



Risk Assessment of Neobank in Indonesia: Case Study of Bank Gembira Indonesia

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ABSTRACT: This research delves into a comprehensive analysis of the risks encountered by Bank Gembira, a notable neobank in Indonesia. Through combining qualitative and quantitative methodologies, this research study identifies and classifies various types of risk, including credit risk, market risk, liquidity risk, and operational risk. In facilitating the prioritization process, the study makes use of Saaty's Analytic Hierarchy Process (AHP) as instrument. The study highlights the importance of understanding customer behavior in mitigating risks for neobanks and recommends further research on risk assessment in the neobanking sector. The analysis emphasizes the critical role of credit risk and operational risk for Bank Gembira as a neobank. Through AHP calculations, credit default and cyberattacks are identified as the highest priority risks, underscoring the need for robust risk treatment plans to address these high-level risks effectively. Recommendations are proposed to address these risks, such as enhancing credit scoring for P2P lending partners, improving cybersecurity measures, collaborating with regulators, tracking technology updates, partnering with e-commerce platforms, offering promotional programs, developing digital talent programs, and attracting MSMEs customers. Further research on risk assessment in the neobanking sector is suggested to enhance risk management practices and ensure sustainable growth for neobanks like Bank Gembira.

KEYWORDS: Analytic Hierarchy Process (AHP), Digital Banking, Neobanking in Indonesia, Risk Management, Risk Assessment

INTRODUCTION

In recent years, technological advancements have revolutionized various aspects of human life, particularly through the widespread digitalization of activities, altering the consumption patterns of goods and services. This shift towards simplicity and accessibility, epitomized by the ubiquitous use of smartphones, has significantly influenced expectations, even in financial services. Banks and financial institutions have responded by integrating digital strategies into their corporate frameworks, driven by the imperative to align with market demands. In Indonesia, this trend has gained momentum over the past few years, with a majority of banks adopting digital strategies, reflecting the mainstream acceptance of digital banking, as evidenced by substantial transaction volumes reported by Bank Indonesia.

The COVID-19 pandemic further accelerated the technological penetration into banking and financial services, necessitating a rapid and extensive digital transformation within the sector. Social distancing measures, branch closures, and shifts in consumer behavior compelled traditional banks to prioritize digital banking services. Consequently, online banking, mobile banking, and non-monetary transactions witnessed a surge in popularity, contributing to the rapid expansion of neobanks, which leverage technology effectively. These neobanks, operating exclusively online without physical branches, represent a significant evolution in banking, facilitated by regulatory frameworks accommodating their operations.

The emergence of neobanks poses both challenges and opportunities, particularly for established institutions like Bank Gembira (the company's true identity is concealed as per requested) in Indonesia. As a subsidiary of a prominent state-owned bank, Bank Gembira seeks to target the gig economy and fintech segments through its transformation into a neobank. However, it faces stiff competition from other fintech firms and rural banks, compounded by low levels of digital finance literacy among Indonesians. Against this backdrop, a comprehensive assessment of the risks associated with the neobanking model becomes imperative. Through methodologies such as the Analytic Hierarchy Process (AHP), the study aims to identify and prioritize risks, providing actionable insights for risk mitigation strategies tailored to the unique challenges of neobanking in Indonesia.

CONCEPTUAL FRAMEWORK

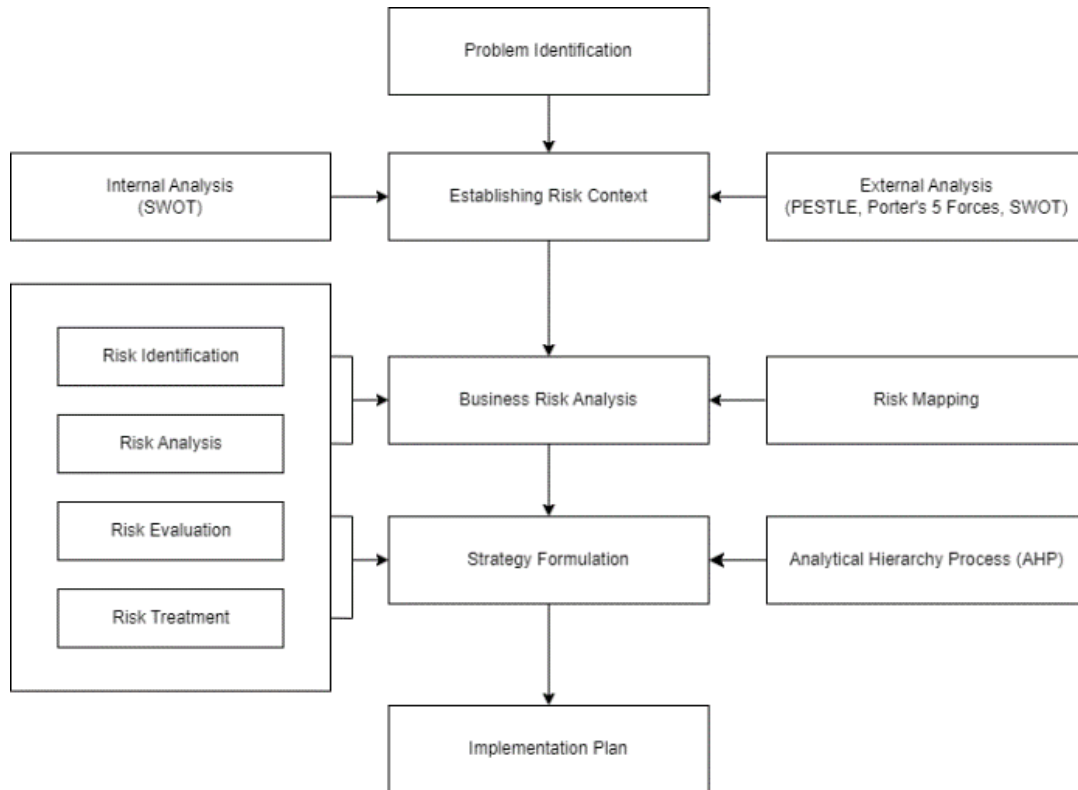


Figure I. Conceptual Framework

Above is the figure depicting the conceptual framework employed in this study. The author attempted to examine the conceptual framework as a tool to formulate strategies suitable in addressing the business issue faced by Bank Gembira. The conceptual framework pertained to the manner in which theories were interconnected with respect to the study.

RESEARCH METHODOLOGY

The research employed a mixed-method approach, gathering both primary and secondary data. Primary data, obtained through interviews and questionnaires conducted under non-disclosure agreements with Bank Gembira, focused on exploring risks directly from the source. One-on-one interviews with the Vice President of Enterprise Risk Management provided insights into the firm's risk landscape, while questionnaires distributed to risk management experts assessed the relative importance and urgency of identified risks. Secondary data from literature, reports, and Bank Gembira's annual report complemented primary findings. External and internal analyses, including PESTEL, SWOT, and Porter's Five Forces, identified risks and opportunities. The Analytic Hierarchy Process (AHP) further assessed risks' impact and importance, aiding in prioritization and mitigation strategy development.

RESULTS

A. Data Analysis

1) Risk Identification

The author managed to identify risks that were to be analyzed in the next step of data analysis using Analytic Hierarchy Process (AHP). All identified risks were categorized based on risk taxonomy as follows:



Table 1. Identified Risks

Risk Category	Risk Sub-Category	Risk ID	Risk Description
Credit Risk	Default Credit	A.1	Debtors and/or P2P lending partners' failure to pay to Bank Gembira as creditors.
Market Risk	Changes in trading book instrument prices	B.1	Fluctuations in financial instrument prices from trading book positions that can affect Bank Gembira's treasury asset income.
	Changes in interest rates	B.2	Changes in interest rates that can have an impact on the pricing of Bank Gembira products, both deposits and loans.
Liquidity Risk	Fulfilment of bank liquidity	C.1	Bank Gembira's inability to obtain sufficient funds to be channelled into lending optimally.
Operational Risk	Cyberattack	D.1	Cyber threats, such as malware, phishing and hacking of user data.
	Unavailable service (Downtime)	D.2	Situations of technical problems or system maintenance that cause the unavailability of Bank Gembira banking services.
	Unprepared digital talent	D.3	Human capital is not ready to support Bank Gembira's digital banking business.
Compliance Risk	Regulatory sanctions	E.1	Imposition of sanctions from relevant regulators in Indonesia due to non-compliance with regulatory provisions
Reputational Risk	Customer complaints	F.1	Complaints submitted by customers to Bank Gembira as a result of problems with the Bank's services.
	Negative reporting in mass media	F.2	The circulation of negative news related to Bank Gembira in the mass media can affect customer trust.
Legal Risk	Lawsuits	G.1	Lawsuits from customers related to credit and non-credit aspects, as well as the protection of customers' personal data.
Strategic Risk	Changes in business environment	H.1	A decline in company performance due to a lack of ability to adapt to changes in the business environment, i.e. regulatory changes, technological developments, and geopolitical changes.
	Competition in services with other banks/Fintechs	H.2	Users are switching from Bank Gembira to use competing digital financial services, due to less competitive services.
	Competition in pricing with other banks/Fintechs	H.3	Users are switching from Bank Gembira to use competing digital financial services, due to less competitive service costs (pricing).



2) Risk Prioritization

To establish the priorities, the subsequent action was determining the weight of each identified risk by calculation. The computation was performed using the Analytic Hierarchy Process (AHP), specifically utilizing the AHP Online System designed by Klaus D. Goepel at Business Performance Management Singapore (BPMSG). The tool employed paired rankings obtained from each responder of the pre-existing questionnaire. The consistency of pairwise comparison utilizing the Analytic Hierarchy Process (AHP) approach is deemed acceptable if the Consistency Ratio (CR) is below 10%. In this study, a global consensus was reached among all respondents, weighing at 69,20% with 7,9% CR.

The identified risks were categorized into two levels of hierarchy, providing more precise rankings based on criteria-level and sub-criteria level risks. At the first level, 8 risks were identified, where respondents prioritized Credit Risk at 25.7%, followed closely by Operational Risk at 25.6%. Liquidity Risk ranked third, with a notable disparity in weight compared to the top two risks. Overall, respondents agreed that Credit Risk and Operational Risk were of utmost importance for Bank Gembira as a neobank. Refer to the table below for the AHP calculation results.

Table 2. Criteria-level Risks

Risk Category	Weight	Rank
Credit Risk	25,70%	1
Operational Risk	25,60%	2
Liquidity Risk	12,90%	3
Strategic Risk	12,60%	4
Compliance Risk	8,60%	5
Reputational Risk	5,70%	6
Market Risk	4,60%	7
Legal Risk	4,30%	8

Upon determining the hierarchy of risks based on criteria, the research proceeded to determine the weight and ranking of each risk at the sub-criteria level. Fourteen risks were identified, and each were weighed by their importance in comparison with the other risk at the same group. The AHP calculation result was as seen on the table below:

Table 3. Sub-criteria level Risks

Risk ID	Risk Criteria	Risk Sub-Criteria	Sub Criteria Weight	Criteria-level rank
A.1	Credit Risk	Default Credit	100,0%	1
B.1	Market Risk	Changes in trading book instrument prices	22,4%	2
B.2		Changes in interest rates	77,6%	1
C.1	Liquidity Risk	Fulfilment of bank liquidity	100,0%	1
D.1	Operational Risk	Cyberattack	62,8%	1
D.2		Unavailable service (Downtime)	23,8%	2
D.3		Unprepared digital talent	13,4%	3
E.1	Compliance Risk	Regulatory sanctions	100,0%	1
F.1	Reputational Risk	Customer complaints	29,1%	2



F.2		Negative reporting in mass media	70,9%	1
G.1	Legal Risk	Lawsuits	100,0%	1
H.1	Strategic Risk	Changes in business environments	37,9%	1
H.2		Competition in services with other banks/fintechs	32,3%	2
H.3		Competition in pricing with other banks/fintechs	29,9%	3

To obtain the final risk rating, one must first determine the global weight of each risk that was detected at the sub-criteria level. The global weight was obtained by performing the following calculation:

$$Global\ Weight = Criteria\ level\ weight \times sub\ criteria\ level\ weight \tag{III.1}$$

With such calculation performed, global weight and rank for all fourteen identified risks were obtained. The result as shown on Table IV.4 below placed the risk of default credit at the greatest priority, followed by cyberattack at second place.

Table 4. Global Weights and Final Risk Rankings

Risk ID	Risk Category	Risk Description	Global Weight	Rank
A.1	Credit Risk	Default Credit	25,7%	1
D.1	Operational Risk	Cyberattack	16,1%	2
C.1	Liquidity Risk	Fulfilment of bank liquidity	12,9%	3
E.1	Compliance Risk	Regulatory sanctions	8,6%	4
D.2	Operational Risk	Unavailable service (Downtime)	6,1%	5
H.1	Strategic Risk	Changes in business environments	4,8%	6
G.1	Legal Risk	Lawsuits	4,3%	7
H.2	Strategic Risk	Competition in services with other banks/fintechs	4,1%	8
F.2	Reputational Risk	Negative reporting in mass media	4,0%	9
H.3	Strategic Risk	Competition in pricing with other banks/fintechs	3,8%	10
B.2	Market Risk	Changes in interest rates	3,6%	11
D.3	Operational Risk	Unprepared digital talent	3,4%	12
F.1	Reputational Risk	Customer complaints	1,7%	13
B.1	Market Risk	Changes in trading book instrument prices	1,0%	14



B. Findings

Both the Criteria and Sub-criteria AHP Calculations, as depicted in Tables IV.2 and IV.4, consistently identified the highest priority risks for Bank Gembira. Default credit, a form of credit risk, ranked first, holding a 25.7% global weight in the AHP calculation. Subsequently, cyberattacks, categorized under operational risk, held a 16.1% global weight in the AHP calculation and ranked at second-highest. The prevalence of default credit risk stemmed from Bank Gembira's lending collaboration with peer-to-peer (P2P) fintech partners, which increased exposure to credit risks beyond those typical in regular lending. This lending scheme, while expanding Bank Gembira's customer base, also magnified the risk of defaults, as observed in a previous incident. Although cyberattacks posed significant potential impact, they had not yet occurred at Bank Gembira, potentially explaining why respondents perceived this risk as slightly lower in priority compared to default credit risk.

The risk of bank liquidity fulfillment earned the third-highest score, representing 12.9% of the global weight, making it the third most important risk. At the fourth highest was the risk of regulatory sanctions, weighing at 8.6%, which was followed at fifth place by yet another operational risk, unavailable service (downtime). This highlights the indication of significant impact of operational risks on Bank Gembira's performance compared to other risks.

IMPLEMENTATION PLAN

This research presents risk treatment approaches as business solutions after conducting AHP calculations to rank the identified risks. Risk treatment entails the process of choosing and executing strategies to alter the impact and probability of risks in accordance with the organization's risk tolerance. Certain steps will be necessary in response to external situations, while others, which are more internal, will require strategies to enhance Bank Gembira's capabilities as a neobank. It should be noted that it is important to prioritize the mitigation of risks with the highest urgency in risk treatment. Hence, the author exclusively provided risk mitigation recommendations for the top five risks with the highest priority, as the remaining risks have comparatively lower priority, accounting for less than 5%. Several recommendations that involved using both external and internal risk mitigation strategies are as follows:

1) Risk of Default Credit (A.1)

Bank Gembira can reduce default risks by improving its credit assessment procedure and periodically evaluating the performance its P2P-lending fintech partners. The system should have the ability to modify the distribution of funds depending on the performance of partners and may also impose duties on partners to provide collateral, hence the importance of ensuring that risk mitigation measures are included in partnership agreements.

2) Risk of Cyberattacks (D.1)

This risk requires Bank Gembira to consistently enhance its understanding of cybersecurity and its framework in order to protect itself from cyber threats. Engaging with regulators can facilitate the development of a comprehensive financial cybersecurity strategy, drawing lessons from previous crises such as the one encountered by Bank Syariah Indonesia.

3) Risk of Fulfilment of Liquidity (C.1)

The reduction of liquidity risk can be achieved by diversifying funding sources and attracting clients from micro, small, and medium enterprises (MSMEs). Implementing focused promotional strategies that cater to the specific demands of Micro, Small, and Medium Enterprises (MSMEs) can effectively garner savings from this particular market segment. Although small in scale, MSMEs segment in Indonesia has such large potential that basically it runs more than half of the country's economy, hence its importance in reducing this particular risk. This approach can also use on the existing customer base of the parent company to drive expansion.

4) Risk of Regulatory Sanctions (E.1)

In order to guarantee the safety of customers and adhere to Indonesian regulations, it is imperative for Bank Gembira to allocate resources towards recruiting highly skilled personnel who can develop a secure digital infrastructure and has legal experience in the field of digital finance. These are the forms of complying to the regulations binding neobanks in Indonesia, namely Indonesian Financial Service Authority Regulation (POJK) No. 12/POJK.03/2021 on Commercial Bank, Undang-Undang (Act) No. 27/2022 on Personal Data Protection, and Undang-Undang (Act) No. 11/2008 on Information and Electronic Transaction.



5) Risk of Unavailable Service (Downtime) (D.1)

In order to reduce the risk, firstly, Bank Gembira should allocate resources to acquire redundant systems and backup servers in order to guarantee uninterrupted availability. This includes duplicate internet connections, backup power supplies, and failover systems to transition smoothly in the event of a loss. In addition, proactive measures such as scheduling frequent maintenance windows for updates and patches, employing load balancing techniques, and ensuring scalability to effectively manage growing demand while preserving performance should be implemented. Additionally, it is crucial to create an all-encompassing strategy for recovering from disasters, deploy technologies that can monitor and notify of any issues, offer training to employees, and establish effective communication channels to assist customers during periods of outage. These actions will mitigate service disruption and provide ongoing financial services for consumers.

CONCLUSION

The research findings highlight several key conclusions. *Firstly*, neobanks in Indonesia encounter risks that are similar to traditional banks, as identified through risk assessment. The risks were classified and ranked according to their severity, with default credit risk being the most significant, followed by operational risks such as cyberattacks and liquidity issues. The enduring presence of default credit risk underscores its importance in both digital and traditional banking frameworks. Cyberattack, which fell into the operational risks category, are an issue of concern for neobanks that is a unique risk distinguishing them apart from traditional banks.

Secondly, the risk of data breaches increases the chances of facing lawsuits, emphasizing the significance of adhering to legal requirements, particularly those related to safeguarding personal data.

Thirdly, by comprehending how people behave when consuming online, neobanks can reduce the chances of encountering liquidity and strategic risks. This understanding also provides a mechanism for neobanks to grow their customer base and improve their management of available funds.

Based on the research findings, the author suggested that Bank Gembira should promptly implement risk treatment techniques, utilizing its capabilities. It is advisable to gradually pursue long-term goals that involve working together with external stakeholders in order to achieve continuous improvement.

As for further studies, the author suggested that future research should investigate risk assessments in different neobanks operating in Indonesia in order to comprehend the differences in risk exposure. Comparative assessments will provide insight into whether neobanks experience similar risks and assist in formulating complete risk management strategies.

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Cite this Article: Ghina Cecilia, Oktofa Yudha Sudrajad (2024). Risk Assessment of Neobank in Indonesia: Case Study of Bank Gembira Indonesia. International Journal of Current Science Research and Review, 7(5), 2801-2808