVID-19 pandemic on the Saudi banking industry, particularly how risk management and regulatory interventions put in place were effective in maintaining financial stability and business continuity. Consequently, the research will seek to critically analyze the strategies adopted by Saudi banks during the crisis in regard to liquidity measures and credit risk management practices, along with the efficacy of operational risk frameworks. The study will also look into how far digital transformation has been

used to overcome operational risks and improve customer experience. The findings will finally contribute to the growing discussion of financial resilience, risk management, and crisis preparedness with valuable input for banks and policymakers.

The findings of this study will provide a practical framework that financial institutions can use in the development of their crisis management strategies and enhance their capabilities to navigate future global disruptions. The best practices that can be identified and the lessons learned from the COVID-19 experience will guide the development of even more resilient financial systems that could better resist economic uncertainty. It will also contribute valuable insights into future policy initiatives through a collaborative approach by regulators and financial institutions in the pursuit of sustainable growth and financial stability. In the post-pandemic world, slowly recovering, the banking fraternity is called upon to change gears constantly, to run fast with new realities, embracing technology and innovation to build a secure, strong, resilient financial future.

Risk management

(Gurtu and Johny, 2021, P 2) defined risk management as “the implementation of strategies and plans to manage risks networks through constant risk assessment and reduce vulnerabilities to ensure resilience”. (Khinvasara, et al., 2023, P 133)

defined the risk management as “stage where risk reduction strategies are put into action with the purpose of risk control is to reduce the severity of a risk to an acceptable level, often known as mitigating the risk”. (Martin, et al., 2019, P 2) defined the risk management as “the process by which risks in an organization can be identified, controlled and eliminated.”

Risk management plays a crucial role in securing stability and sustainability for organizations in times of crisis. It includes processes of identification, assessment, prioritization, and mitigation of risks that protect operations, resources, as well as interests of stakeholders. In financial institutions, effective risk management is more than a need for compliance but a strategic need toward maintaining trust with continuity and protection of profitability. The COVID-19 pandemic has underlined the importance of comprehensive risk management practices in revealing that organizations have to be variously equipped to address predictable risks and unexpected disruptions. In the context of the banking sector, this involves credit risks, operational risks, liquidity risks, and cybersecurity threats, which only show a tendency to increase with economic uncertainty.

Most of the risk management frameworks involve multiple stages, such as risk identification, risk assessment, risk control, monitoring, and evaluation. These frameworks are necessary to prevent all those risks that might turn into a crisis and

allow the institutions to be quick while facing an ever-pressing environment. Similarly, during the last couple of years, the role of technological advancement has been highly instrumental in enhancing risk management capabilities. Predictive analytics, machine learning, and automated monitoring systems enable organizations to identify risks much quicker and respond to them in an effective manner. However, the pandemic proved that risk management is not a one-off activity; rather, it is a process that needs continuous review and realignment to meet the dynamic nature of threats and changes in external conditions.

Furthermore, the need for risk management became all the more essential in the Saudi banking sector when banks started reeling under the impact of loan defaults, liquidity squeeze, and operational challenges while shifting to work from home. With that, risk managers were urgently in dire need of racing with time to apply mitigation strategies such as loan restructuring, credit risk modeling, and scenario planning to cushion the effect of the crisis. More importantly, operational risk management needed to come into sharper focus since it would be challenging for banks to keep their digital services secure and seamless in an expanded online presence. What this means is that banks which, prior to the crisis, were already invested in robust risk management systems were, therefore, better placed to navigate uncertainties and leverage them in a manner that minimized losses.

This fact was further pronounced by regulatory bodies like the Saudi Central Bank through guidelines and financial support during the pandemic, so as to make sure that resilience was achieved throughout the sector. The period beyond the pandemic emphasized the need for close collaboration between regulatory bodies and their represented financial institutions in order to establish dynamic policies related to risk management. It has been strongly underlined that it has dealt a blow in terms of incorporating within this experience, the stress-testing mechanisms that will help banks visualize a number of worst-case scenarios and make contingency plans toward those outcomes.

Risk management acts as the backbone for stability to ensure sustainability, especially during times of turbulence. It embodies a focused methodology that identifies, evaluates, and mitigates risks to allow organizations to prepare against expected or unexpected disruptions. According to Gurtu and Johny, 2021, p. 2, risk management is essentially about the implementation of strategies and plans in the management of risks networks through constant risk assessment and reduction of vulnerabilities to ensure that resilience is attained. On the other hand, Khinvasara et al. 2023, p. 133 assert that risk management is the phase at which strategies meant for reducing risks are applied with the intention of bringing risks to manageable levels often referred to as mitigation. On the other hand, Martin et al. 2019, P. 2 defined it as "The process by which risks in an organization can be identified,

controlled and eliminated". From these definitions, it becomes crystal clear that risk management does involve more than crisis containment but a continuous strategic struggle to conform operations, policies, and resources with long-term objectives set by the organization.

To this end, risk management has become all the more important in financial industries where risks might lead to cascading results for markets, their stakeholders, and economies at large. It is not about regulatory compliance but also a strategic tool to maintain profitability, continuity, and trust. Financial institutions and banks need to cope with a wide range of risks comprising credit risks where borrowers fail to pay, operational risk regarding system failure or human error, liquidity risks when there is no sufficient availability of funds for the smooth continuance of day-to-day activities, and cybersecurity risks where the security of data is compromised. These risks have gone up manifold in the times of COVID-19 and showed very clearly that institutions must become agile enough to manage predictable risks and unexpected disruptions.

Modern risk management frameworks are multistage processes that include the identification of risk, risk assessment, mitigation, monitoring, and evaluation. Each one of those stages plays an integral role in preventing minor risks from blowing out of proportion into full crises. Risk identification involves the

pinpointing of potential threats; risk assessment evaluates the severity and likelihood of those identified risks. These are followed by the implementation of mitigation strategies in a bid to reduce the impacts of risks, monitoring, and continuous evaluation in order to change strategies based on emerging trends or varying external environment. This framework makes sure that organizations are at all times proactive, not reactive to challenges.

Integration of technological tools has taken the way in which risk management practices are done a notch higher. Indeed, predictive analytics, machine learning algorithms, and automated monitoring systems have given financial institutions unparalleled capacity to detect potential risks at a very nascent stage. Real-time data analysis gives decision-makers the prowess to act in real time, with very minimal lag between the identification of a threat and its mitigation. However, the pandemic made it crystal clear that even the most advanced risk management systems need continuous reviewing and adjustment in order to remain relevant in a world that is dynamically changing.

As a result, at the peak of the pandemic, loan defaults, liquidity constraints, and operational disruptions all mounted on the Saudi banking system. Overnight, new plans were pursued for loan restructuring, credit risk modeling, and scenario planning to absorb the economic shock. Banks faced additional operational risk from

an abrupt shift in working conditions to work-from-home arrangements and further digitization of services. Those transitions were easier to handle for those institutions that had already made investments in more robust digital infrastructures. Others struggled to secure their platforms against all forms of cyber threats. Such a shift only underlined the need for appropriate operational risk management-a means of ensuring, with consistency, secure, seamless, and customer-oriented digital channels.

Regulatory bodies, such as the Saudi Central Bank, have been instrumental during the pandemic in providing essential facilities for financial support, infusing liquidity, and allowing deferral of loans for stability of economies. Moreover, regulatory guidelines have stressed the provision of stress-testing mechanisms by banks as a way to simulate scenarios of worst outcomes in which contingency plans can be made. Today, close coordination between financial institutions and regulatory bodies has become necessary on issues related to dynamic risk management policies for meeting the suddenly emerging contours. This experience has taught the importance of regulatory frameworks that find a balance between stability and flexibility, where banks stay within the ambit of regulatory compliance but not at the cost of operational efficiency.

Looking beyond the pandemic, the crisis has hammered home the need for adaptive and resilient risk management frameworks. For financial institutions, continuous re-evaluations of risks are driven by shifts in dynamic market conditions and technological innovations. Moreover, with growing dependence on digital services by customers, there is an endemic concern for cybersecurity risks. Banks will have to make a decision on investing in advanced cybersecurity to protect sensitive information and retain consumer trust.

This research evaluates the efficacy of risk management practices adopted by banks in Saudi Arabia during the COVID-19 pandemic. First, this paper tests how well frameworks, strategies, and regulatory interventions that existed at the time of the crisis were sufficient to address its challenges. More specifically, the research will explore how banks balanced regulatory requirements with operational flexibility in efforts to ensure financial stability.

The study will also review the lessons learned from this pandemic regarding how banks can improve their risk management systems to be more resilient in times of disruptions. It will, therefore, give pragmatic recommendations identified by strengths and gaps in the current frameworks to improve the risk management structure. This should provide a guide for the financial institutions on how to handle

future crises, but also contribute to the wider discussion on risk management, financial resilience, and crisis preparedness.

Let me conclude by saying that risk management has become an indispensable part of financial stability in times of uncertainty. The COVID-19 pandemic accelerated the need for more sophisticated risk management frameworks, embedding further the importance of continuous adaptation and collaboration between financial institutions and regulators. The insights from this research will help shape the future of risk management in the Saudi banking sector and offer greater assurance that institutions are prepared to thrive in an increasingly complex and uncertain global environment.

Crisis management was defined as: "the process that attempts to identify and predict areas of crises, the development of actions or measures designed to prevent crises from occurring, or from an incident evolving into a crisis, and minimizing the effects of disruption from a crisis that could not be prevented." Along the same line of argument, the study of (Mehr and Jahanian, 2016, P. 144), carved out in bold that: "crisis management is a means of proactively preparing a company for a worst-case scenario; it involves the careful planning of approaches that will minimize the effects on the operation in both short and long terms.

Crisis management is important in ensuring the long-term survival and stability of organizations, especially those in the banking sector, whose operations are directly linked to market oscillations and people's confidence. The scope of crisis management encompasses not only mere actions of reaction but also proactive anticipation of any potential crisis, the realization of measures for prevention, and the elaboration of recovery plans that limit adverse effects in cases where disruptions cannot be avoided. Banks work within a turbulent environment in which all the constantly changing risk factors include market fluctuations, cyber-attacks, and economic crises among others. Therefore, it has become of immense importance to have an efficient and flexible crisis management system.

A complete crisis management framework typically involves five interrelated phases: identification, preparedness, response, recovery, and learning. The identification phase includes a determination by organizations of potential vulnerabilities and the establishment of early warning systems. It includes the design of strategies that can prevent or reduce the likelihood of occurrence of an event, action plans, contingency reserves, and communications protocols. At the actual time of disruption, response efforts will be marshaled with the priority of reducing immediate damage and sustaining key operations. Recovery efforts, on their part, target the restoration of normalcy and rebuilding financial and reputational standing. In the final phase, learning, the organization evaluates events after a crisis with the

ability to distill lessons learned and enhance frameworks toward better handling of disruptions in the future.

During the COVID-19 pandemic, strengths and weaknesses of crisis management systems across industries came into light. In financial institutions, in particular, it was this nimbleness of response that made all the difference between resilience and failure. The banks that had structured contingency plans in place, which included fluid liquidity management policies and a solid digital backbone, were more resilient and ready to meet the pandemic challenges. Effective communication with all stakeholders, including employees, customers, regulators, and shareholders, maintained transparency and trust during this crisis. But beyond that, employee morale and operational continuity were influenced by how fast an organization had put in place remote work protocols and supported their workforce during disruptions.

The pandemic brought with it several dimensions of crisis management that Saudi banks had to cope with. Banks had to face liquidity problems, operational continuance, branch closure, working from home models, and more incidences of loan defaults. As customers' demand for online services increased, the race began to accelerate for banks to enhance their digital infrastructure while simultaneously securing their platforms from cyber threats. Operational continuity demanded a fine

balance between stabilizing processes internally and restoring customer confidence through continuous service delivery.

Besides this, banks had to quickly respond to the constantly changing regulatory frameworks. The SAMA introduced several regulatory interventions, such as loan restructuring programs, liquidity support measures, and debt repayment deferrals, to soften the impact of the crisis. On the other hand, the regulatory environment provided additional challenges for the banks, as they had to follow evolving requirements while maintaining operational flexibility. This interaction of regulatory oversight and crisis response brought into sharp focus the close cooperation required by banks with their regulatory bodies to ensure that efforts towards financial stability did not get misaligned.

One of the most important organizational takeaways from this COVID-19 experience is the lesson that organizations need to embed crisis management within an enterprise-wide risk management framework. Only the integration of crisis management into ERM allows turning the bank's possibilities for handling different risk categories: financial, operational, and reputational. It provides the assurance that preventive measures like stress testing and scenario analysis become part of the entity's strategic planning. Among these, the most prominent tool during the

pandemic was stress testing. Banks could model worst-case scenarios and establish a contingency planning process for effective mitigation of the respective risks.

The post-crisis evaluation phase helps in the improvement of a crisis management framework by extracting actionable insights from past experiences. The bank should analyze its performance regarding the crisis, find out the weaknesses in its preparedness, and realize how and where it can be improved. This includes refining communication protocols, improving digital capabilities, and building more determined relationships with stakeholders. Several organizations also realized the need to establish a resilient culture after the pandemic. This cultural shift supports being agile so that disruptions, whenever they happen in the future, are manageable by employee and management teams alike.

This study will, accordingly, have to measure which crisis management strategies Saudi banks put into place to address the COVID-19 pandemic in terms of operational disruptions, risk management practices, and compliance with evolving regulatory requirements. This is where the research comes in to analyze just how banks could balance operational stability with customer satisfaction while fulfilling regulatory obligations. This research will also probe how the framework of risk management and crisis management interacts in order to identify the best practices that, in fact, helped the sector to be resilient.

The result of the present research will point out the strong and weak points of the existing crisis management practices in the Saudi banking sector. These will provide the basis of recommendations to improve future crisis management frameworks in order to render banks more robust and better prepared for future crises, whether they be financial, cyber-related, or operational in origin. Since financial markets are expected to remain volatile well into the foreseeable future, crisis management as a proactive tool will therefore be utilized in order to protect banks from eventualities of disruptions in this sector and enable them to maintain their service provisions while retaining confidence in their reputation when disruption occurs.

The current study will explore how Saudi banks were able to manage the risks of COVID-19 by comparing the adequacy of existing frameworks and strategies to the challenges presented by the pandemic. This research will further assess the way in which banks are capable of managing to balance regulatory compliance with flexibility in operations, ensuring financial stability while keeping customer confidence alive. By understanding the respective strengths and limitations of these risk management practices, this study endeavors to provide recommendations on how to construct more resilient risk frameworks, which would be better positioned to stand up against future crises and market disruptions.

Crisis management

(Gazi, 2017, P 14) defined crisis management as “the process that attempts to identify and predict areas of crises, the development of actions or measures designed to prevent crises from occurring, or from an incident evolving into a crisis, and minimizing the effects of disruption from a crisis that could not be prevented”. (Mehr and Jahanian, 2016, P 144) defined crisis management as “crisis management is a means of proactively preparing a company for a worst-case scenario, it involves the careful planning of approaches that will minimize the effects on the operation in both short and long terms”.

Crisis management forms a very important part of organizational strategy, especially for institutions such as banks that operate in complex and dynamic environments. The goal of crisis management, therefore, goes beyond responding to crises upon occurrence but includes anticipating possible disruptions, formulating measures that may prevent the occurrence of such situations, and ensuring quick recovery from the impact of these disruptions. A typical all-rounded crisis management framework would be made up of five interlinked stages: identification, preparedness, response, recovery, and learning. These stages help an organization build its resilience, so that it can continue its operations during unforeseen disruptions with a minimum loss of money, reputation, and operation output. This

pandemic brought out an extraordinary test of crisis management capabilities of institutions around the world and brought out the existing frameworks in a test of strengths and gaps.

The ability to detect early warnings and take pre-emptive actions usually decides how successful a crisis management can be. Effective crisis management requires a set of ongoing communications with the stakeholders involved in transparency and the ability of the business to change with rapidly changing conditions. For financial institutions, these may be by creating contingency plans, maintaining sufficient levels of liquidity, adhering to regulatory requirements, and protecting information systems against cyber-attacks. Public confidence, employee morale, and total business continuity depend highly on the speed and efficiency of organizational responses to the crisis.

The Saudi banking sector was compelled to address the crisis on several dimensions: liquidity management, digital infrastructure, and operational continuity during the pandemic. Thus, banks should change to alter realities like closings of branches and working remotely with rapid speed; while raising customer demands and increased loan defaults test their preparedness on several dimensions simultaneously. A test for an agile crisis management system must be found for striking a balance between operations stabilization and customer trust preservation.

The banks were also to face the changing faces of regulatory interventions as such interventions posed new challenges of balancing compliance requirements with the need to maintain flexibility in crisis responses. Of course, SAMA's regulatory measures were material to reduce the impact of the pandemic on banking, such as liquidity support and loan restructuring programs. This again calls for collaboration between regulatory bodies and financial institutions.

The post-crisis evaluation is an integral constituent in managing the crisis, which involves the study of such response by the institution with a view to extracting lessons learned and strengthening their preparedness for any future disruptions. This phase in learning lets organizations refine their crisis management frames, improve upon the development of communication protocols, and build resilience against any potential threat. The experience of living through the COVID-19 pandemic has made it clear that banks should embed crisis management into an overall enterprise risk management framework to be prepared to handle everything from financial to operational and reputational risks.

The purpose of this research paper is, therefore, to attempt to assess the crisis management strategies of the Saudi banking sector in dealing with COVID-19 by paying due regard to how banks responded to operational disruptions, risk management, and adaptations to new regulatory requirements. This study will

discuss how a combination of these crisis management and risk management practices has enabled the identification of the best practices that resulted in the resilience of the sector. This will also highlight the areas of difficulties that banks face and provide guidelines for strengthening the crisis management framework in the future. Since financial markets are turning to be erratic, proactive crisis management will be an imperative as a business sustainability tool that will help banks sail through future crises and sustain their services uninterruptedly.

1.4. Study objectives

The study aims to:

- Identify whether there is a statistical impact at the level of (0.05) of Corona pandemic on Saudi banking sector.
- Identify whether there is there a statistical impact at the level of (0.05) of Corona pandemic on crisis management.
- Identify whether there is a statistical impact at the level of (0.05) of risk management on Saudi banking sector.

- Identify whether there is a statistical impact at the level of (0.05) of risk management on crisis management.

1.5. Study questions

The following research topics are addressed by this study:

- Is there a statistical impact at the level of (0.05) of Corona pandemic on Saudi banking sector?
- Is there a statistical impact at the level of (0.05) of Corona pandemic on crisis management?
- Is there a statistical impact at the level of (0.05) of risk management on Saudi banking sector?
- Is there a statistical impact at the level of (0.05) of risk management on crisis management ?

1.6. Study hypotheses

The research raises the following hypotheses:

- **H1:** There is a statistical impact at the level of (0.05) of Corona pandemic on Saudi banking sector.
- **H2:** There is a statistical impact at the level of (0.05) of Corona pandemic on crisis management

- **H3:** There is a statistical impact at the level of (0.05) of risk management on Saudi banking sector.
- **H4:** There is a statistical impact at the level of (0.05) of risk management on crisis management

1.7. Significance

It is expected that the results of this study will contribute some support to the impact of the Corona pandemic on the Saudi banking sector and the impact of risk management on crisis management. It is expected that the results will also serve as a guide for future researchers conducting related studies. In addition, research helps enrich scientific libraries and develop the researcher's expertise in various fields and case study topics. Encouraging the researcher to continue researching a range of scientific issues, especially if his or her efforts are recognized, supported and encouraged. This also helps to advance human knowledge and cultural balance in the fields of science, culture and knowledge, in addition to applied importance.

The practical importance of the current research is to provide a set of recommendations and proposals in order to enhance the performance of workers within the Saudi banking sector in crisis management and risk management in difficult times and to identify the most prominent strategies proposed in dealing with

risks through which crises can be managed and the highest performance can be achieved for workers within the Saudi banking sector.

The importance of this research goes beyond the context of the COVID-19 pandemic. This is because the study provides insight into the relationship between risk management practices and crisis management strategies within the banking sector. Knowledge of how the Saudi banking sector has addressed the pandemic offers a template for other financial institutions in preparing and managing future crises related to public health, economic decline, or any other form of disruption. This should be done by raising proactive risk management and effective crisis handling as part and parcel of financial stability for sustained trust in the banking system and sustainable economic growth.

The topic explores how banks in oil-dependent economies-like Saudi Arabia-adapted to both external shocks such as the pandemic and internal challenges related to fluctuating oil prices. It will serve to establish a contextual understanding of how the banking sector adjusted to dual pressures brought about by declining revenue from reduced economic activity and the requirement for digital transformation. Therefore, the study carries out an increase in the relevance of knowledge on risk and crisis management to economies with similar structural attributes. Besides, the study provides practical value in pointing out specific measures for

mitigating risks that turned out to be effective in the phase of the pandemic and gives recommendations for further improvements. It also encompasses one on liquidity management, continuity of operations, regulatory compliance, and employee performance within the crisis. These findings would also help financial institutions to fine-tune their frameworks on managing risks and crises so that they are fully prepared for disruptions when it comes. Recommendations derived from this research would also help policymakers, such as SAMA, formulate policies aimed at making the banking sector resilient, particularly in times when things get turbulent.

Besides these practical and academic contributions, it is an inspiration and guide to future researchers into similar topics. In so far as the contributing factor to a solid foundation for subsequent studies, this research facilitates the creation of that culture of inquiry and intellectual curiosity, encouraging scholars to delve deeper into the depth of financial systems, risk management, and crisis resilience. It enriches scientific libraries while developing the knowledge, skills, and analytical competencies of the researcher and thus prepares him or her for further research. This work makes a contribution to the development of expertise accumulated within the framework of economics, finance, and crisis management disciplines.

From a broader viewpoint, its importance would lie in the fact that this research enriches human knowledge and cultural understanding, especially

regarding how societies and institutions cope with unexpected challenges. It points out the systemic nature of finance and underlines how banking sectors should play an important role in ensuring that economic order is maintained in conditions of crisis. The results will be of applied significance, not only to financial institutions and policymakers but also to stakeholders like investors, employees, and customers who are benefited by a resilient banking system. Ultimately, it has brought to the fore preparedness, adaptability, and learning as central in driving better performance within the Saudi banking sector, one that is resilient enough to prosper both during stable and turbulent times.

Conclusively, the findings will, therefore, be expected to give deeper insights into the interrelationship that may exist between crisis management and risk management in the Saudi banking sector, considering specific issues related to the COVID-19 pandemic. This will be inclusive of how banks managed disruptions and remained operational by adapting to new challenges, something quite critical for the industry. Besides contributing to the literature, this research will also provide a benchmark for practitioners and policy makers and for researchers in the future. The result is that the research contributes not only to the academic stock of knowledge but provides hands-on experience for financial institutions on how to prepare against crises.

Another important dimension this research gives is practical guidance to the decision-makers and the stakeholders in the Saudi banking sector. Whereas banks are increasingly confronted with a number of uncertainties-economic shifts, digital transformation-the research will point to actionable imperatives required for operational stability and the trust of customers. The present study also brings into focus the ability to respond agilely to unpredictable challenges: the sudden closure of branches, work from home, increased demands due to frustrated customers, and the risk of defaults on loans. Recommendations derived from this research will, therefore, allow the institutions to enhance their crisis management practices with a view to ensuring continuity of operations and workers' productivity during times of difficulty.

This research further extends its usefulness beyond the Saudi context. This is true for all financial institutions around the globe, more particularly in oil-dependent economies. The findings of this research would serve as a guide to hedge against risks that emanate from dual pressures, such as pandemics and fluctuating oil prices, which these economies are most vulnerable to. Such global relevance underlines preparedness for crisis as one of the foundational pillars of financial sustainability, hence continued continuity of institutions irrespective of the nature or size of disruption.

Other than that, the research contributes to the global outlook of financial resilience. The study shall provide a holistic view of the ingredients that constitute institutional resilience, supplying information on the role of contingency planning, digital infrastructure, and employee performance. Furthermore, it will discuss how the compliance of institutional entities in terms of regulatory requirements and coordination with banks from these regulatory bodies, such as SAMA, through different interventions like liquidity support and loan restructuring, helped collectively to reduce the impact of the pandemic. This would, in turn, permit the formulation of policies that would strike a balance between long-term stability in the sector and flexibility to deal with risks as they emerge.

The value of this research in engendering a culture of continuous learning and improvement: Organizations are able to learn proper lessons from their responses to crises, refine their frameworks on risk management, and strengthen communication protocols accordingly. The study insists that the financial institutions apply the crisis management approach within their general enterprise risk management systems to be able to know and take action on some future challenges. Also, building trust among customers, employees, and investors will help the banking sector remain a source of strength in times of economic turmoil.

The research underlines the pre-emptive policies that may help reduce risks in the future. This study will give a way forward as regards effective liquidity management strategies, continuity planning, and best practices for mitigating risks that have been employed during the pandemic, thereby acting as a roadmap other institutions can follow to optimize their responses against different crises. Such recommendations will also enable banks to sharpen their crisis frameworks in dealing with operational, financial, and reputational risks much more effectively.

This will also create a foundation for further research that would serve as a catalyst to initiate new investigations into those related fields. It will provide a foothold for scholars interested in the studies of financial systems, risk management, and crisis response in volatile environments. The results would allow further investigation of the financial stability strategies and create new opportunities for interdisciplinary research in economics, business management, and public policy. This type of study will remain indispensable to drive insight and practice in the face of financial markets that are becoming increasingly linked and unpredictable.

Beyond the immediate sector focus, this research underlines how financial institutions contribute to the creation of a resilient society. This study explores how banks may continue to function, retain their workforces, and contribute towards economic recovery during periods of crisis; it leads to the systemic position that

the financial sector assumes to ensure social and economic order. Resilient banks are those that do more than survive crises; they also offer stability for their customers and businesses, supporting long-term economic growth. Consequently, the crisis management policy is not just a means to guarantee institutional survival but forms part of a strategic element of national economic security as well.

The rationale behind this study is threefold: first, practical; second, academic; and third, social. It does so with actionable recommendations through which the level of crisis preparedness can be further improved in the Saudi banking sector, and it gives a starting point for future research into the issue at hand, thus fostering a deeper understanding of financial resilience. The study equips institutions with confidence to deal with future disruptions by emphasizing adaptability, learning, and proactive risk management. Its findings would go on to inform the craft of sustainable financial practices, ultimately gaining the confidence of all stakeholders in ensuring that banks are resilient pillars of economic stability in times of turbulence and calm.

Chapter Two: Literature review

2.1. Introduction

The COVID-19 pandemic has presented varying challenges to financial institutions globally, having a dramatic effect on the banking sector in particular and exposing the weaknesses of current risk management practices. Hence, the crisis also indicates that an effective risk management framework and regulatory intervention are crucial in the Saudi banking sector to ensure a limiting of adverse implications for financial stability. This literature review discusses the theoretical underpinning, empirical evidence, and conceptual frameworks on how crisis management, risk management, and regulatory interventions intersect. The effort herein is geared at establishing a comprehensive understanding of how these converge to strike a telling impact on bank operations, in particular during times of global crises.

This review will start by looking at Crisis Management Theory, which helps explain how institutions predict, handle, and recover from sudden disruptions. It discusses the Risk Management Framework, detailing a variety of tools and processes that financial institutions put in place to identify risks, assess them, and take mitigating strategies. Further, the theory of Regulatory Intervention is

discussed in relation to regulatory bodies affecting financial stability through their policies on supervision and crisis management. These two frameworks introduce the theoretical underpinning for understanding the response of the Saudi banking sector towards COVID-19.

This chapter also examines the ongoing discussions on how studies have sought to test the behavior of financial institutions during economic disruption with regard to regulatory policies and means of mitigating risks that could lead to crisis. The themes discussed in this regard include but are not limited to capital adequacy requirements, management of liquidity, and a balance between regulatory compliance and innovation. It also depicts the lacuna in the literature on long-term implications for banking operations due to COVID-19 and underlines the trend of forthcoming changes in current risk management practices that will shape the future of the sector.

This literature review provides a foundation for understanding the risks to Saudi banking sector management during crisis situations through the synthesis of relevant research and theoretical perspectives. The aim of this review is to develop an understanding from an institutional perspective as to how institutions can be better prepared and resilient against any such disruption in the future, but also to

inform policy makers on the critical role regulatory interventions play in ensuring stability.

2.2. Literature review

Tang's (2024) explores how the pandemic has reshaped risk management and operational strategies within banks and financial institutions. Mixing quantitative data from financial reports with qualitative insights from industry experts, Tang's research shows that the pandemic accelerated the use of technological innovations that improve the resilience and operational efficiency of the banking sector.

Liu (2023) addresses particular challenges and reactions in the sphere of risk management in the banking sector in the conditions of the COVID-19 crisis. Liu analyzes the state of market, credit, liquidity, and systemic risks, and the strategies of the banks regarding the management of these risks, underlining their higher vulnerabilities during the pandemic. In fact, the paper concludes that though banks have already taken some precautionary measures by building capital buffers and adapting their lending policies, further development of risk management tools is needed going forward, in order to cope more effectively with future crises.

In (Chen, 2023) study on the risk assessment of the banking industry during the COVID-19 crisis, gives emphasis to the importance of frequent financial reporting and foreign exchange risk management. Chen proves that government

interventions are important to mitigate risks in the banking sector and ensure its stability, which is evident from financial reports and various regulatory measures.

In contrast, Peng (2023) assesses the adequacy of the risk management strategies that have been followed during the COVID-19 pandemic by case studies of bank failures and analysis of the regulatory frameworks that were under the Basel Accord. The results of Peng reflect the huge impact the pandemic had on bank profits and highlighted the fact that valid risk management systems should be implemented to control the various type of risks.

A study by Jin (2023) also examines the risk exposure of the banking sector due to the COVID-19 pandemic, focusing on liquidity, credit, market, and systemic risks. Jin's case study examination and regulatory measures, especially interest rate increases laid by Federal Reserve, underline the ability of adaptation to new regulatory environments as another means for the stability of the banks.

In this different context (Saleh, 2021), assesses the effectiveness of national policies of risk avoidance meant for containment of spread of COVID-19 infection in Saudi Arabia. It also showed that proactive national policies played a vital role in containing not just the virus but also its economic consequences.

Shamieh (2022) discusses how COVID-19 influences risk management practices in commercial banking and gives practical recommendations for

practitioners based on survey evidence. The present research conveys with urgency the need for enhanced risk management practices in view of the pandemic.

Meanwhile, the investigation by Kakhkharov and Yarashov (2024) deals with the issue of banks coping with the most sensitive junctures when geopolitical changes, financial crises, and pandemics occur. Their work points out that with broad historical data and case study analysis, the adaptive strategies are an integral prerequisite to manage risks in the rapid shifting world.

The investigation of Belkhir and Abbes (2024) addresses the impact of COVID-19 on spillovers in the volatility of the Saudi stock market. Their findings, through a quantitative analysis of data from the stock market, underline that there are significant changes in patterns of volatility, which signal strong risk management in the stock markets. These studies together note the strong impact of the COVID-19 pandemic on the banking sector and stress adaptive strategies of risk management, along with the regulatory framework, as the paths to successfully addressing any future crises.

Suherni et al. (2024), directed their attention to developing a risk management strategy connected with Sharia mortgage products during the pandemic period. Through the method of input, matching, and decision stages of the Grand Strategy Matrix, different internal and external factors affecting Sharia

mortgage products were disclosed. It also means that Bank BTN Syariah should apply the 5C principles in risk management: Character, Capacity, Capital, Collateral, and Conditions. Managerial implications include the following: enhanced risk monitoring, efficient communication, innovation of the product, and conformance with Sharia principles will provide a strong foundation for risk mitigation in Sharia mortgage products. The study of Zirui Wu (2023) is about the effects of COVID -19 on regulatory and banking risk management frameworks.

Wu (2023) compares the changes in risk management regulations pre- and post-pandemic and points out the significant changes the regulatory landscape has undergone. Hence, the investigation stressed the increased level of systemic risk management and the quick change of direction by the regulators in response to any perceived threats. This will be an important study, as it draws from how the pandemic created a need for more enhanced risk management frameworks and further necessitates continuous adaptation of regulatory practices. Mohammad Alsharif (2024) analyzes changes in productivity within the dual banking sector- with both conventional and Islamic banks-in Saudi Arabia during the COVID-19 pandemic.

In this respect, the changes in cost productivity are measured using the Cost Malmquist Productivity Index, with emphasis on production costs. The findings

indicate that the policies of the Saudi Central Bank cushioned the pandemic's impact and hence made Islamic banks more productive than conventional banks. However, the paper has also pointed out that there is a decline in productivity towards the end of 2022 due to tighter monetary policies, hence depicting the dynamic nature of productivity in the banking sector during crises. Abdou (2022) discusses how strategic intelligence has been impacting crisis management in the Saudi banking sector due to the COVID-19 pandemic.

Based on the case study approach in the banking sector of the Asir region, the results have shown that strategic intelligence enhances crisis management capabilities at satisfactory levels. This study has pointed out strategic intelligence as key in supporting banks to understand the challenges of the pandemic and provides a model that enhances crisis management in the banking industry. Diab et al. (2022) has discussed simultaneously the risks that banks have gone through during the COVID-19 pandemic and given directions for risk officers.

The broad framework of risk assessment used in the study identifies major risks that involve credit, market, operational, and liquidity risks. The strategies that the risk officers could utilize in implementing their functions cover how best to handle identified risks with an emphasis on a holistic approach towards risk management during crises. Shafiai (2022) conducted a study on the impact of

COVID-19 on the risk management practices of Islamic banks. Indeed, through interviews with a bank practitioner and analysis of financial reports, the qualitative analysis showed that the Islamic banks had successfully put in place several mechanisms to devise proper risk management strategies. This, again, includes increasing the size of capital buffers and developing liquidity management, reflecting the various adaptive strategies implemented by Islamic banks in response to the pandemic.

Ramesh et al. (2022) documented the changes in banking risk management policies before and after the COVID-19 pandemic. Through a comparative analysis of the risk management policies, supported by case studies, this research piece evidences important changes in risk management behavior. The findings show that banks have adopted more rigid measures to deal with higher risks during the pandemic and provide insight into how risk management policies have evolved.

Alzuod & AlQhaiwi's (2022) aimed at ascertaining the role strategic flexibility could play in improving crisis management for commercial banking during the outbreak of COVID-19. Conjointly, using a mixed-method approach from quantitative data analysis to qualitative case studies, it found that the vital role of strategic flexibility was an enabling condition for effective crisis

management. This suggests that such a condition can enable banks to act speedily in response to changed situations brought about by crises.

The work by Tomczak (2023) presents a new banking crisis in the context of the COVID-19 pandemic. Applying qualitative research methods, such as expert interviews and financial data analysis, this paper indicates that while resilience among banks has prevailed, large risks still exist which may lead to a future crisis if not appropriately managed. This is a study where it has been proven that the banking sector still faces many difficulties, as its vigilance and adaptation are constant in managing risks. These will contribute to the already existing literature on the implications of COVID-19 in the banking industry from various perspectives. Each of these studies has varying strengths and weaknesses. They all point toward the need for adaptive risk management strategies, appropriate regulatory frameworks, and strategic intelligence in mitigating the impact of the crisis in the future. Their findings underline imperatives for continuous adaptation and innovation in best risk management practices toward ensuring stability and resilience within the banking sector against unprecedented shocks.

2.3. Critical discussion of the literature

Shengyu Tang's 2024 study explores how this pandemic has reshaped the way risk management and operation strategies are done within banks and financial

institutions. Adopting a mixed-method approach, with quantitative data from financial reports and qualitative insights contributed by industry experts, Tang presents evidence that the pandemic accelerated the adoption of technological innovations in ways which increased resilience and improved operational efficiencies within the banking sector. Shengyu Tang's study reveals that COVID-19 redesigned the operational and risk management strategies of the banking industry, pointing at the acceleration of technology adoption. This paper indicated that automation and digital solutions were really important, such as remote banking operations, for operational continuity. However, the contribution focuses more on short-term responses and fails to discuss long-term risks and possible structural changes in the financial system. It also generalizes its findings across regions, without taking into consideration the fact that local economic conditions and regulatory frameworks might have impinged differently on the extent of technological adoption and, therefore, resilience. This, however, may overgeneralize to banks and financial institutions across different regions without any differences and focuses more on immediate impacts rather than long-term consequences.

Yukun Liu (2023) focuses on the challenges and responses in the risk management of the banking sector due to the crisis generated by COVID-19. Analysis by Liu of market, credit, liquidity, and systemic risks among others,

together with measures adopted by banks to cope with these risks, underlines increased bank vulnerabilities in the pandemic period. The study consequently infers that although banks have adopted measures such as raising their capital buffers and the recalibration of their lending policies, there is still a need for further evolution of risk management tools to better handle future crises. Yukun Liu (2023) assesses the multi-dimensional risks that banks faced during the pandemic in view of liquidity and credit risks, and shows how banks readjusted their policies to maintain stability. While Liu's work is relevantly informative to enrich the discussion with improved capital buffers and dynamic lending behavior, the scope of the study itself is also restricted by the rather modest sample size that makes generalizations beyond a particular region or type of institution not easy to obtain. Finally, the evolution of financial instruments and risk management structures is incessant and, hence, cannot be encompassed by this study, which duly acknowledges the requirement for their constant refinement and adaptation. However, with the limited sample size, not all diversities of the banking responses around the globe are captured, and continuously changing features of risk management tools might not be fully reflected.

Ziying Chen's 2023 research on risk assessment of the banking industry in the COVID-19 crisis identifies the relevance of frequent financial reporting and foreign exchange risk management. Chen also identifies that from the observation of

numerous financial reports and regulatory measures, it is indicated that government interventions are the most critical component in building mitigant risks and further stabilizing the banking sector. However, this study has a strong dependence on financial reports, which might not capture all the dimensions of risk, and results may be rather regional than global. Recent work by Xu Peng also looks at the efficiency of risk management strategies through the pandemic, case studies of banks that failed during the pandemic, and examination of regulatory frameworks such as the Basel Accord. In Peng's findings, the pandemic level was observed to have a significant effect on the profits derived by banks from their operations and further increased the importance of a strong risk management framework in handling various types of risks. Ziying Chen's 2023 research does look into how important financial reporting and foreign exchange management have been during the pandemic, focusing on the role of government interventions. This study argues that support via regulatory measures was fundamental in sustaining the financial markets. However, since this study is based on financial reports, there is a fundamental bias in the fact that they may or may not bring out all dimensions of risk. It has also been severely focused on regional impacts; as a result, its generalizability to a global context is limited. This narrow perspective may miss out on critical observations about cross-border financial flows and the risks of interbank lending that were reflected in the pandemic. Xu Peng (2023) has researched different kinds of regulatory

frameworks, including the Basel Accord, in an attempt to shed light on regulatory challenges that beset banks. Utilizing case studies, Peng supplied the reader with examples of how some banks toiled to maintain profitability while seeking to comply with new changing regulations. In this sense, the study does provide a degree of insight into the importance of regulation in the banking industry, but due to the case study structure, it cannot look at broader applications, which thus can limit generalizability since different banks experienced various operational difficulties. Such research could also be done by comparing the pre-pandemic dynamics with those after the pandemic to develop a clearer understanding of the long-term character of regulatory shifts. At the same time, such a tight focus on individual cases reduces generalizability of findings, for the study may fail to capture features distinguishing the COVID-19 crisis from past ones.

Shenqi Jin (2023) also assesses risks taken by the banking industry in relation to liquidity, credit, market, and systemic risks in the context of the COVID-19 pandemic. The novelty of Jin's research into case studies and regulatory measures, in particular, Federal Reserve interest rate hikes, underlines the need for adaptation within new regulatory environments as part of bank stability. However, in a similar vein to Xu Peng's study, reliance upon case studies might result in limitations upon the breadth of application, and the pandemic period of focus might have given insufficient regard to pre- and post-pandemic dynamics. Shenqi Jin's 2023 research

explores an interest rate hike and systemic challenges in the context of the pandemic. It shows banks made changes in view of new regulatory environments. However, similar to the work by Peng, the case study approach limits generalization since the experiences of individual banks may not be representative of general industry trends. The focus of attention on pandemic-related risks might have left other pre- or post-pandemic systemic issues behind.

Elsewhere, Saleh (2021) assesses how national policies instituted toward risk avoidance have been able to curtail the spread of COVID-19 in Saudi Arabia. The researcher established that proactive national policies were major in reducing the spread of the virus and its economic consequences. The findings apply only to Saudi Arabia and may not apply anywhere else; the focus of the study is health and economic impacts only, and there might be other dimensions of risk that the study may have failed to notice. For instance, Saleh's research on national policies in Saudi Arabia discusses how timely preventive governmental actions contained the virus and limited the economic consequences of COVID-19. This paper does identify efficiencies within the coordinated national responses, but it lies squarely in the Saudi context, so not including wider financial risks or responses which may be international will risk lack of knowledge about how global inter-connected financial systems dealt with the crisis.

Jamal M. Shamieh (2022) explores how COVID-19 influences risk management practices in commercial banking, proffers practical recommendations for practitioners based on survey evidence. This is emphasized in the study as a way to enhance risk management practices during the pandemic. However, survey responses might be biased and not represent the entire banking industry, and the findings may become outdated as practices and policies change with time. On the other hand, Jamal M. Shamieh focused more on practical recommendations to improve risk management practices in banking, supported by evidence through surveys. The results of this paper would be beneficial for practitioners. However, it may be biased by issues similar to those that many survey studies have. In other words, respondents do not represent all experiences within the banking sector accurately or entirely. Also, considering that policy and practice are changing at a rapid pace, there might be instances where certain recommendations could not apply to a wider section beyond the short term.

Meanwhile, Kakhkharov and Yarashov (2024) came up with an investigation about bank performance concerning geopolitical shift, financial crises, and pandemics. Their deep analysis of historical trends and case studies underlines the importance of adaptive strategies in mitigating risks in an increasingly dynamic world. The only flaws could be that the broadness of the study disperses attention to concrete effects caused by COVID-19, and the findings may also be too general to

apply precisely to certain banking sectors or regions. A wider perspective on the interconnection of financial crises, geopolitical changes, and pandemics is presented in the analysis by Kakhkharov and Yarashov. Their investigation underlined pressing needs for adaptive strategies in dealing with a very challenging environment all over the world. However, given that their research was so all-encompassing, there was a dispersion of focus which makes it hard to precisely single out challenges that might be specific to the COVID-19 crisis. This inevitably diminished the precision of recommendations concerning a definite banking sector or region.

The last one is the study by Belkhir and Abbes (2024), that shows how COVID-19 influences volatility spillover in the Saudi stock market. In fact, the quantitative analysis they carried out with data pertaining to the stock market underlines the fact that in light of the high changes in volatility patterns in stock markets, strong risk management indeed will be imperative. However, the focus on the Saudi stock market could narrow down the generalized results of other markets, and reliance on stock market data may not precisely capture every aspect of banking sector risks. This provides a useful insight into the effects of COVID-19 on the banking sector, with some clear strengths and weaknesses. They all bring together the need for adaptive risk management strategies and firm regulatory frameworks to effectively address crises in the future. Belkhir and Abbes (2024) investigate the

impact of COVID-19 on volatility spillovers in the Saudi stock market. Their quantitative research, though very informative regarding how the volatility of the stock market spreads with respect to risk management, has a limited scope regarding only the Saudi market. That might be useless in other financial markets that have different characteristics. Second, given their reliance on stock exchange information, it may fail to be representative of comprehensive risks which include a lack of liquidity and defaults in the banking industry.

The study of Suherni et al. (2024) is worth paying special attention to because their research touches on building strategies for managing risk within Sharia mortgage products in the context of a pandemic. This paper is exceptional because of its detailed methodological approach, implying the use of the Grand Strategy Matrix in order to obtain concrete results on the internal and external factors that will affect Sharia mortgage products and provide practical strategies according to the 5C principle: Character, Capacity, Capital, Collateral, Conditions. However, this research focuses on only one bank, Bank BTN Syariah. Thus, the generalization of the results to other institutions or other regions may be somewhat constrained. Suherni et al. (2024) provide a fresh focus for the risk management strategies of Sharia mortgage products during the pandemic. The use of the Grand Strategy Matrix yields a broad framework of analysis for internal and external factors affecting these products. However, this study focuses on only one institution, Bank

BTN Syariah; therefore, it limits generalizability. Broadening the scope to several banks or regions would be very relevant in establishing strong evidence regarding the resilience of Islamic financial products.

Wu (2023) addresses the influence of COVID-19 on the regulatory and banking framework of risk management. The author gives a very detailed comparative analysis of regulatory changes and risk management practices before and after the pandemic. Strength of the study: This includes comprehensiveness in which the study looks at how the pandemic has forced many countries to explore more substantial risk management frameworks and ways in which systemic risk management has gained more importance. The study may have its shortcoming in relying on regulatory changes that are themselves evolving with present times, which might impact the long-term relevance of this study. Wu (2023) delivers a comparative analysis of regulatory changes before and after the pandemic. This paper evidences how COVID-19 compelled countries to adopt stronger risk management frameworks. Further, while it gives an in-depth review of the regulation adaptations internally, it also points out how these frameworks are still evolving. Thereafter, uncertainty on the long-term relevance of findings is set since some may be outdated with developments in regulations.

Alsharif (2024) explains the cost productivity analysis for the COVID-19 pandemic in the dual banking sector. He used the Cost Malmquist Productivity Index to measure the changes in cost productivity. This study represents the points of strength because it focuses on both conventional and Islamic banks, hence being comparative and highlighting the resilience of Islamic banks. However, the specific economic context of Saudi Arabia also somewhat constrains the findings, and productivity already seems to have been declining towards the end of 2022, as witnessed by its tighter monetary policy, so perhaps limiting the wider applicability of the findings. Alsharif's study (2024) determines and compares the productivity of conventional and Islamic banks during the pandemic by estimating the Cost Malmquist Productivity Index. The research, through its accentuation of the resilience of Islamic banks, is able to provide valuable insights into the respective comparative strengths of different banking models. However, this paper limits the broad application of its findings to other regions by adopting a very specific economic context, that of Saudi Arabia. In addition, the tightening monetary policies in 2022 could have had impacts on productivity trends; thus, the interpretation of the results is likely to be more complex.

Abdou (2022) focused on the role of strategic intelligence in crisis management within the Saudi banking sector during the COVID-19 pandemic, used a case study approach focusing on the Asir region. It is very relevant research since

it underlines how important it is to achieve effective crisis management through strategic intelligence. However, this may affect the generalization since not every context would reflect the experience of the Asir region within a wider banking sector. The case study approach, in this regard, might impact generalization of findings. In Abdou's study of strategic intelligence for crisis management within the Asir region, proactive strategies are identified as the foundational activities that guarantee good crisis handling. While relevant in providing insight into the role of strategic intelligence, Abdou limits such findings to banking studies involving just one region. A broader study covering more regions or institutions would have been better in providing a comprehensive overview of strategic intelligence in banking.

Diab et al. (2022) discuss risks to which banks are exposed during the COVID-19 pandemic from a broad perspective. This strength of the study offers risk officers practical strategies because it gives an all-rounded approach to understanding and mitigating various risks. However, its broad coverage dilutes the focus on particular types of risks and therefore cannot delve deeper into detailed analysis into each category of risks. The study discusses the issue in a more holistic perspective of risks banks have faced within the pandemic, presenting practical approaches for risk officers. However, given the wide area of research, this study loses a particular focus on specific categories of risks, such as liquidity and

operational ones. The detailed examination of separate risks can allow for a more useful development of recommendations provided below.

In this way, the study of Shafiai (2022) on the implications of COVID-19 on the risk management practices of Islamic banks relies upon qualitative data and includes interviews with banking professionals and an analysis of financial reports. The strength of this paper is in a greater emphasis given to the adaptive strategies of Islamic banks against the turbulent times, which include enhancing buffers for absorbing shocks and improving liquidity management. However, because qualitative data is dependent, such an approach may be subjective and can hardly be generalized regarding other types of banking environments. The qualitative study undertaken by Shafiai, 2022, highlights adaptive strategies that include the aspect of strengthening Islamic banks' liquidity management and shock absorption mechanisms. Though going a long way towards valuable insight into the resilience of Islamic banks, reliance on qualitative data introduces elements of subjectivity, hence limiting generalization to other banking environments.

The paper of Ramesh et al. (2022) uses a comparative analysis in the study of changes in the banking risk management policy pre- and post-pandemic COVID-19, supported by some case studies. This is strong in that it provides a close look at how risk management policy has been evolving in response to the pandemic. However,

reliance on case studies could impact the generalization of results since the selected cases might not be representative of the entire banking industry. Ramesh et al. (2022) have made a comparative analysis of the policies before and after the pandemic with the help of some case studies. Though the study provides an in-depth study of the change in policies, this may lack representativeness because of the use of case studies. Greater variation in banks with a wider sample would lead to wider generalization of the result.

Alzuod and AlQhaiwi (2022) conducted an investigation into the role of strategic flexibility in enhancing crisis management in the commercial banking sector during the COVID-19 pandemic, using a mixed-method approach. Strengths include highlighting strategic flexibility as the most determining factor to handle crisis situations properly, by which banks can respond in a very timely manner to changing conditions. The approach may be a mixed method but can result in some intricacies and make generalizations of its findings difficult in various banking sectors. Alzuod and AlQhaiwi (2022) explore strategic flexibility in times of crisis. To be more specific, this is an efficient method to provide responses on time to changed conditions. The mixed-method approach has given many important insights; however, the complexity of the methodology may be a problem for generalizing the result across different banking sectors.

The article of Tomczak (2023) relies on qualitative research methods, which include expert interviews and financial data analysis in order to discuss the possibility of a new banking crisis as a result of COVID-19. The strength of this study is in its forward-looking character since it assesses the influence of the pandemic on the banking sector in the long run. However, it may be at the cost of a qualitative approach of analysis that introduces subjectivity, and findings might be speculative due to the moving character of a pandemic impact on the banking sector. In a qualitative research work, Tomczak assesses the long-term consequence of COVID-19 on the banking sector, which promotes the likelihood of future crises. Whereas this study makes a number of its observations prospective, the fact it is based on purely qualitative methods prevents readers from treating its findings as objective, and the dynamic nature of the pandemic makes at least several predictions speculative.

These studies provide important insight into the influence of COVID-19 on the banking industry and carry different strengths and weaknesses. They all combine to emphasize adaptive risk management strategies, strong regulatory frameworks, and strategic intelligence as key to a successful navigation of any future crisis. The findings show how continuous adaptation and innovation in risk management practices are in order to ensure stability and resilience within the banking sector against unprecedented challenges.

2.4. Conceptual framework

The conceptual framework informing the study adopts ideas from crisis management theory and various risk management frameworks to analyze how the Saudi banking sector navigated the challenges stemming from the COVID-19 pandemic. These theories provide a more systematic lens for understanding the dynamic interaction between exogenous shocks, organizational resilience, and risk mitigation strategies. The principles of operational resilience and regulatory intervention theory herein adopted are equally important in ensuring financial stability in case of crises.

2.4.1. Crisis management theory

Crisis management theory prescribes a structured way in which organizations prepare for, respond to, and recover from unexpected disruptions that could influence negatively the operations, stability, or reputation of an organization. A crisis is generally defined as a sudden unwanted event that is characterized by uncertainty, time pressure, and financial, operational, or reputational threats. These are bank crises that can erupt from market and loan defaults, among other financial causes, to external ones like the COVID-19 pandemic. Appropriate crisis management may hence help organizations minimize harm, ensure stability, and learn from disruptions. According to the theory, this would require proactive

planning, rapid responses, and post-crisis appraisals that offer scope for improving resilience to future shocks (Zainab & Extension, 2024).

Crisis management theory categorizes the management of a crisis into three phases: pre-crisis, during-crisis, and post-crisis. The pre-crisis period is a period of preparedness through the identification of risks, their assessment, and the building of contingency plans. Organizations also form crisis management teams and design communication strategies to coordinate internal efforts. In the Saudi banking sector, the pre-crisis efforts involved monitoring credit and liquidity risks, investing in digital banking infrastructure to support operational continuity. On the other hand, however, the pandemic exposed weaknesses in remote operations and cybersecurity that drastically need improvement (Bricka et al., 2022).

The next phase involves crisis response, which is a timely response aimed at containing the disruption to reduce its impact. The period calls for fast decision-making with an assurance to stabilize operations and continuity of business. Communication during this stage is key in reassuring customers, regulators, and all the other stakeholders of how trustworthy the institution is. In response to COVID-19, Saudi banks have been involved in different strategies ranging from loan deferrals, increased liquidity support, and branch closures. Online banking has further expanded with the advancement of meeting customer needs and seamless

operations despite physical restrictive measures. This cooperation between banks and SAMA demonstrated the relevance of regulatory intervention in managing systemic risks during crises (Hale et al., 2005).

The post-crisis phase is characterized by recovery and learning to improve future crisis preparedness. It is in this regard that the organization assesses its response, identifying any shortcomings and areas of improvement, which then prompts revision of the risk management frameworks. Saudi banks have thus utilized the post-pandemic economic recovery period for further acceleration of digital transformation, increasing the level of operational resilience, and advancement of cybersecurity systems. They fine-tuned their crisis management strategies further to positions that would place them in better stead against possible disruptions in the future, such as economic volatility or technological risks (Ulmer et al., 2007).

Certain guiding principles behind effective crisis management include: preparedness with the aim of minimizing the impacts of crises; adaptability, with flexibility in responding to dynamic situations; clear communications with stakeholders to help build trust and diminish uncertainty; collaboration-both internally and with external partners-enhancing responses to crises; and continuous improvement, whereby an organization learns from past crises to better prepare itself for subsequent ones (Williams et al., 2017).

Every banking institution undertakes certain specific strategies, such as business continuity planning, stress testing, and contingency liquidity planning, toward making the banks stable in case of disruption. The COVID-19 pandemic thus saw Saudi banks adopt these strategies in managing credit risk, liquidity constraints, and operational challenges. Digital transformation has therefore been important in ensuring continuity in bank operations as banks shifted toward online services and remote work environments for customer demands and service delivery. Crisis management theory provides the most relevant perspective on how the Saudi banking sector could handle the situation that arose due to the COVID-19 pandemic. Proactive planning, rapid responses, and appropriate regulatory support were some of the lessons learned from the management of financial shocks. Such cooperation by the banks and SAMA has given evidence of both public-private sectors working together to ensure financial stability during crises. This experience will shape the future of crisis management in the Saudi Arabian banking sector, with a key emphasis on digital resilience, operational continuity, and the mitigation of risk (Elmahgop, 2024).

Thus, Crisis management theory provides a clear framework that guides organizations in responding to sudden disruptions. COVID-19 highlighted preparedness, adaptability, and continuous improvement in the evolution of crisis management practices. This theory helped Saudi banks manage financial,

operational, and technological risks without losing customers' trust or threatening their compliance with regulations. In the near future, the banking sector is expected to take a more advanced approach to manage crises to sustain their operations in an increasingly unpredictable global environment (Mizrak, 2024).

Crisis management theory underlines not only successive phases of handling but also points to the relevance of aligning crisis management strategies with the long-term objectives of an organization. It views crises as inevitable, especially in complex and interdependent systems related to banking, where disruptions may originate from both internal vulnerabilities and external shocks. Besides, a host of other crisis management imperatives beyond mere operational continuance exists in this setting to gain the public trust and protect institutional reputation, as both are vital ingredients in ensuring customer retention and regulatory compliance. The COVID-19 pandemic in the Saudi banking sector also serves as an example of how crisis management is shifting with respect to the rise of digital and operational resilience.

Among the most critical characteristics of crisis management theory, one features the so-called integration of risk identification into all the stages of management, whether in preparation, during a crisis, or in post-recovery stages. The pandemic highlighted how such rapidly evolving risks-including cybersecurity threats-require banks to adopt an agile approach to crisis management. In agile crisis management,

much quicker reactions and adjustments in strategy can be made in light of up-to-the-minute information. Scenario planning and stress testing have also emerged as some of the primary weapons that banks use to anticipate potential disruption and formulate pre-emptive actions in response. Indeed, these practices have vital relevance in a world economy given to volatility and, in the meantime, exposed to technological shifts due to the growing necessity for institutions to be prepared to cope with issues other than financial risk-related problems.

It also recognizes the role organizational culture plays in promoting crisis management principles based on transparency, collaboration, and accountability. In light of this, cross-functional crisis management teams have a significant effect on integrating different departments in responding effectively toward disruptions. The intervention of leadership into Saudi banks to handle the crisis management was very crucial during the pandemic; communication from top management was made in a very clear and consistent manner, so it helped in the stabilization of operation to gain trust among various types of stakeholders, including employees and customers. According to the theory of crisis management, one may also refer to the experiences from the past to develop long-term resilience. This involves assessing not only the immediate response but also the detection of weaknesses underlying the systems, processes, and decision-making frameworks. The use of digital services in Saudi banks during the pandemic has been emblematic of how institutions can employ

crises for times of innovation. Improvement in cybersecurity, investing in digital banking platforms, and remote work models testifies to the resilience of the banks towards future crises.

Moving forward, crisis management theory calls for continuous improvement via regular reviews, feedback loops, and adaptation of strategies against emerging risks. In the context of the Saudi banking sector, this has translated into keeping well ahead of the global trends-innovative use of AI and blockchain technology, among others-while maintaining strong crisis preparedness frameworks. It is also expected that with time, the contribution of collaboration between banks and regulatory bodies such as the Saudi Central Bank will shift with regards to the use of regulatory foresight and the adoption of proactive interventions. This model of collaboration will further cement the role of public-private partnership models in maintaining systemic risks and fostering financial stability in times of uncertainty.

In the final analysis, crisis management theory provides the conceptual framework from which disruptions can be addressed and converts challenges into strategic opportunities. For the Saudi banking sector, these lessons learned from COVID-19 will underpin and further inform future crisis management endeavors, setting the sector up for success within an increasingly tempestuous global environment. By embedding the pathways of digital transformation, operational

resilience, and strategic foresight within their crisis management practices, Saudi banks will be better equipped to address the uncertainties that lie ahead while realizing evolving customer and stakeholder expectations.

2.4.2. Risk Management Framework

A risk management framework is a structure applied by organizations to identify, assess, mitigate, monitor, and report risks. This is highly instrumental in ensuring resiliency, asset protection, and the achievement of regulatory and operational objectives. In the banking industry, it finds particular relevance during crises, such as that caused by the COVID-19 pandemic, by preparing them to manage uncertainties and help foster financial stability. The framework integrates policies, processes, and tools that guide decision-making at every level of the organization. It is in harmony with internal goals of profitability and continuity of operations, as well as with external regulatory requirements by the Saudi Central Bank - SAMA and international standards set by Basel accords. It is the flexibility that has made RMF able to update itself continuously on emerging risks and challenges through an identification, mitigation, and monitoring cycle (Emrouznejad et al., 2023).

The RMF consists of a few key components aimed at dealing systematically with risks. The identification of risks should highlight those types of threats that

might impair the operations or the financial health of the bank. It may encompass credit risk, liquidity risk, market risk, operational risk, and reputational risk. The banks assess, after identifying risks, according to the likelihood of risks and their potential impact; these may be through such tools as a risk matrix or scenario analysis. In this way, the work of prioritizing risks is achieved, and hence attention is paid to the most important ones within the shortest time possible. For example, during the COVID-19 pandemic, Saudi banks had to afford greater attention to liquidity risks and loan defaults, in light of the financial hazards posed by these. Banks do this through various means, such as avoiding the execution of an activity that may result in a risk; reduction in exposure, through internal controls and procedures; shifting of risk through insurance or outsourcing of activities; or acceptance of certain risks while setting up monitoring systems. For instance, it is by restructuring of loans, permission to postpone payment, and expansion of digital services during the pandemic period that Saudi banks managed to reduce potential exposure and ensured that customers maintained access to services. It is through monitoring of risk that risks are tracked minute by minute and changes are identified in real time. Dashboards and KRIs are some of the monitoring tools that give actionable insights to enable timely, proactive decisions. Reporting mechanisms are enabled to communicate understanding to senior management,

stakeholders, and regulators about risks arising and mitigation measures placed (Boukhatem, Jamel & Mouldi, 2020).

Governance structures form an integral part of the RMF, assigned with the responsibility to ensure accountability and adherence to the bank's strategic objectives. Typically, the governance structure is made up of the board of directors, specialized risk committees, and senior executives such as the CRO. The general practice in risk governance is to have what is called the "three lines of defense": while the first line comprises operational managers who have to manage risks on a day-to-day basis, the second line of defense includes risk and compliance teams that are called upon to provide oversight, and the third line, which comprises internal audit teams that perform independent assurance of the effectiveness of risk management processes. This governance model ensures that risks are managed comprehensively across the organization (Addae et al., 2023).

The COVID-19 experience in the Saudi banking sector truly reflects the importance of a sound RMF. Pre-crisis preparations partially put a sound footing through liquidity planning and digital banking infrastructure. At the same time, however, the pandemic also exposed areas to be enhanced, like remote operations and cybersecurity. Saudi banks took advantage of the crisis to demonstrate loan deferrals, tapped available liquidity support with SAMA, and further extended

online services. These risk monitoring tools helped banks to appraise the ever-changing situation and take corrective measures while trying to keep their responses effective. During the post-crisis stage, banks appraised performance gaps and further developed their RMFs in order to attain better preparedness for disruptions in the future. This is a good example of iterative learning within the framework (Almonifi et al., 2021).

A broad RMF covers credit risk, liquidity risk, market risk, operational risk, and compliance risks-the many varied risks a bank stands exposed to. Credit risk emanates from the inability of borrowers to repay loans; this normally increases in economic downturns. Liquidity risk is associated with the inability to meet short-term obligations due to a crisis in general. Market risks pertain to changes in the various financial markets, such as interest or exchange rate movements. Operational risks are connected with internal processes, systems, and events independent of the institution that may give rise to operations disruption, such as cybersecurity. Compliance risk is defined as failure to comply with the law and regulations, further leading to fines or loss of reputation. Reputational risk is the most critical kind, because any trust lost will have a multiplying effect on customer relationships and bottom-line results (Hossni, 2022).

The RMF addresses not just immediate risks but fosters long-term resiliency through monitoring and feedback loops. The lessons learned in previous crises will therefore form part of the organization in the future strategies to keep being prepared to face any other challenge. In the Saudi Arabian banking industry, such digitization had been accelerated by the COVID-19 pandemic because the banks realized that only technology would allow them to keep running their operations even against disruptions. Above all, it has now become essential to enhance cybersecurity and business continuity plans, which reflects changing risk landscape. There is also extensive collaboration required with regulators and industry partners on systemic risk management and the assurance of financial stability (Marcu, 2021).

Thus, the risk management framework allows banks to operate within a structured dynamic in mitigating uncertainties and protecting operations. It ranges from identification, assessment, mitigation, monitoring, and governance-the checklist that assures comprehensive coverage of risks and their consistency with organizational objectives. The COVID-19 pandemic showed the importance of a well-designed RMF in Saudi banks, which were able to surmount operational and financial pressures without denting customer confidence. With the ever-evolving character of global finance, banks should continue in their efforts toward reshaping

their RMFs to meet the emergence of new risks and be better prepared for the uncertainties that the future may bring.

In the increasingly unstable financial climate, a sound Risk Management Framework embraces more than management of current threats to position an organization for long-term resiliency. Technological changes, shifts in regulations, climate risks, and geopolitical unease are some of the dynamically changing vectors from various perspectives that continue to present risks. With the RMF, there is dynamic management that links risk mitigation to strategic goals quite clearly, thus enabling banks to foresee and handle complex risk situations with greater efficiency. And its relevance is further amplified in the relatedly connected world financial system in which the risks cascade, and where the proactivity of managing those risks is underlined.

Moreover, the acceleration of digital transformation has brought additional exposures to operational and cybersecurity risks. Large bank adoption of advanced technologies like AI, blockchain, and data analytics drives added efficiencies but introduces complexities in the identification and mitigation of risk. Therefore, the RMF should make use of real-time monitoring tools to move in tandem with such technological changes. Other emerging risk areas, such as cyber-attacks, data breaches, and third-party risks arising from outsourced services, certainly require

ongoing monitoring and engagement with external parties including regulators, technology providers, and customers.

Another critical aspect of the RMF in these contemporary times concerns ESG risks. There is a growing demand from stakeholders such as investors and regulators to include sustainability frameworks within the RMF of banks. ESG risks-for example, damage due to climate change, loss of reputation based on unethical practices, or failing to comply with environmental standards-can have a direct impact on the long-term viability of the bank. Therefore, forward-looking risk management with the consideration of ESG factors ensures that banks are in rhythm with international movements toward sustainability while attempting to minimize exposures to nonfinancial risks.

Moreover, the role of compliance with regulatory requirements is ever-growing within the framework of RMF. Global regulatory frameworks include the Basel III accords, which force banks to properly capitalize their buffers, manage liquidity risks, and conduct periodic stress tests for estimating their ability to bear any possible financial turmoil. For Saudi banks, international standards supported by local regulations specifically set by the Saudi Central Bank guarantee business continuity and instill confidence among stakeholders. This dual compliance shows

the importance of reconciliation between the best global practices and national policies to ensure the stability and strength of the financial system.

Besides governance structures, the RMF places increasing emphasis on the human element in realizing that effective risk management is not just about systems but about people. In that respect, the training programs for competency building among employees concerning the risk management and risk culture embedded within the organization's confines become of great importance. Banks need to further empower their workforce to proactively identify risks and make informed decisions at every operational level. A culture of transparency, accountability, and collaboration among departments enhances the overall effectiveness of the RMF.

In the post-COVID-19 perspective, the importance of scenario planning and stress testing has increased manifold. The pandemic has emphasized that even the best-prepared institutions can be swamped by unanticipated events and that the process of continuous improvement-scenario-based forecasting-is so urgently needed. Ongoing stress tests will also provide an opportunity for banks to know the degree of their preparedness in advance, in case there is a deterioration in economic recessions, interest rate increases, or market volatility. These proactive measures will contribute to banks fine-tuning their respective RMFs to keep them aligned with emerging risks, while maintaining operational resilience.

In this regard, the future of the RMF in banking is all about agility, innovation, and collaboration across boundaries. Since the financial ecosystem remains in flux, Saudi banks must continue to stay alert and keep refining their risk frameworks to meet the dynamic interaction of traditional and non-traditional risks. With an appropriate RMF, banks can handle not just uncertainties but also exploit emerging opportunities for long-term stability and sustainable growth in an unpredictable global environment.

2.4.3. Regulatory Intervention Theory

Regulatory Intervention Theory provides the principles and frameworks within which governments or regulatory bodies intervene in industries in general to guarantee that the markets are stable, their integrity is protected, and that the operation of the market is fair. This theory emphasizes the necessity of regulatory actions meant for reducing risks, protecting consumers, and preventing the collapse of any financial system in a crisis. The concept of regulatory intervention is deemed quite vital, especially within the banking industry, to establish financial stability, public confidence, and consequently furthering economic development (Sadeh et al., 2021).

The underlying principle behind the theory of Regulatory Intervention is that, left unregulated, financial institutions will eventually seek out risky practices

and actions considered unethical, which have the potential to bring down entire economies. This might cause market failures like monopolies, asymmetric information, or negative externalities. From the last point, inefficiencies, consumers' risks, or even systemic crises show up. Regulators intervene to fix these market failures with the establishment of rules and guidelines that make markets more transparent, competitive, less risky, and responsible. The requirements for maintaining adequate capital reserves, prudent lending, and due diligence while assessing risks are examples of regulations on banks. These regulations are put in place to protect the financial system from excessive risk exposure, which may lead to widespread defaults, liquidity problems, or systemic collapse (Acharya et al., 2011).

Among the integral developments of Regulatory Intervention Theory is the parallel its theory draws with the necessity to balance properly the need to foster innovation and competition on one hand, while preventing gratuitous behavior that will undermine stability in the markets. Innovation within the context of the financial sector drives the creation of new services, enhancement of efficiency, and finally, the ability to better meet consumer demand. On the other hand, however, innovation without regulation generates certain scenarios-the 2008 financial crisis of global dimensions, partly driven by innovative financial products such as subprime mortgages and complex financial derivatives that were not well

understood or regulated, is a case in point. The rationale for regulatory intervention within this context, therefore, seeks to balance the level of healthy market activity against mitigating potential risks from unregulated innovation (Allioui & Mourdi, 2023).

Regulators, especially in the banking industry, have to ensure the soundness of the institutions through several means and mechanisms. The most notable regulatory framework is developed by the Basel Committee on Banking Supervision-namely, the Basel Accords-establishing international standards in banking on capital adequacy, stress testing, and market liquidity risk. Accordingly, the aim is to ensure that banks have sufficient capital buffers that absorb financial impairment and contribute to a reduction in the likelihood of the failure of banks. In this regard, all central banks, including SAMA, impose requirements on liquidity management, credit risk assessment, and provisioning against loans to ensure that banks are able to withstand a severe economy (Gehrig et al., 2021).

Regulatory intervention during crisis periods has also been crucial, as witnessed during the COVID-19 pandemic. In circumstances like these, exceptional steps are taken to maintain stability in the financial system and prevent widespread economic disruption. Central banks are being emulated by regulators, like SAMA, in taking similar measures to enhance liquidity. For instance, there has

been a reduction in interest rates, coupled with emergency lending facilities for banks, to encourage programs that restructure loans and enable borrowers to be assisted. In fact, such interventions were extremely necessary to ensure financial stability in the economic challenges imposed by the pandemic (Giese, & Haldane, 2020).

Another important dimension of the theory of Regulatory Intervention relates to that of macroprudential regulation: regulators are concerned with the health of the system in general, rather than with individual institution health. The objectives of macroprudential policies would address systemic risk resulting from interconnectedness of financial institutions, excessive credit growth, or asset bubbles. The tools used by regulators to mitigate such risks include capital buffers, counter-cyclical measures, and systemic risk assessments. This approach is opposite to microprudential regulation, which works on the safety and soundness of individual financial institutions (Zulhibri, 2019).

The justification for regulatory intervention often finds reasonable cause in the existence of moral hazard within the financial system. Moral hazard occurs when, because of protection under a safety net, there is excessive risk-taking by financial institutions, knowing full well that, in case of failure, the government will bail them out. In that respect, the need for regulatory intervention becomes a check

against such behavior through penalty, accountability, and constraints on the kinds of risks permissible to take. For example, during the global financial crisis, governments across the world had to intervene in rescuing failed banks; this sparked a debate about moral hazard and the need to hold institutions accountable for their actions (MCCOY, 2008).

Another vital tenet of Regulatory Intervention Theory is consumer protection. Regulators would want consumers in the banking industry to be treated fairly, with transparency of financial products and suitability of their needs. These regulatory bodies put laws concerning consumer protection into place, which bind banks to give adequate information to consumers concerning loans, interest rates, fees, and all other financial products. This tries to dissuade predatory lending, unfair practices, and financial illiteracy that could otherwise lead to the exploitation of consumers or financial crises (Pasiouras, 2016).

Notwithstanding this, there are also some criticisms to be noted regarding Regulatory Intervention Theory. The risk of overregulation-that is, too much regulation tends to stifle innovation, reduce competition, and leads to the increasing costs of compliance for the financial institutions-might be a major challenge. Over-regulation can create inefficiencies, discourage new market entrants, or even hamper access to financial services. Another criticism is that regulatory

interventions cannot always keep pace with the rapidly changing financial markets and technologies, leaving gaps in the regulatory framework. These challenges require regulators to adopt flexible and adaptive policies that will balance the drive for mitigating risks with the needs for a dynamic and competitive financial system (Gai et al., 2019).

Moreover, sometimes regulatory intervention has unintended consequences, such as regulatory arbitrage, where institutions take advantage of loopholes or shift activities to less regulated parts. This undermines the intensity of regulations and leads to an accumulation of hidden risks. There is thus increased awareness that regulatory frameworks need to be comprehensive and subject to continuous updating if they are to keep pace with evolving risks and complexities in the financial system (Claessens and Kodres, 2014).

So, it is upon Regulatory Intervention Theory that the basis of oversight and regulation in financial markets rests, especially in banking. In essence, this accords the financial institutions a rule-based game of dos and don'ts that protect the stability of both the financial system and the customers from systemic crisis. Regulatory intervention thus ensures the necessary overcoming of market failures along with controlled risks for long-term economic growth. It also faces its challenges of over-regulation, regulatory lacuna, and unintended consequences.

What there is a need for is to balance and adapt varied approaches. Much as the landscape of financial services keeps changing in the world, so too must the regulatory bodies always remain watchful and pre-emptive so that any risks are neutralized while ensuring innovation and competition in the banking industry.

Figure 1 shows a diagram of the theoretical framework for the study. It illustrates the relationships between variables. Crisis Management Theory and Regulatory Intervention Theory influence the Risk Management Framework. The Risk Management Framework shapes the Impact on the Saudi Banking Sector. While the COVID-19 Pandemic as Context plays a critical role in shaping how risk management strategies impact the banking sector during the crisis.

This graph makes it evident to us that the goal of the current research is to examine the impact of the Corona pandemic on the Saudi banking sector and the role of risk management in crisis management according to the diagram in figure 1.

➤ **The Independent variable:**

The research's independent variable is shown in Corona pandemic and risk management.

➤ **The Dependent variable:**

The dependent variable under study is represented in Saudi banking sector and crisis management.

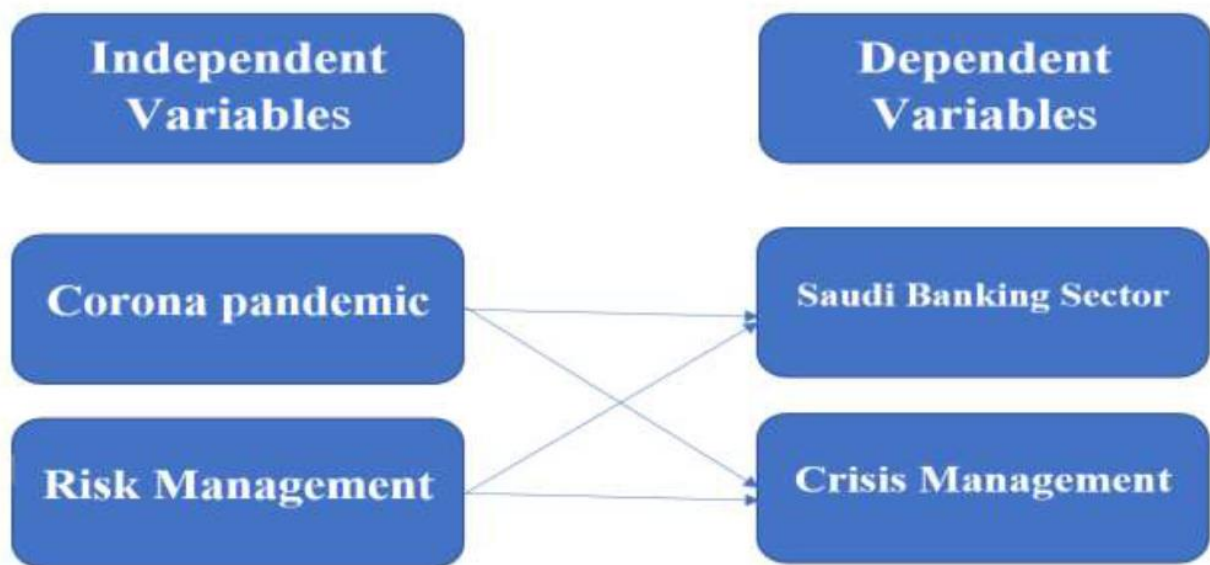


Figure 2.1 Research Framework

Table 2.1 Summary of the previous studies

Study	Theme	Objectives	Methodologies	Findings
Shengyu Tang (2024)	The impact of COVID-19 on banks and financial institutions	Investigate the pandemic's impact on banks and compare with past crises	Mixed-method approach: quantitative data from financial reports and qualitative insights from industry experts	Pandemic accelerated technological innovations in risk management and operational efficiency
Yukun Liu (2023)	Risk management in the banking sector during COVID-19	Explore the pandemic's effect on banking risks and responses	Analysis of market, credit, liquidity, and systemic risks; measures adopted by banks	Increased risks led to measures like capital buffers and adjusted lending policies; need for evolving risk management tools
Ziying Chen (2023)	Risk assessment of the banking industry	Analyze the pandemic's impact on systemic risk in banking	Examination of financial reports and regulatory measures	Highlighted importance of financial reporting and foreign exchange risk management;

	during COVID-19			crucial government interventions
Xu Peng (2023)	Risk management of commercial banks during COVID-19	Evaluate effectiveness of risk management strategies	Case studies of bank failures; analysis of regulatory frameworks like Basel Accord	Pandemic impacted bank profits; need for robust risk management frameworks
Shenqi Jin (2023)	Risk assessment of the banking industry during COVID-19	Analyze impact on liquidity, credit, market, and systemic risks	Case studies and regulatory measures analysis	Importance of adapting to new regulatory environments for stability
Hany saleh (2021)	National risk avoidance policies in Saudi Arabia during COVID-19	Evaluate effectiveness of national policies in limiting virus spread	Analysis of policy measures and outcomes in Saudi Arabia	Proactive national policies crucial in controlling virus spread and mitigating economic impact

Jamal M. Shamieh (2022)	Impact of COVID-19 on commercial banking risk management	Provide recommendations for practitioners based on survey evidence	Surveys with banking professionals	Practical recommendations for improving risk management practices
Jakhongir Kakhkharov & Shuhrat Yarashov (2024)	Banking during geopolitical change, financial crises, and pandemics	Analyze combined impact of these factors on banking	Comprehensive analysis of historical data and case studies	Need for adaptive strategies to manage risks in a changing global environment
Nadia Belkhir & Mouna Boujelbène Abbes (2024)	Impact of COVID-19 on volatility spillovers in the Saudi stock market	Analyze pandemic's effect on market volatility and spillovers	Quantitative analysis of stock market data	Significant changes in volatility patterns; need for robust risk management in stock markets
Siti Suhermi, Isfandayani, and Purnama Putra (2024)	Risk management strategy for Sharia mortgage products	Develop a risk management strategy for Sharia mortgage products at Bank BTN Syariah	Grand Strategy Matrix method (input, matching, decision stages)	Identified internal and external factors; suggested 5C principle for risk management; managerial

	during COVID-19			implications include enhanced risk monitoring and Sharia compliance
Zirui Wu (2023)	Effects of COVID-19 on regulatory and banking risk management frameworks	Analyze the impact of COVID-19 on regulatory and risk management practices in banks	Comparative analysis of regulatory changes and risk management practices	COVID-19 significantly altered regulatory landscape; increased importance of systemic risk management; need for quick adaptation by regulatory bodies
Mohammad Alsharif (2024)	Cost productivity analysis in dual banking sector during COVID-19	Analyze cost productivity of conventional and Islamic banks using Cost Malmquist Productivity Index	Cost Malmquist Productivity Index	Saudi Central Bank's policies mitigated pandemic impact; Islamic banks showed higher productivity; decline in productivity towards end of

				2022 due to tighter monetary policies
Ehaab D. Abdou (2022)	Strategic intelligence in crisis management in Saudi banking sector during COVID-19	Assess how strategic intelligence enhances crisis management	Case study approach focused on Asir region's banking sector	Strategic intelligence significantly improves crisis management capabilities
Ahmed Diab, Abdelmoneim Bahyeldin, Mohamed Metwally, Abdulkarim M. Alzakari, and Ayesha Fazal (2022)	Concurrent risks faced by banks during COVID-19	Identify and address various risks faced by banks during the pandemic	Comprehensive risk assessment framework	Identified key risks (credit, market, operational, liquidity); provided strategies for effective risk management
Syahiru Shafiai (2022)	Implications of COVID-19 on Islamic banks' risk	Examine how Islamic banks adapted risk management practices in	Qualitative analysis (interviews, financial reports)	Islamic banks implemented measures like increasing capital buffers and

	management practices	response to COVID-19		improving liquidity management
D. K. Ramesh, Michelle Lei, and S. Victorino (2022)	Changes in banking risk management policies pre- and post-pandemic	Compare risk management policies before and after COVID-19	Comparative analysis supported by case studies	Significant changes in risk management policies; adoption of more stringent measures during the pandemic
Mohammad Abdalkarim Alzuod and Laith Abdullah AlQhaiwi (2022)	Role of strategic flexibility in enhancing crisis management in commercial banking during COVID-19	Analyze how strategic flexibility improves crisis management	Mixed-method approach (quantitative data analysis, qualitative case studies)	Strategic flexibility is crucial for effective crisis management; enables quick adaptation to changing circumstances
Kamil Tomczak (2023)	Potential for a new banking crisis due to COVID-19	Assess long-term impact of COVID-19 on banking sector and likelihood of future crisis	Qualitative research (expert interviews, financial data analysis)	Banking sector has shown resilience, but significant risks remain; need for continuous vigilance and

Chapter Three. Methodology

3.1. Introduction

This chapter, the methodology of the study that was followed during the research will be presented by presenting the methodology used as well as a description of the sample that was applied to it, in addition to a comprehensive and accurate description of the tool that was used and the method used in its preparation and displaying the extent of its validity and reliability, in addition to clarifying the statistical methods and treatments used It was mainly relied upon in analyzing the hypotheses of the study in order to reach reliable scientific results.

3.2. Research Approach

Study was conducted to answer the questions that were raised, and therefore the study relied on the quantitative approach in order to The impact of the Corona

pandemic on the Saudi banking sector and the role of risk management in crisis management

3.3. Research Design

3.3.1. Research Sample

A random sampling method was used to select the study sample. Where the questionnaire was applied electronically via social networking sites to obtain the study sample, and the study sample consisted of (120) individuals

Table 3.2 Showing the Characteristics of the research sample

Characteristics	Sub Characteristics	N	%
Age Group	18 - 29 Years old	40	33.3%
	30 – 40 years old.	36	30%
	41- 50 years old	34	28.3%
	51 or more	10	8.4%
Gender	Male	67	55.8%
	Female	53	44.2%
Educational Level	Bachelor's degree	49	40.8%
	Master's degree	41	34.2%
	Doctorate degree	30	25%

Years of experience	less than 5 years	51	42.5%
	From 6 to 10 years	45	37.5%
	From 11 to 15 years	19	15.8%
	16 or more years.	5	4.2%
Total		120	100%

3.3.2. Data Collection

The study tool consisted of a questionnaire applied electronically, and the questionnaire consisted of two main parts:

- The first part: contains the basic data of the study sample.
- The second part: related to the items of the questionnaire, and it was divided into one sub-axes, as follows:
 - ✓ Axis 1: Impact of the Corona Pandemic on the Saudi Banking Sector, It consists of 7 items
 - ✓ Axis 2: Role of Risk Management in Crisis Management It consists of 7 items

The questionnaire will be used in order to collect data through the Three-point Likert scale, which can be expressed through the following table:

Table 3.3 The Five- point Likert scale

Term	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Answer degree	5	4	3	2	1

3.3.3. The Validity

Internal consistency was used to measure the validity of the tool by assessing the extent to which each item of the questionnaire is consistent with its corresponding construct. Pearson correlation coefficient was used to measure the correlation between each item and the total score of the construct it belongs to, as shown in the following table:

Table 3.4 shows the results of the correlation coefficient for the validity of the tool

Pattern Scales					
Impact of the Corona Pandemic on the Saudi Banking Sector			Role of Risk Management in Crisis Management		
No	Personal Correlation	Sig 2 tail	No	Personal Correlation	Sig 2 tail
1	0.455	0.000	1	0.683	0.000

2	0.561	0.000	2	0.391	0.000
3	0.536	0.000	3	0.675	0.000
4	0.695	0.000	4	0.717	0.000
5	0.678	0.000	5	0.738	0.000
6	0.594	0.000	6	0.634	0.000
7	0.716	0.000	7	0.544	0.000

To ensure the validity of the questionnaire, internal consistency was used as a key measure. Internal consistency assesses how well each item in the questionnaire aligns with its corresponding construct, ensuring that the items are reliable indicators of the factors they are meant to measure. In this study, the Pearson correlation coefficient was employed to determine the correlation between each individual item and the total score of the construct it belongs to. This method allows for an evaluation of how strongly each question relates to the overall concept it is designed to assess.

Table 3.4 presents the results of the correlation analysis for the two main constructs of the study: the impact of the Corona pandemic on the Saudi banking sector and the role of risk management in crisis management. For the construct measuring the Impact of the Corona Pandemic on the Saudi Banking Sector, the Pearson correlation coefficients for the seven items ranged from 0.455 to 0.716, all

of which are statistically significant ($p < 0.05$). This indicates that each item has a moderate to strong positive correlation with the overall construct score, suggesting that the questions are valid representations of how the pandemic affected the sector.

Similarly, for the construct evaluating the Role of Risk Management in Crisis Management, the correlation coefficients for the seven items ranged from 0.391 to 0.738, also showing statistical significance ($p < 0.05$). These results demonstrate a strong positive relationship between each question and the overall risk management construct, validating the consistency of the items in reflecting how risk management contributed to handling the crisis during the pandemic.

3.3.4. The Reliability

To calculate the questionnaire's reliability coefficient, we used Cronbach's alpha coefficient to determine the degree of stability of the tool. The following table shows the reliability coefficient

Table 3.5 shows the results of Cronbach's alpha coefficient for the reliability of the tool.

The dimension	Number of phrases	Cronbach's alpha
Impact of the Corona Pandemic on the Saudi Banking Sector	7	0.78

Role of Risk Management in Crisis Management	7	0.74
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To assess the reliability of the questionnaire, Cronbach's alpha coefficient was used to determine the internal consistency and stability of the tool. Cronbach's alpha is a widely accepted measure of reliability that indicates how well the items in a particular construct are correlated and whether they measure the same underlying concept. A higher Cronbach's alpha value (closer to 1) indicates greater reliability and internal consistency. Table 4 presents the results of the reliability analysis for the two dimensions of the questionnaire: Impact of the Corona Pandemic on the Saudi Banking Sector and Role of Risk Management in Crisis Management. For the first dimension, Impact of the Corona Pandemic on the Saudi Banking Sector, which consists of seven items, the Cronbach's alpha coefficient was 0.78. This indicates a good level of internal consistency, suggesting that the items are closely related and reliably measure the effects of the pandemic on the banking sector. For the second dimension, Role of Risk Management in Crisis Management, also consisting of seven items, the Cronbach's alpha coefficient was 0.74. This result demonstrates a reasonable level of reliability, indicating that the items in this dimension are consistent in measuring how risk management played a role in crisis handling. Both values of Cronbach's alpha (0.78 and 0.74) fall within an acceptable range for reliability, which generally indicates that the questionnaire is a stable and consistent

tool for measuring the intended constructs. These results provide confidence that the responses collected using this questionnaire will be reliable and trustworthy for further analysis.

3.3.5. Study Procedures

In the beginning, the questionnaire was designed by looking at the previous studies on the subject of the research, and through the theoretical frameworks that were collected. After designing the questionnaire, it was presented to a number of arbitrators, and the necessary amendments were made through deletion and addition.

Then both the validity and reliability criteria of the tool were calculated. After that, the questionnaire was prepared electronically and distributed for the use of social networking sites such as Facebook and WhatsApp, and after application, data were collected in order to reach reliable scientific results.

3.3.6. The Statistical Methods used

The data collected from the sample were entered using the program (SPSS-V.22).

The statistical methods that were used to process the data varied, including:

- Cronbach's Alpha coefficient to ensure consistent performance.
- Use frequencies and percentages to determine the significance of the sample's responses to the questionnaire items.

- Correlation coefficient for the calculation of honesty.
- Regression analysis

Chapter Four. Results and Finding

4.1. Introduction

This chapter discusses the statistical analysis of the collected data. It consists of a set of analytical processes that are followed to obtain clear and meaningful scientific information and results that meet the objectives of the study and answer its research questions.

4.2. Statistical Analysis and Results Interpretation

4.2.1. Impact of the Corona Pandemic on the Saudi Banking Sector

Table 4.6 Show The result of the first Q1

N	phrases	Mean	SD	Order
0				
1	The Corona pandemic significantly disrupted the banking operations in Saudi Arabia.	3.85	0.799	2
2	The pandemic led to a decline in profits and revenues for Saudi banks	3.63	1.069	5

3	Digital banking services became more important during the pandemic.	3.85	0.881	3
4	The pandemic affected the loan approval and lending policies of Saudi banks	3.62	0.976	6
5	Customer interactions with banks became more reliant on digital platforms during the pandemic.	3.63	1.069	7
6	The pandemic caused a reduction in overall banking transactions and investment activities	3.75	0.827	4
7	Saudi banks were able to respond effectively to customer needs during the pandemic	3.93	0.959	1

Table 5 provides an overview of the results from the first question (Q1) regarding the impact of the Corona pandemic on the Saudi banking sector. The data includes the mean (average score), standard deviation (SD), and ranking order of the phrases, which reflect the respondents' perceptions of how the pandemic affected different aspects of banking in Saudi Arabia.

The phrase "Saudi banks were able to respond effectively to customer needs during the pandemic" received the highest mean score of 3.93, with a standard deviation of 0.959, ranking first. This indicates that respondents largely agreed that

Saudi banks were effective in meeting customer demands during the pandemic, showing their ability to adapt to the crisis.

The phrase "The Corona pandemic significantly disrupted the banking operations in Saudi Arabia" had a mean score of 3.85 and a standard deviation of 0.799, ranking second. This suggests that respondents recognized the pandemic's significant impact on banking operations, though they did not perceive the disruption to be as severe as other factors. Both "Digital banking services became more important during the pandemic" and "The pandemic caused a reduction in overall banking transactions and investment activities" had mean scores of 3.85 and 3.75, respectively, indicating strong agreement among respondents about the increased importance of digital banking and the decline in banking activities due to the pandemic. Meanwhile, the phrases "The pandemic led to a decline in profits and revenues for Saudi banks" and "Customer interactions with banks became more reliant on digital platforms during the pandemic" each had mean scores of 3.63, with standard deviations of 1.069, ranking fifth and seventh, respectively. These results suggest a moderate level of agreement that profits and customer interactions were affected by the pandemic, but not as strongly as other factors. Lastly, "The pandemic affected the loan approval and lending policies of Saudi banks" had the lowest mean score of 3.62, with a standard deviation of 0.976, ranking sixth. This shows that

while respondents acknowledged the impact of the pandemic on loan policies, it was perceived as less significant compared to other disruptions.

Overall, these findings highlight the varied effects of the pandemic on different aspects of Saudi banking, with customer service responses and the increased reliance on digital platforms being viewed as critical factors during the crisis.

4.2.2. Role of Risk Management in Crisis Management

Table 4.7 Show Results of the second Q2

N o	phrases	Mean	SD	Order
1	Risk management policies played a crucial role in mitigating the impact of the pandemic on the banking sector	3.82	0.866	3
2	Saudi banks had sufficient risk management strategies in place before the pandemic	3.76	0.929	4
3	The pandemic highlighted the need for more robust risk management frameworks in banks	3.75	0.931	5
4	Risk management teams responded effectively to the crisis during the pandemic	3.93	0.929	1

5	The pandemic led to a revision of risk management policies within Saudi banks.	3.89	0.838	2
6	Risk management helped Saudi banks maintain stability during the economic downturn caused by the pandemic.	3.44	0.947	7
7	Saudi banks have become better prepared for future crises due to their experience during the pandemic	3.50	0.956	6

The results from the second section of the questionnaire, as shown in Table 4.6, highlight respondents' perceptions regarding the effectiveness of risk management in mitigating the challenges posed by the Corona pandemic in the Saudi banking sector.

The phrase "Risk management teams responded effectively to the crisis during the pandemic" received the highest mean score of 3.93, indicating strong agreement among respondents that risk management teams played a pivotal role in handling the crisis. The relatively low standard deviation of 0.929 suggests that responses were consistently positive in this regard, underscoring the effectiveness of these teams during the pandemic.

Similarly, "The pandemic led to a revision of risk management policies within Saudi banks" ranked second with a mean score of 3.89. This result reflects the recognition that the pandemic prompted many Saudi banks to reevaluate and adjust

their risk management policies, which was seen as a crucial step toward strengthening their resilience in the face of such an unprecedented event.

The third-ranked phrase, "Risk management policies played a crucial role in mitigating the impact of the pandemic on the banking sector", had a mean score of 3.82. This indicates that respondents acknowledged the vital role these policies played in reducing the overall impact of the crisis, though slightly less strongly compared to the role of the teams themselves.

On the other hand, "Saudi banks had sufficient risk management strategies in place before the pandemic" and "The pandemic highlighted the need for more robust risk management frameworks in banks" received mean scores of 3.76 and 3.75, respectively. These scores suggest that while respondents felt Saudi banks were somewhat prepared with risk management strategies before the pandemic, the experience exposed the need for even more robust frameworks to handle future crises effectively.

The lowest-ranked phrases, "Saudi banks have become better prepared for future crises due to their experience during the pandemic" (mean score of 3.50) and "Risk management helped Saudi banks maintain stability during the economic downturn caused by the pandemic" (mean score of 3.44), indicate some level of agreement but with less conviction. This implies that, while risk management

contributed to stability and future preparedness, respondents felt there is room for improvement in these areas.

Overall, these findings emphasize the crucial role that risk management played during the pandemic but also highlight the need for enhanced strategies and preparedness for future crises. The consistent agreement among respondents demonstrates that while Saudi banks performed well during the pandemic, lessons learned should lead to stronger risk management frameworks moving forward.

4.3. Test Hypotheses

- ✓ **H1: There is a statistical impact at the level of (0.05) of Corona pandemic on Saudi banking sector.**

Table 4.8 The impact of Corona pandemic on Saudi banking sector.

Hypothesis	Sales Performance	
	Pearson Correlation	Sig. (2-tailed)
Corona pandemic on Saudi banking sector.	0.327	0.000

The hypothesis (H1) states that there is a statistically significant impact of the Corona pandemic on the Saudi banking sector at the 0.05 significance level. To test this, Pearson correlation analysis was used, with a focus on understanding the relationship between the pandemic and the sector's sales performance. The results, as shown in Table 9, reveal a Pearson correlation coefficient of 0.327, indicating a

moderate positive relationship between the pandemic and the banking sector's performance. This suggests that as the impact of the pandemic increased, there was a corresponding moderate effect on the sales performance of Saudi banks. Moreover, the significance level (Sig. 2-tailed) was 0.000, which is well below the threshold of 0.05, confirming that this relationship is statistically significant. In other words, the data strongly supports the hypothesis that the pandemic had a significant impact on the banking sector. Therefore, we can conclude that the Corona pandemic indeed influenced various aspects of the Saudi banking sector, particularly in terms of sales performance. The moderate positive correlation and the highly significant p-value underscore the substantial effect of the pandemic on industry.

- ✓ **H2: There is a statistical impact at the level of (0.05) of Corona pandemic on crisis management**

Table 4.9 The impact of Corona pandemic on crisis management

Hypothesis	Sales Performance	
	Pearson Correlation	Sig. (2-tailed)
	0.327	0.001

The second hypothesis (H2) posits that there is a statistically significant impact of the Corona pandemic on crisis management at the 0.05 level. To examine this relationship, Pearson correlation analysis was conducted, as reflected in Table

9. The results show a Pearson correlation coefficient of 0.327, indicating a moderate positive correlation between the pandemic and crisis management. This suggests that the Corona pandemic had a moderate influence on how crisis management was handled in various sectors, including banking. Furthermore, the significance level (Sig. 2-tailed) was 0.001, which is below the critical threshold of 0.05. This p-value confirms that the relationship between the pandemic and crisis management is statistically significant. The data supports the hypothesis, indicating that the pandemic had a notable impact on crisis management strategies and responses. In conclusion, based on these findings, we can confirm that the Corona pandemic significantly affected crisis management practices. The moderate correlation (0.327) implies that as the challenges of the pandemic grew, so did the efforts and changes in crisis management. The statistical significance of the results reinforces the importance of adapting crisis management strategies to effectively respond to such large-scale disruptions.

- ✓ **H3: There is a statistical impact at the level of (0.05) of risk management on Saudi banking sector.**

Table 4.10 The impact of risk management on Saudi banking sector.

Hypothesis	Sales Performance	
	Pearson Correlation	Sig. (2-tailed)
Risk management on Saudi banking sector.	0.622	0.000

The third hypothesis (H3) suggests that there is a statistically significant impact of risk management on the Saudi banking sector at the 0.05 level. To test this hypothesis, Pearson correlation analysis was used, and the results are shown in Table 11. The analysis revealed a Pearson correlation coefficient of 0.622, indicating a strong positive correlation between risk management practices and the performance of the Saudi banking sector. This strong correlation suggests that as the effectiveness of risk management increases, there is a significant positive impact on the overall performance of the banking sector. Additionally, the significance level (Sig. 2-tailed) was 0.000, which is well below the 0.05 threshold, confirming that the relationship between risk management and the banking sector's performance is statistically significant. This low p-value indicates that the findings are not due to chance and that there is a clear, significant connection between the implementation of strong risk management practices and improved performance in the sector. , the results support the hypothesis (H3) that risk management plays a critical role in influencing the Saudi banking sector. The strong correlation and significant p-value highlight the importance of risk management in ensuring the stability and success of banks, particularly in challenging times. This finding underscores the need for robust risk management frameworks to enhance the resilience and performance of financial institutions.

- ✓ **H4: There is a statistical impact at the level of (0.05) of risk management on crisis management**

Table 4.11 Regression analysis model summary

R	R Square	Adjusted R Square	Mean Square	F	Sig
0.707a	0.500	0.488	7.563	42.624	0.000b

Table 4.12 Coefficients of Independent Variable

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Risk management	0.466	0.089	0.464	5.252	0.000

The fourth hypothesis (H4) suggests that there is a statistically significant impact of risk management on crisis management at the 0.05 level. To test this hypothesis, regression analysis was performed, and the results are shown in Table 12 and Table 13. In Table 12, the R value of 0.707 indicates a strong positive relationship between risk management and crisis management. The R Square value of 0.500 means that 50% of the variation in crisis management can be explained by risk management practices. This shows that risk management plays a significant role in influencing how effectively crises are managed. The F value of 42.624 and the

significance level (Sig.) of 0.000 confirm that the regression model is statistically significant, meaning that the relationship between risk management and crisis management is not due to chance. Table 13 presents the coefficients of the independent variable, risk management. The unstandardized coefficient (B) for risk management is 0.466, meaning that for every unit increase in risk management effectiveness, crisis management improves by 0.466 units. The standardized coefficient (Beta) of 0.464 further supports this strong relationship. The t value of 5.252 and the significance level of 0.000 indicate that the impact of risk management on crisis management is highly significant. In summary, the results strongly support the hypothesis that risk management has a significant and positive impact on crisis management. The data reveals that effective risk management contributes substantially to better handling of crises, accounting for half of the variance in crisis management outcomes. This underscores the critical role of risk management in preparing for and mitigating the effects of crises in various sectors, including banking.

4.4. Verification of Hypotheses

Table 4.13 Verification of Hypotheses

No	Hypotheses	Sig
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H1	There is a statistical impact at the level of (0.05) of Corona pandemic on Saudi banking sector.	Accepted
H2	There is a statistical impact at the level of (0.05) of Corona pandemic on crisis management	Accepted
H3	There is a statistical impact at the level of (0.05) of risk management on Saudi banking sector.	Accepted
H4	There is a statistical impact at the level of (0.05) of risk management on crisis management	Accepted

The verification of the hypotheses, as outlined in Table 14, confirms that all the proposed hypotheses in this study were accepted based on statistical significance. The first hypothesis (H1), which states that the Corona pandemic had a statistically significant impact on the Saudi banking sector, was accepted. This indicates that the pandemic caused significant disruptions in banking operations, affecting various aspects such as profitability, customer interactions, and general banking activities. Similarly, the second hypothesis (H2), which asserts that the Corona pandemic had a significant impact on crisis management, was also confirmed. This suggests that the pandemic highlighted weaknesses in existing crisis management frameworks, prompting organizations, including banks, to adapt their strategies to manage crises more effectively. The third hypothesis (H3), which posits that risk management has a statistically significant impact on the Saudi banking sector, was also accepted. This emphasizes the importance of risk management in maintaining the stability and

performance of banks, particularly in the face of challenges like the pandemic. Strong risk management practices proved essential in navigating disruptions and ensuring continuity in banking operations. Finally, the fourth hypothesis (H4), which states that risk management has a significant impact on crisis management, was confirmed. This finding underscores the critical role of risk management in crisis preparedness and response, demonstrating that effective risk management can significantly enhance an organization's ability to handle crises efficiently. The acceptance of all four hypotheses highlights the significant influence that both the Corona pandemic and risk management practices had on the Saudi banking sector and crisis management. These results stress the need for robust risk management frameworks to ensure stability and effective crisis handling in times of uncertainty.

Chapter Five. Discussion and conclusion

This chapter deals with the discussion of the results reached through this research with the results of previous researchers, as well as presenting the difficulties that the researcher encountered during conducting the research, and the recommendations and research proposals for the benefit of subsequent researchers.

5.1. Discussion

The results of this study clearly demonstrate the significant impact of both the Corona pandemic and risk management on the Saudi banking sector and crisis management practices. The findings confirm that the pandemic caused considerable disruptions in the banking sector, as highlighted by the acceptance of H1, which showed a statistically significant impact of the pandemic on the operations, profitability, and overall performance of Saudi banks. This aligns with the global experience, where the financial sector faced numerous challenges due to reduced economic activity and increased operational risks during the pandemic (BIS, 2020).

Similarly, H2 highlighted the substantial effect of the pandemic on crisis management practices. The findings suggest that the crisis exposed vulnerabilities in existing frameworks and necessitated stronger, more adaptive crisis management strategies. This is consistent with research indicating that global financial institutions had to quickly revise their crisis management protocols in response to the

unprecedented scale of the pandemic (PwC, 2020). The Saudi banking sector, like many others, had to evolve its crisis management strategies to remain resilient during such turbulent times.

The importance of risk management was further emphasized through H3 and H4, which showed that risk management had a statistically significant impact on both the Saudi banking sector and crisis management. The results from H3 confirm that robust risk management practices are crucial for maintaining the stability and performance of financial institutions, especially in uncertain environments. This finding is consistent with previous studies that suggest that effective risk management is a key factor in safeguarding banks from unexpected external shocks (McKinsey, 2021).

Moreover, H4 highlighted that risk management not only affects financial performance but also plays a vital role in enhancing crisis management. The strong correlation between risk management and crisis handling, as demonstrated in the regression analysis, underscores the importance of having well-structured risk management frameworks in place. This supports findings in existing literature that suggest organizations with advanced risk management systems were better equipped to handle the challenges posed by the pandemic (Deloitte, 2020).

In conclusion, the study's results underscore the critical role of both external events like the pandemic and internal mechanisms such as risk management in shaping the performance and resilience of the banking sector. The Saudi banking sector's response to the pandemic provides important insights into the value of adaptive risk management practices in navigating crises effectively. These findings suggest that ongoing investment in risk management infrastructure is essential for ensuring not only financial stability but also the ability to manage future crises with greater efficiency and preparedness.

The findings of this study provide a comprehensive overview of the impact of the Corona pandemic on the Saudi banking sector, as well as the role of risk management in crisis response. The results from Table 5 indicate that Saudi banks were generally viewed as responsive and adaptable during the pandemic, especially in terms of meeting customer needs and shifting towards digital platforms. The highest-ranked phrase, "Saudi banks were able to respond effectively to customer needs during the pandemic" (mean = 3.93), underscores the sector's resilience in maintaining essential services despite the challenges. This aligns with global trends in banking during the pandemic, where financial institutions had to quickly adapt to remote operations and enhance digital service offerings to continue serving customers (BIS, 2020).

At the same time, respondents acknowledged that the pandemic significantly disrupted banking operations, as shown by the second-ranked phrase "The Corona pandemic significantly disrupted the banking operations in Saudi Arabia" (mean = 3.85). Although the disruptions were substantial, they were not perceived as severe as the banks' ability to maintain service continuity. The growing importance of digital banking services, with a mean score of 3.85, reflects the accelerated shift towards digital transformation in response to the pandemic, which helped mitigate the impact of physical branch closures and reduced in-person transactions. Interestingly, phrases related to profit decline and changes in customer interactions—such as "The pandemic led to a decline in profits and revenues for Saudi banks" and "Customer interactions with banks became more reliant on digital platforms"—received moderate scores (mean = 3.63). This indicates that while the pandemic affected financial performance and altered the nature of customer interactions, these factors were not viewed as the most critical challenges. However, respondents recognized the impact on lending policies, with "The pandemic affected the loan approval and lending policies of Saudi banks" having the lowest score (mean = 3.62), suggesting that while loan activities were disrupted, it was less of a pressing concern compared to other operational areas.

When examining the role of risk management, the results from Table 6 emphasize its critical importance during the pandemic. The phrase "Risk

management teams responded effectively to the crisis during the pandemic" (mean = 3.93) received the highest rating, highlighting the pivotal role these teams played in helping banks navigate the crisis. This is consistent with research indicating that banks with strong risk management frameworks were better positioned to handle the uncertainties of the pandemic. Furthermore, the phrase "The pandemic led to a revision of risk management policies within Saudi banks" (mean = 3.89) reflects how the pandemic prompted many banks to reevaluate and strengthen their risk management frameworks in preparation for future crises.

Although respondents acknowledged the effectiveness of existing risk management policies, as seen in the phrase "Risk management policies played a crucial role in mitigating the impact of the pandemic" (mean = 3.82), they also recognized that improvements were necessary. For instance, the phrases "Saudi banks had sufficient risk management strategies in place before the pandemic" (mean = 3.76) and "The pandemic highlighted the need for more robust risk management frameworks" (mean = 3.75) suggest that while banks had some risk management structures in place, the pandemic exposed gaps that need to be addressed to enhance future preparedness.

The lower-ranked phrases, "Saudi banks have become better prepared for future crises due to their experience during the pandemic" (mean = 3.50) and "Risk management helped Saudi banks maintain stability during the economic downturn

caused by the pandemic" (mean = 3.44), indicate that while risk management contributed to overall stability, respondents believe there is room for further improvement. This finding aligns with broader discussions on the need for continuous enhancement of risk management practices to adapt to increasingly complex and unpredictable global challenges

In conclusion, the results of this study highlight the crucial role that both digital transformation and risk management played in helping the Saudi banking sector navigate the challenges of the Corona pandemic. While Saudi banks were largely successful in maintaining service continuity and adapting to new customer needs, there is a clear recognition that future risk management frameworks must be strengthened to better prepare for potential crises. These findings suggest that the pandemic serves as both a test and an opportunity for the banking sector to build more resilient and adaptive structures moving forward.

5.2. Recommendations

Based on the findings of this study, several key recommendations can be made to strengthen the resilience of the Saudi banking sector and improve its crisis management capabilities:

1. **Enhance Risk Management Frameworks:** While the study found that risk management teams were effective during the pandemic, there is a need to

further develop and strengthen these frameworks. Banks should invest in more advanced risk management tools and strategies that can anticipate and mitigate risks posed by future global crises. This includes regular updating of risk management policies and scenario-based planning to prepare for a wide range of potential disruptions.

2. Accelerate Digital Transformation: The increased reliance on digital platforms during the pandemic underscores the importance of continuing investments in digital banking services. Banks should focus on enhancing their digital infrastructure, ensuring that they can efficiently handle increased online transactions and provide seamless digital services to customers, even during crises. This would also include ensuring cybersecurity measures are robust enough to handle the potential increase in cyber threats associated with more digital interactions.
3. Strengthen Crisis Management Practices: The pandemic highlighted gaps in crisis management that must be addressed. Saudi banks should develop comprehensive crisis management plans that incorporate lessons learned from the pandemic. This includes ensuring that crisis management teams are well-trained, equipped with the necessary resources, and can respond quickly to emerging threats. Regular drills and audits of crisis preparedness should be part of the ongoing strategy.

4. **Focus on Customer-Centric Innovations:** While customer service responses during the pandemic were effective, there is room for more customer-centric innovations. Banks should explore new ways to enhance customer experiences, particularly through personalized digital services, tailored financial products, and increased customer support during crises. Ensuring customer satisfaction in difficult times can help retain loyalty and strengthen the bank's market position.
5. **Continuous Monitoring and Evaluation:** The banking sector should adopt a continuous monitoring and evaluation system to assess the effectiveness of their risk management and crisis response strategies. This will help in identifying areas that require improvement and allow for timely adjustments in response to evolving challenges.

5.3. Future Research

While this study has provided valuable insights into the impact of the Corona pandemic on the Saudi banking sector and the role of risk management, several areas of future research are worth exploring:

1. **Comparative Analysis of Risk Management Practices Across Sectors:** Future research could examine how risk management practices in the banking sector compare to other industries during the pandemic. This would provide a broader

understanding of what strategies were most effective across different sectors and could help develop cross-sectoral best practices for crisis management.

1. Longitudinal Studies on Crisis Management: Long-term studies could be conducted to track the evolution of crisis management practices in the banking sector over time. This would allow for an analysis of how well the sector adapts to ongoing and future challenges, including new financial crises, natural disasters, or other global disruptions.
2. Exploring the Role of Technology in Risk Management: Further research could delve deeper into the role of emerging technologies, such as artificial intelligence and big data analytics, in enhancing risk management and crisis response capabilities. Understanding how these technologies can be integrated into banking operations would provide valuable insights into improving efficiency and decision-making.
3. Customer Perception Studies: Future research could focus on how customers perceive the banking sector's response during crises, particularly in terms of digital banking services and customer support. This would help identify gaps in customer satisfaction and highlight areas for improvement in service delivery during emergencies.
4. Post-COVID Economic Recovery: Investigating the long-term impact of the pandemic on the economic recovery of the Saudi banking sector could provide

insights into the sustainability of recovery efforts and the role of financial institutions in supporting broader economic resilience.

By exploring these areas, future research can build on the findings of this study and provide a more comprehensive understanding of how the banking sector can better prepare for and respond to future crises.

5.4. Conclusion

This study has explored the significant impact of the Corona pandemic on the Saudi banking sector and highlighted the critical role that risk management played in mitigating the challenges brought about by the crisis. The findings demonstrate that, while the pandemic caused considerable disruptions in banking operations, profits, and customer interactions, Saudi banks were generally effective in responding to customer needs and adapting to new realities, particularly through the increased use of digital platforms. Risk management was shown to be a pivotal factor in navigating the crisis, with banks' risk management teams and policies playing a crucial role in maintaining stability and resilience. However, the results also point to the need for further enhancement of risk management frameworks and crisis management strategies to ensure that banks are better prepared for future disruptions. The experience of the pandemic has underscored the importance of having robust, adaptable, and forward-looking risk management and digital

transformation strategies in place. In conclusion, while Saudi banks performed well during the pandemic, the lessons learned from this experience should guide future efforts to strengthen risk management practices and crisis preparedness. By continuing to invest in digital transformation and refining their risk management frameworks, Saudi banks can enhance their resilience and remain competitive in an increasingly uncertain global environment.

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SURVEY INSTRUMENT

The global outbreak of the COVID-19 pandemic brought about unprecedented challenges to numerous sectors, including the banking industry. The Saudi banking sector, like many others across the world, experienced significant disruptions in its operations, services, and overall financial performance. In light of these events, this questionnaire has been developed to explore the specific impact of the Corona pandemic on the Saudi banking sector, with a particular focus on the role of risk management in mitigating the crisis. The primary objective of this survey is to gather insights from professionals working in the banking industry, highlighting the changes that occurred during the pandemic and evaluating the effectiveness of the risk management strategies employed by Saudi banks. The information collected will offer valuable perspectives on how well-prepared these banks were in handling the crisis and how their experiences may shape future risk management approaches within the sector. The questionnaire is structured into two main sections. The first section, The Impact of the Corona Pandemic on the Saudi Banking Sector, focuses on assessing how the pandemic influenced various aspects of banking, such as operations, profitability, customer interactions, and business strategies. The second section, The Role of Risk Management in Crisis Management, evaluates how prepared Saudi banks were in terms of their risk management policies, how these policies were implemented during the crisis, and what improvements can be made for future preparedness.

Thank you.

1. Demographic data

Please answer the following questions

Gender:

Male ☐

Female ☐

Age group:

✓ 18 - 29 Years old

✓ 30 – 40 years old.

✓ 41- 50 years old.

✓ 51 – or more

Educational level:

✓ Bachelor's degree

✓ Master's degree

✓ Doctorate degree

Years of experience:

✓ Less than 5 years

✓ 6- 10 years.

✓ 11- 15 years.

✓ 16 or more years.

Please indicate how much you agree or disagree with the following statements about The impact of the Corona pandemic on the Saudi banking sector and

the role of risk management in crisis management(✓) in front of the statement as follows:

1) Strongly disagree (2) disagree (3) Neutral (4) Agree (5) Strongly agree

1. Questionnaire terms

Questionnaire terms

No	Term	Strongly disagree	disagree	Neutral	Agree	Strongly agree
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Axis 1: Impact of the Corona Pandemic on the Saudi Banking Sector

1	The Corona pandemic significantly disrupted the banking operations in Saudi Arabia.					
2	The pandemic led to a decline in profits and revenues for Saudi banks					
3	Digital banking services became more important during the pandemic.					
4	The pandemic affected the loan approval and lending policies of Saudi banks					
5	Customer interactions with banks became more reliant on digital platforms during the pandemic.					
6	The pandemic caused a reduction in overall banking transactions and investment activities					
7	Saudi banks were able to respond effectively to customer needs during the pandemic					

Axis 2: Role of Risk Management in Crisis Management

1	Risk management policies played a crucial role in mitigating the impact of the pandemic on the banking sector					
2	Saudi banks had sufficient risk management strategies in place before the pandemic					
3	The pandemic highlighted the need for more robust risk management frameworks in banks					
4	Risk management teams responded effectively to the crisis during the pandemic					
5	The pandemic led to a revision of risk management policies within Saudi banks.					
6	Risk management helped Saudi banks maintain stability during the economic downturn caused by the pandemic.					
7	Saudi banks have become better prepared for future crises due to their experience during the pandemic					