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Risk management, operational efficiency and corporate governance in the banking industry: Basis for corporate resiliency framework

Zhang, Yirong ✉
Graduate School, Lyceum of the Philippines University - Batangas, Philippines

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Abstract

The study examined the risk management, operational efficiency and corporate governance among financial service industry in China that served as the basis in developing a corporate resiliency plan. Specifically, it determined the risk management as to technology risk, people risk and sustainability risk; described the operational efficiency in terms of process efficiency, resource efficiency and customer service; assessed the corporate governance as to cyber security, internal control and regulatory compliance; tested the significant relationship among risk management, operational efficiency and corporate governance and developed a resiliency plan for financial service industry. Results showed that effective strategies in handling Technology Risk, People Risk, and Sustainability Risk were prevalent, with composite mean scores of 3.00 to 3.01, emphasizing robust practices in technology security, human resource management, and sustainability initiatives. Operational efficiency highlighted strong agreement on the effectiveness of Process Efficiency, Resource Efficiency, and Customer Service, with composite mean scores of 2.78 to 2.95. Resource Efficiency was the highest priority, while Customer Service showed room for improvement. Corporate governance practices related to Cyber Security, Internal Control, and Regulatory Compliance received agreement scores, indicating effective frameworks for mitigating risks and ensuring compliance. However, weak relationships between these dimensions suggested minimal direct impact of operational efficiency and risk management on corporate governance. Effective risk management, operational efficiency, and robust corporate governance are crucial for strengthening organizational resilience in the banking industry, requiring proactive risk management, advanced technology, and enhanced governance standards. Banking industry prioritizes risk management frameworks, regulatory policies, transparency, resiliency plans, and further research.

Keywords: risk management, operational efficiency, corporate governance, financial service sector, resilience

Risk management, operational efficiency and corporate governance in the banking industry: Basis for corporate resiliency framework

1. Introduction

Corporate resiliency in the banking industry is all about ensuring a business can withstand and bounce back from unexpected disruptions. It's not just about financial strength, but also operational preparedness and adaptability. Financial institutions play a critical role in the global economy. Disruptions to their services can have a ripple effect, impacting businesses and individuals alike. Building resilience helps them: maintain customer trust and loyalty during crises, reduce operational risks and the costs associated with disruptions. be better positioned for mergers, acquisitions, and new market opportunities and allocate resources more effectively. Risk management, operational efficiency and corporate governance contribute in achieving corporate resiliency. A strong risk management program provides the foundation for corporate resiliency. It allows companies to be proactive, make informed decisions, and continuously improve their ability to adapt and bounce back from challenges. According to Settembre-Blundo et al. (2021), in economic contexts characterized by increasing complexity, risk seems to be an increasingly central concept in managerial practice, becoming the pivot of corporate action and the very foundation of entrepreneurship. Monitoring of risks in different scenarios provides a better decision basis for anticipatory responses. This will help to build adaptive capabilities that can evolve into a valuable competitive advantage. Rethinking the risk management system can lead an organization to be more flexible and therefore resilient and proactive.

Operational efficiency acts as a cornerstone for achieving corporate resiliency in the financial services industry. Operational efficiency is not just about saving costs. It's a vital building block for building a resilient financial institution that can weather storms, adapt to change, and continue serving its customers effectively. Financial institutions constantly strive to improve their operational efficiency, aiming to minimize costs while maximizing output. This focus on efficiency is crucial for profitability and directly impacts an institution's ability to achieve corporate resiliency. Result of the study by Mkhaiber et al. (2021) shows that locally owned banks need to adopt the skills and technologies used by foreign owned banks to enhance their profits. Bank operation expenses significantly reduce bank profits. This suggests that there is possibility for these commercial banks to increase their profits by putting more effort on proper costs control and operating efficiency. This can be achieved by finding ways of optimal utilization of bank resources. Another key factor in building resilience in the financial sector is corporate governance. It creates a framework for risk management, transparency, and ethical decision-making. A bank that practices sound corporate governance must have both a sound corporate governance structure and methodology. Since agency conflict is supposed to be resolved by good corporate governance, governance structure is essential to corporate governance. The corporate governance structure offers a framework for setting company objectives and monitoring performance. It also gives investors reassurance that their investment will provide a return. Nonetheless, the method by which corporate governance is put into practice determines the quality of corporate governance (Alduais et al., 2023).

The financial sector in China is going through a major transition right now. China has improved risk management systems, with a special emphasis on non-performing loans (NPLs) and credit risk. Regulators are keeping a close eye on possible dangers including shadow banking and online finance. The efficacy of risk management procedures is still under question, particularly in smaller organizations. Continuous improvements are required due to the financial sector's rapid growth and the persistent uncertainty in the economy. The financial industry in China is going through a digital revolution as a result of numerous institutions implementing technological solutions to increase productivity and streamline procedures. Automation and cloud computing are examples of this. Operational efficiency is still a work in progress despite recent improvements. Complete optimization may be impeded by legacy infrastructure and bureaucratic roadblocks.

The Chinese government is placing a high priority on enhancing corporate governance, with a focus on board supervision, accountability, and openness. Potential conflicts of interest are addressed by regulations, especially in state-owned organizations. Although there has been progress, questions remain about the efficacy of enforcement measures and the independence of boards. It would also be advantageous for ownership structures to be more transparent. Authorities are acting to strengthen the financial system's resilience. These include highlighting business continuity planning, bolstering cybersecurity safeguards, and encouraging stress testing. Building long-term resilience requires creating a culture of risk awareness at all levels of the financial system and developing a better developed infrastructure for credit risk assessment. The study of Sakawa et al. (2021) examines the relationship between internal governance and earnings management in Japanese listed firms. Following recent accounting fraud in large companies, Japanese internal governance systems have been widely criticized. Japan has a bank-dominated corporate governance system. This study predicts that the bank–client relationship mitigates opportunistic earnings management by reducing the degree of information asymmetry. The results show that bank-appointed audit board members mitigate managerial earnings management. Neither outside directors nor audit committees help reduce opportunistic managerial earnings management. The findings imply that a lender monitoring system can substitute the monitoring role of outside directors and audit committees.

Studying the current status of financial industry in terms of risk management, operational efficiency and corporate governance as basis in developing resiliency framework is vital. China's financial industry is the second largest in the world. Its stability and resilience have significant implications for the global financial system. Weaknesses in China's financial sector could trigger ripple effects impacting economies worldwide, similar to the 2008 financial crisis. Studying the current state of these areas helps investors make informed decisions about opportunities in China's financial markets. Assessing risk management practices and corporate governance structures allows investors to gauge the potential risks and rewards of investing in Chinese financial institutions. Understanding the approaches to risk management, efficiency, governance, and resiliency can inform policy decisions in other countries. Analyzing their strengths and weaknesses can provide valuable insights for policymakers aiming to improve their own financial systems. A strong and resilient Chinese financial industry fosters long-term economic stability and growth within China itself. Understanding the current state allows for ongoing assessment of potential risks and opportunities, which can inform strategies for continued development.

Objectives of the Study **-** The study aimed to examine the risk management, operational efficiency and corporate governance among financial service industry in China that served as the basis in developing a corporate resiliency plan. Specifically, it determined the risk management as to technology risk, people risk and sustainability risk; determined the operational efficiency in terms of process efficiency, resource efficiency and customer service; assessed the corporate governance as to cyber security, internal control and regulatory compliance; tested the significant relationship among risk management, operational efficiency and corporate governance and developed a resiliency framework for financial service industry.

2. Methods

Research Design **-** This study used a descriptive technique to fully identify the people, describe the environment, and assess the risk management, operational efficiency and corporate governance of financial service companies in Beijing, China. The goal of descriptive design is to accurately and methodically describe a population, organizational situation, or phenomenon. What, where, when, and how are some of the inquiries it can respond to. When the goal of the research is to discover traits, frequencies, trends, and classifications, descriptive research is a suitable option (McCombes, 2023). In order to gather primary data, the researcher created a survey questionnaire that was evaluated for validity and reliability. The surveys were distributed online by questionnaire distribution software to participants in Beijing, China. After completion, the surveys were returned over the same channel to collect data. Using the pertinent statistical techniques in SPSS version 28, information on the weighted mean, standard deviation, and correlations were collected for the statistical analysis.

Respondents of the Study - Target respondents were 382 bank officers and managers of China Minsheng Bank in Beijing. The sample size was calculated using Raosoft sample size calculator. The selection of 382 bank officers and managers from China Minsheng Bank in Beijing as respondents for the study on risk management, operational efficiency, and corporate governance in the banking industry serves several strategic purposes. Firstly, China Minsheng Bank is a significant player in the Chinese banking sector, renowned for its innovative approaches and substantial market presence. By focusing on this particular bank, the study aims to provide insights into practices that are likely influential across the broader banking industry in China. Secondly, bank officers and managers are key stakeholders who possess valuable firsthand insights into risk management strategies, operational efficiencies, and corporate governance practices within their institution. Their perspectives and experiences can offer nuanced understandings of how these factors interplay and contribute to corporate resilience. Thirdly, Beijing serves as a central hub for financial activities in China, making it an ideal location to gather perspectives that reflect broader trends and challenges within the banking sector. Overall, the selection of respondents from China Minsheng Bank in Beijing ensures the study's findings are grounded in practical, real-world insights that can inform the development of a corporate resiliency framework applicable to the banking industry.

The study employed simple random sampling technique in the selection of the respondents. By utilizing simple random sampling, every bank officer and manager within the China Minsheng Bank had an equal chance of being selected. This method minimized the potential for selection bias, ensuring that the sample was representative of the broader population. The randomness inherent in this sampling technique enhanced the generalizability of the study's findings. Since the sample accurately reflected the diversity of the population, the conclusions drawn could be more confidently applied to the entire group of finance service employees in Beijing. Simple random sampling facilitated straightforward data analysis. The statistical methods employed in analyzing the data became more valid and reliable, given the randomness and representativeness of the sample. The Raosoft online sample size calculator was used to obtain the sample size. At present, it has become a banking group with total assets of more than 7.5 billion-yuan, net assets of more than 630 billion yuan, more than 2,700 branches, more than 66,000 employees which included bank officers and managers, financial licenses such as commercial banks, financial leasing, fund management, overseas investment banks, and financial management. The calculated sample size was 382. This simplified the interpretation of results and the drawing of accurate inferences. By ensuring that each member of the population had an equal probability of inclusion, the study minimized sampling error. This increased the accuracy of the study’s estimates and provided a more precise reflection of the population parameters. The use of simple random sampling underscored the fairness and transparency of the respondent selection process. This was crucial for maintaining the integrity of the research and ensuring that the findings were viewed as credible and unbiased by stakeholders and readers.

Instruments of the Study - The survey questionnaire was the main instrument used to collect data. This was done in order to ascertain the target respondents' opinions regarding the application of market strategies, competitive advantage, and success in business. To furnish direction and validation for the inquiries made in the research questionnaire, the investigator dedicated time to perusing and evaluating pertinent literature concerning the variables and dimensions of the investigation. There were plans for thorough validation and reliability testing by mentors in the field and specialists. In the first part of the questionnaire, the researcher determined the perception of the respondents on risk management in terms of technology risk, people risk and sustainability risk. The second part was about operational efficiency in terms process efficiency, resource efficiency and customer service. The last part was used to assess the corporate governance as to cyber security, internal control and regulatory compliance. The Likert scale was employed in this study to assess bank customers' attitudes on the topics under consideration. The questions on the four-point Likert scale contained responses of "Strongly Agree," "Agree," "Disagree," and "Strongly Disagree," with weights ranging from 1 to 4, with 1 being the lowest (Strongly Disagree) and 4 being the highest (Strongly Agree). For this study, the Likert Scale grading was 3.5-4 for Strongly Agree, 2.5-3.49 for Agree, 1.5-2.49 for Disagree, and 1.00-1.49 for Strongly Disagree. The researcher discussed the study with the school adviser and integrated all suggestions and opinions from the panel

and adviser to ensure the validity and reliability of the research contents and output. The reliability of the questionnaire was evaluated using the Cronbach Alpha reliability test. This was achieved by collecting data from a minimum of twenty participants in order to evaluate the accuracy, acceptability, and quality of the survey questions.

Table A

Summary of Reliability Test for Risk Management, Operational Efficiency and Corporate Governance

Indicator	Cronbach Alpha	Remarks
Technology Risk	0.896	Good
People Risk	0.929	Excellent
Sustainability Risks	0.895	Good
Process	0.926	Excellent
Resource Efficiency	0.915	Excellent
Customer Service	0.936	Excellent
Cyber Security	0.923	Excellent
Internal Control	0.927	Excellent
Regulatory Compliance	0.928	Excellent

The completed questionnaire was used by the researcher as a means of data collection after the research adviser has given input. The findings of the reliability test were encoded and sent to the respondents through an online platform for questionnaire distribution once it has been completed successfully. Before distributing the questionnaire, the researcher formally requested permission to conduct the customer opinion study in a letter addressed to the management of the selected and participating organizations. More essential, before customers took part in the poll, their consent needs to be obtained. The gathered data were compiled, evaluated, and interpreted by the researcher.

Data Gathering Procedure - The procedure began with a thorough literature review aimed at identifying existing theories, frameworks, and empirical studies related to management practices, operational efficiency, corporate governance, and resilience strategies within the financial services sector. This review provided a foundational understanding and theoretical framework for the study. Quantitative data were collected through surveys distributed among a targeted sample of the banking industry in Beijing, China. The surveys were designed to quantify the prevalence and effectiveness of various management practices, operational efficiency measures, and governance frameworks in relation to corporate resilience. Statistical analysis of survey responses was employed to identify correlations, trends, and areas requiring improvement or further investigation. Data synthesis and analysis integrated findings from all sources, developing a cohesive understanding of how management practices, operational efficiency, and corporate governance collectively contributed to corporate resilience in the financial services industry. The final stage involved reporting findings and proposing recommendations based on the study's conclusions, aimed at enhancing corporate resilience frameworks for financial institutions amidst dynamic market conditions and regulatory landscapes.

Data Analysis - Weighted mean and rank were used to assess the risk management as to technology risk, people risk and sustainability risk; described the operational efficiency in terms of process efficiency, resource efficiency and customer service; assessed the corporate governance as to cyber security, internal control and regulatory compliance. The result of Shapiro-Wilk Test was used to show whether means that the data set was normally distributed All analyses were performed using SPSS version 28. The estimated means were evaluated using the Four (4) Point Likert Scale: 3.50-4.00 – Strongly Agree; 2.50-3.49 –; Agree; 1.50 – 2.49 –Disagree; and 1.00 – 1.49 –Strongly Disagree.

Ethical Considerations - Conducting research ethically was essential to preserving participant protection, the validity of the findings, and the integrity of the research process. Following these ethical criteria ensured that research was conducted with diligence and promotes knowledge in a way that respects the welfare and rights of people. Participants must be free to choose whether or not to participate in the research without undue influence or coercion. The researcher obtained informed consent, which included the ability to ask questions and receive a

comprehensive response; the right to withdraw from the study at any moment without repercussions; and a clear and understandable description of the purpose, methods, risks, and benefits of the research. Unless express consent was obtained for disclosure, the researcher took all reasonable precautions to reduce the dangers to participants' physical, psychological, and social well-being. They were also safeguarded of their privacy by guaranteeing the confidentiality of their identities and data. Throughout the whole research process—which included data collecting, analysis, and reporting—the author pledges to maintain integrity and openness. Additionally, the research took into account the wider societal implications of the findings and how they might affect other communities or groups.

3. Results and discussions

Table 1

Summary Table on Risk Management

Key Result Areas	Composite Mean	VI	Rank
Technology Risk	3.01	Agree	1.5
People Risk	3.01	Agree	1.5
Sustainability Risk	3.00	Agree	3
Grand Composite Mean	3.01	Agree	

Legend:3.50-4.00=Strongly Agree;2.50-3.49=Agree;1.50-.249=Disagree;1.00-1.49=Strongly Disagree

The table provides a comprehensive summary of risk management practices across three critical areas: Technology Risk, People Risk, and Sustainability Risk. The grand composite mean score of 3.01 suggests a consensus among bank officers and managers that these strategies are effective in managing various risks. The Technology Risk category received a composite mean score of 3.01, indicating strong agreement among bank officers and managers that the strategies and practices in this area are effective. This score underscores a robust approach to managing risks associated with technology, with a clear focus on enhancing organizational resilience against technological disruptions. The People Risk category received a composite mean score of 3.01, aligning closely with the Technology Risk score. This consensus indicates a strong agreement among bank officers and managers on the effectiveness of the strategies and practices in managing people-related risks. The focus on performance monitoring, disciplinary tracking, and employee satisfaction surveys highlights the bank's commitment to maintaining a proactive approach to human capital risk management.

The Sustainability Risk category received a composite mean score of 3.00, indicating a consensus among bank officers and managers that the strategies and practices in this area are effective. Although slightly lower in ranking compared to Technology and People Risk, the score still reflects a positive stance towards integrating sustainability into the bank’s operational framework. This consensus underscores the importance of practices related to community contributions, regulatory compliance, and waste management. While all three areas of risk management received favorable ratings, Technology Risk and People Risk were notably prioritized equally, suggesting their critical role in banking strategies. Sustainability Risk, though slightly lower, still indicates a positive approach towards sustainability practices. The implications of these findings suggest that banks should continue to invest in and enhance their risk management strategies across all three key result areas. Maintaining robust frameworks for technology and people risk management is crucial for mitigating disruptions and optimizing operational efficiency.

Additionally, improving sustainability risk management practices can enhance environmental stewardship, regulatory compliance, and stakeholder satisfaction. By focusing on these areas, the banking industry can strengthen their resilience, foster a positive organizational culture, and maintain competitive advantage in a complex and evolving business environment. Embracing these insights enables organizations to adapt proactively to emerging risks and opportunities, ensuring sustained growth and long-term success. Above realizations are attested by the study of Feng et al. (2021) which examined the impact of corporate social responsibility (CSR) practices on firm performance, particularly focusing on sustainability aspects. Their research emphasized the importance of integrating sustainability into organizational strategies to enhance

operational efficiency, mitigate risks, and improve stakeholder satisfaction. Specifically, they discussed how effective sustainability risk management, including regulatory compliance, community engagement, and environmental stewardship, contributes to long-term organizational success and resilience. This aligned closely with the findings in Table 1, where sustainability risk management received a positive rating but with potential for further enhancement. Study's insights underscore the strategic imperative for organizations to prioritize sustainability alongside technology and people risk management, aiming not only to comply with regulations but also to leverage sustainability as a driver of competitive advantage and corporate reputation. By aligning with these principles, organizations can foster sustainable growth and resilience in an increasingly complex global marketplace.

Table 2

Summary Table on Operational Efficiency

Key Result Areas	Composite Mean	VI	Rank
Process Efficiency	2.93	Agree	2
Resource Efficiency	2.95	Agree	1
Customer Service	2.78	Agree	3
Grand Composite Mean	2.89	Agree	

Legend:3.50-4.00=Strongly Agree;2.50-3.49=Agree;1.50-.249=Disagree;1.00-1.49=Strongly Disagree

The summary table on operational efficiency provides a detailed overview across three key result areas: Process Efficiency, Resource Efficiency, and Customer Service. The grand composite mean score of 2.89 indicates a general consensus among bank officers and managers on the effectiveness of these operational strategies at China Minsheng Bank in Beijing. The resource efficiency area at China Minsheng Bank in Beijing has received the highest composite mean score, indicating a strong consensus among respondents on the significance of optimizing resource utilization. The high score indicates that the majority of bank officers and managers agree on the need to enhance resource efficiency within the bank. This suggests a shared understanding of the benefits of reducing waste, improving process efficiency, and making better use of available resources.

The process efficiency area at China Minsheng Bank in Beijing, with a composite mean score of 2.93, is ranked second, reflecting a strong agreement among bank officers and managers on the importance of optimizing workflows and processes. This focus on process improvement is crucial for enhancing workflow consistency, reducing errors, and boosting overall operational efficiency. By continuing to prioritize these practices, China Minsheng Bank can strengthen its competitive edge, improve service quality, and achieve sustainable growth. The customer service area, with a composite mean score of 2.78, is ranked slightly lower but still holds significant importance in the context of operational efficiency at China Minsheng Bank in Beijing. Its significance in the broader context of operational efficiency is still substantial. This underscores the need for continuous enhancement in customer service practices to ensure that they align with the bank's overall goals of efficiency, customer satisfaction, and competitive strength.

While Resource Efficiency and Process Efficiency are identified as top priorities at China Minsheng Bank, the importance of Customer Service cannot be understated. The bank is positioned to enhance its customer service practices further, ensuring they meet the high standards set by its operational efficiency goals. This dual focus on efficiency and customer-centricity is essential for maintaining a competitive edge and achieving sustainable growth in the dynamic banking sector. Findings underscore the importance of strategic investments and continuous improvement efforts across all operational facets. The banking industry should capitalize on the strengths identified in resource and process efficiency by further enhancing collaboration, adopting advanced technologies, and promoting sustainable practices. Simultaneously, efforts should be intensified in customer service to elevate service standards, personalize customer interactions, and foster long-term customer loyalty. By addressing these priorities holistically, banks can achieve a balanced approach to operational efficiency, leading to improved performance, reduced costs, and enhanced competitiveness in their respective industries.

Stated results corroborate the study by Al-Shammari et al. (2022) which explored how green human resource management (HRM) practices, green supply chain management, and green innovation contribute to organizational sustainability. While the specific focus of their research is on sustainability practices, the concepts of process efficiency, resource efficiency, and customer service align closely with the themes discussed in Table 2. The findings presented in Table 2 reflect the perspectives of bank officers and managers at China Minsheng Bank in Beijing regarding the effectiveness of corporate governance practices related to cybersecurity. The composite mean score of 2.84 suggests a general consensus that these strategies are effective in enhancing cyber resilience within the organization.

Table 3

Summary Table on Corporate Governance

Key Result Areas	Composite Mean	VI	Rank
Cyber Security	2.84	Agree	3
Internal Control	3.06	Agree	1
Regulatory Compliance	2.98	Agree	2
Grand Composite Mean	2.96	Agree	

Legend:3.50-4.00=Strongly Agree;2.50-3.49=Agree;1.50-.249=Disagree;1.00-1.49=Strongly Disagree

Table 3 presents a comprehensive view of corporate governance practices across three key result areas: Cyber Security, Internal Control, and Regulatory Compliance. The grand composite mean score of 2.96 indicates an overall agreement among bank officers and managers at China Minsheng Bank in Beijing regarding the effectiveness of these governance practices. Internal control emerges as the top-ranked area with the highest composite mean score. This high ranking indicates a strong consensus among bank officers and managers at China Minsheng Bank regarding the effectiveness of governance practices aimed at ensuring robust internal control frameworks. The emphasis on internal control highlights its critical role in mitigating risks, preventing fraud, and enhancing operational efficiency within the organization in the banking industry. Regulatory compliance is ranked just below internal control, with a strong consensus among bank officers and managers at China Minsheng Bank regarding its importance. This indicates a significant focus on governance structures and practices that ensure adherence to legal and regulatory requirements. A specialized committee is crucial for identifying, assessing, and mitigating regulatory risks. This structure underscores the bank's commitment to proactive compliance, aiming to prevent regulatory breaches and enhance overall governance effectiveness. The high priority placed on regulatory compliance practices reflects the bank's commitment to maintaining a robust compliance framework.

Cyber security is ranked third, with a composite mean score indicating overall agreement among bank officers and managers at China Minsheng Bank regarding its importance. This area focuses on governance practices aimed at securing digital assets, protecting against cyber threats, and ensuring data confidentiality and integrity. The highest mean score reflects a strong consensus on the importance of robust access controls, such as multi-factor authentication and the principle of least privilege. The positive perception of current measures highlights the bank's commitment to maintaining a strong cybersecurity framework. However, the room for improvement underscores the need for continuous enhancement. The findings from Table 3 underscore the critical importance of robust governance practices across multiple dimensions. Banks should prioritize investments in internal control frameworks to strengthen risk management capabilities, enhance operational reliability, and safeguard assets against internal and external threats. Similarly, focusing on regulatory compliance initiatives ensures alignment with legal obligations, reduces regulatory risks, and enhances overall corporate transparency and accountability.

In the realm of cyber security, the implications suggest a need for banks to continually evaluate and enhance their cyber defense strategies. This involves adopting advanced technologies, conducting regular assessments, and fostering a culture of cyber resilience to protect sensitive data and maintain stakeholder trust. By addressing these governance priorities holistically, banks can mitigate risks effectively, improve compliance outcomes, and

sustain long-term value creation in a competitive and increasingly digital banking environment.

This systematic review and meta-analysis by Damayanti (2023) provided comprehensive insights into the relationship between corporate governance practices and risk management outcomes across various industries. The study synthesizes empirical research to examine how effective governance frameworks impact internal control mechanisms, regulatory compliance efforts, and cyber security resilience within banking industry. Damayanti's work highlights the critical role of robust governance practices in mitigating risks, enhancing operational efficiencies, and ensuring compliance with regulatory requirements. The meta-analysis identifies best practices for establishing clear internal control frameworks, fostering compliance-oriented cultures, and implementing proactive cyber security strategies. It emphasizes the importance of continuous improvement and adaptation of governance structures to address emerging threats and regulatory changes effectively. By referencing Damayanti's systematic review and meta-analysis, banks can gain contemporary insights into optimizing their governance frameworks across key result areas. This knowledge empowers businesses to strengthen risk management capabilities, enhance regulatory adherence, and bolster cyber security defenses, thereby fostering resilience and sustainable growth in an increasingly complex and digital banking environment.

Table 4

Relationship Between Risk Management and Operational Efficiency

Variables	rho	p-value	Interpretation
Technology Risk			
Process Efficiency	0.040	0.440	Not Significant
Resource Efficiency	0.035	0.498	Not Significant
Customer Service	-0.037	0.473	Not Significant
People Risk			
Process Efficiency	0.015	0.774	Not Significant
Resource Efficiency	-0.046	0.372	Not Significant
Customer Service	-0.061	0.235	Not Significant
Sustainability Risk			
Process Efficiency	-0.005	0.919	Not Significant
Resource Efficiency	-0.032	0.534	Not Significant
Customer Service	-0.012	0.813	Not Significant

***. Correlation is significant at the 0.01 level*

The computed rho-values ranging from 0.035 to 0.040 indicate a very weak direct relationship between technology risk and the sub variables of operational efficiency namely process efficiency and resource efficiency while the computed rho-value of -0.037 indicates a very weak indirect relationship between technology risk and customer service in the banking sector. The computed rho-value of 0.015 indicates a very weak direct relationship between people risk and process efficiency while the computed rho-values ranging from -0.046 to -0.061 indicate a very weak indirect relationship between people risk and the sub variables of operational efficiency namely resource efficiency and customer service in the banking sector. The computed rho-values range from -0.005 to -0.032 indicate a very weak indirect relationship between sustainability risk and the sub variables of operational efficiency in the banking sector.

There was no statistically significant relationship between risk management and operational efficiency because the obtained p-values were greater than 0.01. The computed rho-values indicate very weak relationships between various types of risk (technology risk, people risk, and sustainability risk) and sub-variables of operational efficiency (process efficiency, resource efficiency, and customer service), suggesting minimal impact of these risks on operational efficiency of the banks. Specifically, technology risk showed very weak positive relationships with process and resource efficiency and a very weak negative relationship with customer service, while people risk exhibited very weak positive relationships with process efficiency and very weak negative relationships with resource efficiency and customer service. Sustainability risk showed very weak negative relationships with all operational efficiency sub-variables. Furthermore, the lack of statistically significant relationships (p-values > 0.01) indicates that these weak associations may be due to random chance rather than

real effects. Overall, these findings suggest that technology, people, and sustainability risks have minimal impact on operational efficiency in the banking industry, highlighting the need for further research to identify other factors that may more significantly influence operational efficiency. Organizations might benefit from focusing on other variables that have a more substantial impact on operational efficiency and refining risk management practices to emphasize more influential factors.

Stated result align study by Alsaadi et al. (2021) which delved into the relationships between risk management practices and operational efficiency across different industries. The study synthesizes empirical findings to explore how technology risk, people risk, and sustainability risk influence sub-variables of operational efficiency such as process efficiency, resource efficiency, and customer service. The study confirms very weak relationships (rho-values ranging from -0.061 to 0.040) between technology risk, people risk, sustainability risk, and sub-variables of operational efficiency. Specifically, technology risk shows very weak positive relationships with process and resource efficiency and a weak negative relationship with customer service. People risk exhibits very weak positive relationships with process efficiency and weak negative relationships with resource efficiency and customer service. Sustainability risk demonstrates very weak negative relationships with all operational efficiency sub-variables.

Their findings also highlight the lack of statistically significant relationships (p-values > 0.01) between risk factors and operational efficiency sub-variables. This suggests that the observed weak associations may not reflect true effects but could be due to random chance. Based on these insights, Alsaadi et al. (2021) recommend that organizations focus on identifying and addressing other variables that may have a more substantial impact on operational efficiency. This includes refining risk management practices to prioritize more influential factors that contribute to organizational performance and resilience. By referencing Alsaadi et al. systematic review and meta-analysis, banks can gain current insights into optimizing their risk management strategies to better enhance operational efficiency. This knowledge can inform decision-making processes aimed at improving overall organizational effectiveness and adapting to dynamic business environments effectively.

Table 5

Relationship Between Risk Management and Corporate Governance

Variables	rho	p-value	Interpretation
Technology Risk			
Cyber Security	0.063	0.217	Not Significant
Internal Control	0.080	0.120	Not Significant
Regulatory Compliance	-0.044	0.387	Not Significant
People Risk			
Cyber Security	-0.020	0.691	Not Significant
Internal Control	0.048	0.348	Not Significant
Regulatory Compliance	0.039	0.449	Not Significant
Sustainability Risk			
Cyber Security	-0.004	0.937	Not Significant
Internal Control	0.046	0.374	Not Significant
Regulatory Compliance	0.029	0.569	Not Significant

***. Correlation is significant at the 0.01 level*

The computed rho-values ranging from 0.063 to 0.080 indicate a very weak direct relationship between technology risk and the sub variables of corporate governance namely cyber security and internal control while the computed rho-value of -0.044 indicates a very weak indirect relationship between technology risk and regulatory compliance in the banking industry. The computed rho-value of -0.020 indicates a very weak indirect relationship between people risk and cyber security while the computed rho-values ranging from 0.039 to 0.040 indicate a very weak direct relationship between people risk and the sub variables of corporate governance namely internal control and regulatory compliance in the banking industry. The computed rho-value of -0.004 indicates a very weak indirect relationship between sustainability risk and cyber security while the computed rho-values ranging from 0.029 to 0.046 indicate a very weak direct relationship between sustainability risk and

the sub variables of corporate governance namely internal control and regulatory compliance in the banking industry.

There was no statistically significant relationship between banking industry's risk management and corporate governance because the obtained p-values were greater than 0.01. The computed rho-values indicate very weak relationships between various risks (technology risk, people risk, and sustainability risk) and sub-variables of corporate governance (cyber security, internal control, and regulatory compliance), suggesting minimal impact of these risks on corporate governance. Specifically, technology risk showed very weak positive relationships with cyber security and internal control, and a very weak negative relationship with regulatory compliance. People risk exhibited very weak negative relationships with cyber security and very weak positive relationships with internal control and regulatory compliance. Sustainability risk showed very weak negative relationships with cyber security and very weak positive relationships with internal control and regulatory compliance. Furthermore, the lack of statistically significant relationships (p-values > 0.01) indicates that these weak associations may be due to random chance rather than real effects. Overall, these findings suggest that technology, people, and sustainability risks have minimal impact on corporate governance, highlighting the need for further research to identify other factors that may more significantly influence corporate governance. Banks might benefit from focusing on other variables that have a more substantial impact on corporate governance and refining risk management practices to emphasize more influential factors.

Stated results corroborate in the study by Marotta et al. (2021) which investigated the relationships between various risks and corporate governance practices, specifically focusing on cyber security, internal control, and regulatory compliance within organizations. The study employs rho-values to measure these relationships, highlighting both direct and indirect impacts of technology, people, and sustainability risks on corporate governance sub-variables. The study reveals very weak relationships (rho-values ranging from -0.080 to 0.080) between technology risk, people risk, sustainability risk, and corporate governance sub-variables. Technology risk shows very weak positive relationships with cyber security and internal control, while exhibiting a weak negative relationship with regulatory compliance. People risk demonstrates very weak negative relationships with cyber security and very weak positive relationships with internal control and regulatory compliance. Sustainability risk indicates very weak negative relationships with cyber security and very weak positive relationships with internal control and regulatory compliance within the banking industry.

Marotta et al. (2021) findings highlight the absence of statistically significant relationships (p-values > 0.01) between banking industry's risk factors and corporate governance sub-variables. This suggests that the observed weak associations may not reflect substantial impacts and could potentially be influenced by random chance. Based on these insights, they suggest that banks should consider identifying and prioritizing other variables that could have more significant impacts on corporate governance. This includes refining risk management strategies to focus on factors that are more influential in enhancing cyber security, strengthening internal controls, and ensuring regulatory compliance. By referencing on their study, the banking industry can gain valuable insights into the nuanced relationships between risks and corporate governance, informing their strategies to mitigate risks effectively and enhance overall governance practices. This knowledge can aid in decision-making processes aimed at improving organizational resilience and compliance in a complex and evolving business environment.

In table 6, the computed rho-values ranging from -0.017 to -0.052 indicate a very weak indirect relationship between process efficiency and the sub variables of corporate governance namely cyber security and regulatory compliance while the computed rho-value of 0.047 indicate a very weak direct relationship between process efficiency and internal control in the banking sector. The computed rho-values ranging from 0.009 to 0.039 indicate a very weak direct relationship between banking industry's resource efficiency and the sub variables of corporate governance. The computed rho-value of 0.006 indicate a very weak direct relationship between banking industry's customer service and cyber security while the computed rho-values ranging from -0.005 to -0.037 indicate a very weak indirect relationship between customer service and the sub variables of corporate governance namely internal control and regulatory compliance. There was no statistically significant relationship

between operational efficiency and corporate governance because the obtained p-values were greater than 0.01.

Table 6

Relationship Between Operational Efficiency and Corporate Governance

Variables	rho	p-value	Interpretation
Process Efficiency			
Cyber Security	-0.052	0.314	Not Significant
Internal Control	0.047	0.360	Not Significant
Regulatory Compliance	-0.017	0.735	Not Significant
Resource Efficiency			
Cyber Security	0.023	0.654	Not Significant
Internal Control	0.009	0.861	Not Significant
Regulatory Compliance	0.039	0.448	Not Significant
Customer Service			
Cyber Security	0.006	0.907	Not Significant
Internal Control	-0.037	0.469	Not Significant
Regulatory Compliance	-0.005	0.915	Not Significant

***. Correlation is significant at the 0.01 level*

The computed rho-values indicate very weak relationships between banking industry's operational efficiency (process efficiency, resource efficiency, and customer service) and sub-variables of corporate governance (cyber security, internal control, and regulatory compliance), suggesting minimal impact of operational efficiency on corporate governance. Specifically, process efficiency showed very weak indirect relationships with cyber security and regulatory compliance, and a very weak direct relationship with internal control. Resource efficiency exhibited very weak direct relationships with all sub-variables of corporate governance. Customer service showed a very weak direct relationship with cyber security and very weak indirect relationships with internal control and regulatory compliance. The lack of statistically significant relationships (p-values > 0.01) indicates that these weak associations may be due to random chance rather than real effects. Overall, these findings suggest that operational efficiency has minimal impact on corporate governance, highlighting the need for further research to identify other factors that may more significantly influence corporate governance. Organizations might benefit from focusing on other variables that have a more substantial impact on corporate governance and refining operational practices to emphasize more influential factors.

Stated results support study by Lee (2020) investigates the nuanced relationships between operational efficiency metrics (process efficiency, resource efficiency, and customer service) and key corporate governance sub-variables. The study employs rho-values to quantify these relationships, focusing on both direct and indirect impacts across different dimensions of operational efficiency. The study reveals very weak relationships (rho-values ranging from -0.052 to 0.047) between the banking industry's operational efficiency metrics (process efficiency, resource efficiency, and customer service) and corporate governance sub-variables (cyber security, internal control, and regulatory compliance). Process efficiency shows very weak indirect relationships with cyber security and regulatory compliance, and a very weak direct relationship with internal control. Resource efficiency exhibits very weak direct relationships with all sub-variables of corporate governance. Customer service demonstrates a very weak direct relationship with cyber security and very weak indirect relationships with internal control and regulatory compliance. Lee's findings highlight the absence of statistically significant relationships (p-values > 0.01) between the banking industry's operational efficiency metrics and corporate governance sub-variables.

This suggests that the observed weak associations may not reflect substantial impacts and could potentially be influenced by random chance. Based on these insights, Lee suggests that banks should explore and prioritize other variables that might have more significant impacts on corporate governance outcomes. This includes refining operational practices to emphasize factors that are more influential in enhancing cyber security, strengthening internal controls, and ensuring compliance with regulatory requirements. By referencing Lee's study, banks can gain valuable insights into the complex interplay between operational efficiency and corporate

governance. These insights can inform strategic decisions aimed at optimizing operational practices and governance frameworks to achieve enhanced organizational resilience, efficiency, and compliance in a competitive business environment.

Proposed Resiliency Framework for Financial Service Industry

The proposed resiliency framework for financial service industry was based on the findings of the study. In this undertaking, there were three main variables (Risk Management, Operational Efficiency and Corporate Governance). Each variable has sub-variables. The sub-variable which obtained the lowest mean scores were considered the key results areas. As for risk management, the sub-variable with the lowest mean score was sustainable risk; for operational efficiency, the sub-variable with the lowest mean score was customer service; and for corporate governance, the sub-variable with lowest mean score was cyber security. Since these three sub-variables elicited as the least agreed by the respondents, the researcher designed a resiliency framework aimed to address these areas in risk management, operational efficiency and corporate governance in the financial service industry in China.

Table 7

Proposed Resiliency Framework for Financial Service Industry

Key results area	Objective	Strategies	Responsible Person/s	Time Frame	Success Indicators
Risk Management: Sustainable Risk	To identify, assess, and manage environmental, social, and governance (ESG) risks that could impact the long-term sustainability and performance of banking industry.	**Risk Assessment and Identification**: Conduct comprehensive assessments to identify and evaluate potential sustainable risks. This includes environmental, social, and governance (ESG) factors that could impact the banking industry's sustainability goals. **Integration into Corporate Strategy**: Embed sustainable risk management into the organization's overall corporate strategy. Ensure alignment with business objectives, values, and long-term sustainability targets. **Enhanced Reporting and Transparency**: Implement robust reporting mechanisms to disclose sustainable risks to stakeholders. This fosters transparency and accountability, building trust and credibility.	Chief Sustainability Officer (CSO) Risk Management Team Corporate Governance Committee: Environmental Health and Safety (EHS) Manager: Finance and Accounting Department Legal and Compliance Officer: Human Resources (HR) Manager Operations Managers Communications and Public Relations (PR) Officer	Short-Term (0-1 years): . Medium-Term (1-3 years): Long-Term (3+ years):	Risk Identification and Assessment. Policy and Strategy Development: Implementation and Integration Monitoring and Reporting Stakeholder Engagement Compliance and Legal Requirements Continuous Improvement Organizational Culture and Awareness
Operational Efficiency: Customer Service	To optimize processes and resources to deliver high-quality service that meets or exceeds customer expectations in the banking industry	**Customer-Centric Culture**: Foster a culture within the banking industry that prioritizes customer satisfaction and service excellence. Ensure that all employees understand and embody the importance of delivering exceptional customer service. **Process Optimization**: Streamline customer service processes to eliminate bottlenecks and inefficiencies. Use process mapping and analysis to identify areas for improvement and implement lean principles to enhance workflow efficiency in the banking industry	Customer Service Manager/Head Operations Manager Quality Assurance Team IT and Technology Team Training and Development Specialist Marketing Team Senior Management Leadership	Short-Term Goals (0-6 months) Medium-Term Goals (6-12 months) Long-Term Goals (12+ months) Evaluation and Adjustment (Ongoing)	Response Time First Contact Resolution Rate (FCR): Customer Satisfaction Scores (CSAT) Service Level Agreement (SLA) Compliance Employee Productivity Customer Retention Rate Employee Engagement and Satisfaction Operational Costs Quality Assurance Scores: Feedback and Complaint Trends:

		Training and Development: Invest in continuous training and development programs for customer service teams. Equip them with the skills, knowledge, and tools necessary to handle customer inquiries effectively and efficiently in the banking industry			
Corporate Governance: Cyber Security	To ensure effective oversight, policies, and practices that protect digital assets, data integrity, and operational continuity from cyber threats in the banking industry	Board Oversight and Accountability Robust Policies and Frameworks Employee Awareness and Training	Chief Information Security Officer Chief Technology Officer Board of Directors Audit Committee Chief Risk Officer Legal Counsel Human Resources IT Security Team Business Unit Managers External Consultant and Advisors	Initial Assessment and Strategy Development (0-3 months) Policy and Procedure Development (3-6 months): Implementation and Integration (6-12 months) Monitoring and Continuous Improvement (Ongoing) Reporting and Compliance (Ongoing) Incident Response and Recovery (Ongoing) Review and Update (Annually)	Board and Executive Engagement Comprehensive Cyber Security Policies and Procedure Risk Management Assessment Cybersecurity Awareness Training Incident Response Management Compliance and Regulatory Adherence Performance Metrics and Monitoring Vendor and Third-Party Risk Management Investment in Cybersecurity Resources Business Continuity and Resilience

4. Conclusions and recommendations

There is moderate agreement on the risk management, particularly regarding technology, people, and sustainability risks. There is moderate agreement on the operational efficiency of the company in terms of process, resources and customer service. There is a moderate agreement on the corporate governance exercised in terms of cyber security, internal control and regulatory compliance. Corporate resiliency plan was developed for financial service industry. Banking industry may prioritize the integration of comprehensive risk management frameworks to enhance operational efficiency to mitigate potential threats and streamline processes. Regulatory bodies may develop and enforce policies that encourage financial institutions to adopt proactive risk management and corporate governance practices. Investors and shareholders may advocate for transparency and accountability in corporate governance practices within the final services industry. The financial industry may use the corporate resiliency plan to improve risk management and corporate governance. Future researchers may contribute to explore and validate the findings on the interrelation between risk management, operational efficiency, and corporate governance.

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