

# Enterprise Risk Management and Bank Performance: A Study of the Indonesian Banking Industry

*by Lauw Tjun Tjun, Yuswar Z. Basri, Yvonne Augustine*

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# Enterprise Risk Management and Bank Performance: A Study of the Indonesian Banking Industry

Lauw Tjun Tjun<sup>1</sup>, Yuswar Z. Basri<sup>2</sup>, Yvonne Augustine<sup>3</sup>

<sup>1</sup> Doctoral Student in Economics and Business Faculty, Trisakti University, Jakarta, Indonesia; Accounting department, Business Faculty, Maranatha Christian University, Bandung, Indonesia Email: lauw222021704005@std.trisakti.ac.id

<sup>2</sup> Economics and Business Faculty, Trisakti University, Jakarta, Indonesia. Email: yuswarzainulbasri@gmail.com

<sup>3</sup> Economics and Business Faculty, Trisakti University, Jakarta, Indonesia. Email: yvonneags57@gmail.com

Correspondence: Lauw Tjun Tjun, Trisakti University, Jakarta, Indonesia, Jl. Kyai Tapa, Grogol, West Jakarta 11440, Email: lauw222021704005@std.trisakti.ac.id

## Abstract

This investigation wants to prove the impact of enterprise risk management on bank performance. The population comes from employees with a working tenure above three years and working in specific departments in the bank in Indonesia. For the unknown population, we utilize snowball sampling based on the excellent relationship with the limited size of the recognized employees. Fortunately, we can obtain 198 employees as the samples; hence, this study employs the structural equation model with the covariance basis. Moreover, to estimate the path coefficient and its properties and verify the virtuousness of the fit model, the analysis moment structures (AMOS) program is used. Finally, this study concludes that enterprise risk management affects bank performance positively. Finally, this study implies that through the correct risk management, managers can take the opportunity suitable for their strategy and identify the potential risk to be evaluated by the standard process to make the decision correctly.

**Keywords:** Banks, SEM Based on Covariance, Risk Management, Performance

## 1. Introduction

Banking is one of the sectors in Indonesia indirectly influenced by the COVID-19 pandemic in 2020. During this pandemic, numerous companies in real sectors did not operate well; consequently, they could not pay for their interests and principles to the banks. This situation increased non-performing loans in December 2019 and 2020, and September 2021 by 2.53%, 3.06%, and 3.22% (see Figure 1). If this NPL movement is not managed well, it will harm bank performance. Therefore, its accomplishment needs to be evaluated by a holistic model to sustain the bank (Wu, Tzeng, & Chen, 2009).

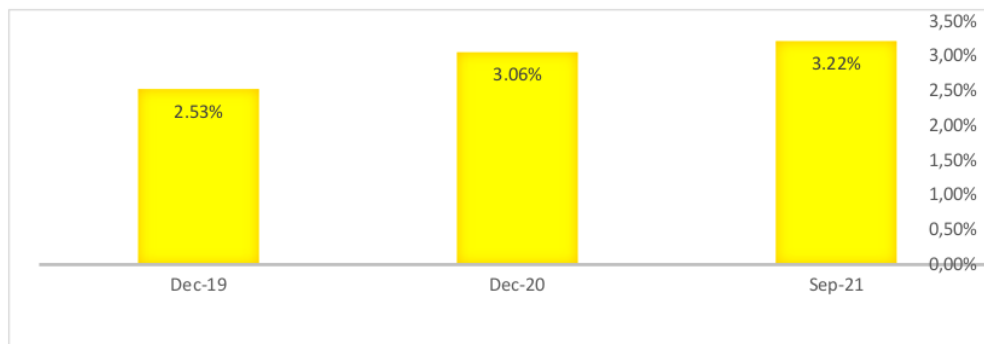


Figure 1: Non-Performing Loans in December 2019 and 2020, and September 2021

One of the assessment methods of performance used in this research is the balanced scorecard (BSC) (Kaplan & Norton, 1992), which can also be applied to banks [see Davis and Albright (2004), Kim and Davidson (2004), Balkovskaya and Filneva (2016), Wu et al. (2019)]. According to Davis and Albright (2004) and Lawrie and Cobbold (2004), BSC is an evaluating tool for extensive and universal performance to plan and control an organization to achieve its goals. Meanwhile, Gershun and Nefedeva (2005) define BSC as a strategic and working governance device to connect its objectives with internal business processes and employee activities. Besides, the BSC functions to monitor strategy execution. Moreover, Kaplan and Norton (1992) explain that BSC divides performance into four perspectives: (1) finance, (2) consumers, (3) internal business process, and (4) learning and growth.

One of the bank performance-related factors is risk management. This risk has to be organized by banks in their governance, as required by the Indonesian Financial Service Authority Regulation No.18/POJK.03/2016 for commercial banks (Olivia et al., 2020) and No. 13/POJK.03/2015 for rural banks (Tjahjono et al., 2022). Furthermore, to measure it, some studies utilize the indicators referring to ISO 31000:2018 (Tjahjono et al., 2022) and the Committee of Sponsoring Organizations of the Treadway Commission (COSO)-enterprise risk management (ERM) (Candy, 2021).

This research uses the COSO-ERM framework (2017) to measure banking risk. This decision exists because the COSO-ERM formulated in 2004 is the primary source for developing ISO31000 clauses for the 2009 first version. Because of the dynamic situations, the COSO-ERM framework has also changed: the latest is version 2017, which adopts five features: (1) governance and culture, (2) strategy and goal setting, (3) risks-related achievement, (4) review and revision, and (5) information, idea exchange, and report.

Additionally, related to this issue, many studies investigate how ERM is associated with its attainment, especially for the non-banking industry (Sofia & Augustine, 2019; González, Santomil, & Herrera, 2020), small-medium companies (Suttipun, Siripong, Sattayarak, Wichianrak, & Limroscharoen, 2018), financial institutions (Rasid, Isa, & Ismail, 2004), and the banking and financial industries (Olayinka, Emoarehi, Jonah, Ame, 2017; Soliman & Adam, 2017; Alawattagama, 2018; Candy, 2021; Sleimi, 2020), all companies, both in the financial and non-financial industry (Damayanti & Augustine, 2019). However, their result is unsatisfying.

- Investigating the firms in the consumer goods industry, Sofia and Augustine (2019) cannot find any association between ERM and performance. Similarly, after researching non-financial firms, González et al. (2000) display no relationship. Conversely, the study by Suttipun et al. (2018) exhibits that ERM positively the company achievement measured by the balanced scorecard indicators.
- Through the research utilizing banks and financial firms, Alawattagama (2018) show no association between ERM and performance. On the other hand, Soliman and Adam (2017) confirm a positive impact of ERM on bank performance. Similarly, this positive indication is affirmed by Olayinka et al. (2017) after studying the financial firms in Nigeria.
- After utilizing two types of bank performance, Rasid et al. (2014) declare ERM affects the non-financial achievement but does not influence the financial achievement. Meanwhile, Candy (2021) proves that ERM

can positively control both. Unlike Rasid et al. (2014) and Candy (2021), Al-Nimer, Abbadi, Al-Omush, and Ahmad (2021) apply three measures of performance and get two positive relationships, i.e., between (1) ERM and the non-financial (2) ERM and the environmental. Unfortunately, they find no relationship between ERM and the financial.

- By utilizing the banking business performance, Sleimi (2020) confirms that risk management practice positively affects it. Similarly, this positive sign is approved by Damayanti & Augustine (2019) in the financial and non-financial industries.

This study intends to examine this relationship again in the Indonesian banking industry by considering this contrary evidence. Unlike the studies using secondary data (Rasid et al., 2014; Soliman & Adam, 2017; Alawattagama, 2018; Sofia & Augustine, 2019; González et al., 2020; Candy, 2021), this study investigates this association by surveying the perception of workforces in the banks in Indonesia.

## 2. Literature Review and Hypothesis Development

A stakeholder theory explains that the group interested in the company is the government, Greenpeace, customers, the local communities, stockholders, and creditors. As the company owners, shareholders will pressure the managers to work well (Whellen & Hunger, 2012) by proxy fight, leading to getting replaced and fired (Gitman & Zutter, 2012). According to Gitman and Zutter (2012), if managers achieve their demands, they will still be in their position.

In the banking industry, managers can organize the risk to create the banks with superiority, competitiveness, and sustainability (Suttipun et al., 2018). As a result, the banks can increase their performance financially (see Candy, 2021) and non-financially (see Rasid et al., 2014; Candy, 2021). After using Jakarta's non-financial and financial firms, Damayanti and Augustine's (2019) study informs a positive relationship between ERM and firm performance. Moreover, Sleimi (2020) declares that risk management practice positively influences Jordanian bank performance. With the value at risk (VAR) to measure ERM, the study of Olayinka et al. (2017) shows that ERM positively affects the accomplishment of financial companies in Nigeria. Also, in their research, Soliman and Adam (2017) confirm a positive influence of ERM on the Nigerian bank attainment, measured by the return on assets and the stock price, respectively. Through the investigation of the financial industry in Jordan, Al-Nimer et al. (2021) document a positive impact of ERM on non-financial and environmental attainment in the Jordanian financial companies. Based on these facts, we display the first hypothesis:

H<sub>1</sub>: The enterprise risk management affects the bank's performance positively.

## 3. RESEARCH METHOD

### 3.1. Research Variable

In this investigation, two latent variables exist, i.e., bank performance and enterprise risk management, acting as the dependent and independent variables, respectively. Moreover, we measure the bank performance based on the indicators of the balanced scorecard dimensions as Information Systems Audit and Control Association (ISACA) (2012), Upadhaya, Munir, and Blount (2014), Rostami, Goudarzi, & Zaj (2015), Abofaied (2017), and Gupta et al. (2018) state, where the description is in Table 1.

Table 1: The dimensions of the balanced scorecard and their indicators to measure bank performance

Dimensions	Indicators	Source
Financial perspective	I work at a bank that can manage the equity well to produce profits (FP1).	Abofaied (2017)
	I work in a bank that can manage the assets well to produce profits (FP2).	Gupta et al. (2018)
	I work in a bank that can manage capital adequacy well to cover the credit risk (FP3).	

Table 1: The dimensions of the balanced scorecard and their indicators to measure bank performance

Dimensions	Indicators	Source
	I work in a bank that can handle non-performing loans (FP4)	Rostami et al. (2015)
	I work in a bank that can meet the short-term debt already in maturity (FP5).	Abofaied (2017)
Customer perspective	The loyalty of depositors is the primary focus of the bank where I work (CP1).	Rostami et al. (2015)
	The bank where I work focuses on satisfying the depositor (CP2).	Abofaied (2017)
	The growth of depositors becomes the bank's attention where I work (CP3).	
	The bank I work for can quickly handle customer complaints (CP4).	Gupta et al. (2018)
Internal business process perspective	The bank where I work develops products and services as one form of innovation (IBPP1)	Abofaied (2017)
	The bank attempts to elevate quality-based products and services (IBPP2).	
	The bank where I work can keep its data, information, and business process (IBPP3).	ISACA (2012)
	The bank where I work can protect the identity of the depositors (IBPP4)	
Learning and growth perspective	The bank increases skill and competency in information technology (LGP1).	Abofaied (2017)
	Because of technology usage, the bank where I work can increase employee productivity (LGP2).	
	Because of technology applications, the bank can decrease employee turnover (LGP3).	
	Based on my experience, the employees never complained to the bank (LGP4).	Upadhaya et al. (2014)

Next, we measure enterprise risk management based on the indicators derived from the Committee of Sponsoring Organizations of the Treadway Commission (COSO) (2017) in Table 2.

Table 2: The dimensions of the enterprise risk management and their indicators

Dimensions	Indicators
Bank governance and culture	The bank I work for has a board monitoring and managing risk (BGC1).
	The bank I work for sets the organizational structure with a clear job description and responsibility (BGC2).
	The bank I work for has a working culture suitable for the objective (BGC3).
	The bank I work for commits to principal shared value (BGC4).
	The bank I work for can recruit, develop, and keep employees with excellent abilities and contributions (BGC5).
Strategy and goal setting	The bank where I work can analyze the business environment to achieve its goals (SGS1)
	The bank where I work has a system to receive the risk (SGS2)
	The bank where I work can identify and evaluate the alternative strategies to attain its goals (SGS3)
	The bank where I work can formulate business goals by considering the available risks (SGS4)
Risk-related to performance	The bank where I work can identify risks affecting performance (RRP1).
	The bank where I work can minimize risks (RRP2).
	The bank where I work can set several steps to reduce risks (RRP3).
	The bank where I work can respond to the risk becoming the priority (RRP4).



Table 2: The dimensions of the enterprise risk management and their indicators

Dimensions	Indicators
	The bank where I work can develop a system for monitoring the risk (RRP5).
Review and improvement	The bank where I work can observe and measure substantial changes in risk that must be anticipated immediately (RI1).
	The bank where I work can review performance and its risks to implement strategies to achieve goals (RI2).
	The bank where I work can improve the risk management system (RI3).
Information, communication, and reporting	The bank where I work can utilize and develop technology and information systems (ICR1)
	The bank where I work can intensify the utilization of communication channels (ICR2)
	The bank where I work can improve the reporting on performance, risk, and culture at all levels (ICR3)

Source: Adopted from COSO (2017)

### 3.2. Population and Sampling Method

The population in this study comes from the employees working at the banks in Indonesia. They must have a working tenure above three years in various departments, such as (1) finance, (2) information technology, (3) digital, (4) human resources, (5) research and development, (6) risk management, (7) strategy, (8) marketing, (9) operation, (10) credit analysis, (11) legal banking.

Because their number is unidentified, we utilize snowball sampling based on the excellent relationship with some recognized employees. Furthermore, they are asked to forward this survey to their colleagues in the same and different workplaces. Therefore, more respondents can be accumulated (Pandjaitan, MS, and Hadianto, 2021). Finally, this questionnaire is filled out by 198 employees; consequently, they become the sample for this study.

### 3.3. Data Collection

We employ the survey to obtain the data from the samples. This survey involves questionnaire distribution (Hartono, 2012). Additionally, the respondents' answer is measured by the six-Likert scales, ranging between one and six, reflecting extreme disagreement and agreement, as Sugiyono (2010) exhibits. Because the variable measurement consists of dimensions and indicators (see Tables 1 and 2), their loading factor should be available. Therefore, the validity is examined by comparing the loading factor with 0.5. If it is above 0.5, the answer will be valid, and vice versa. Moreover, we apply the Cronbach Alpha analysis to examine the reliability. A reliable response exists when the Cronbach Alpha exceeds 0.7 (Ghozali, 2011).

### 3.4. Method to analyze the data

This study successfully receives responses from 198 employees. According to Ghozali (2008), the sample size of almost 200 respondents and the presence of latent variables need the structural equation model (SEM) with a covariance basis to investigate data. To display the intended model, we formulate the first equation as follows.

$$BP_i = \beta_1.ERM_i + \zeta_i \quad (\text{Equation 1})$$

Before examining the hypothesis in this investigation ( $\beta_1 > 0$ ), this SEM needs to be evaluated based on the goodness of fit measurements, such as the Chi-Square divided by degree of freedom (Ghozali, 2014), parsimony ratio, the parsimony normed, and comparative fit indexes with the specific cut-off value (Latan, 2013).

## 4. Result and Discussion

### 4.1. Results

#### 4.1.1. Respondent profiles

This survey was conducted from December 2021 to January 2022. It resulted in the employee profile, as shown in Table 3, classified by gender, the city, and the bank's name where they work. Based on gender, females dominantly participated in this survey (59.09%). Denoting city, the employees from Bandung take the top position (35.86%), followed by Jakarta (25.25%) and Surabaya (11.62%). The bottommost is 0.51% from Bekasi, Cirebon, Depok, Jombang, Malang, Pacitan, Pangkalpinang, Rembang, Tebing Tinggi, Wonogiri, and Yogyakarta. Referring to the bank name, the employees from Bank Central Asia take the highest domination (35.86%), whereas the employees from Bank Capital Indonesia, Bank Commonwealth, Bank CTBC Indonesia, Bank DBS Indonesia, Bank Fama Internasional, Bank Ina Perdana, Bank Index Selindo, Bank Maspion Indonesia, Bank Mayapada, BPD Banten, Bank QNB Indonesia, Bank Sampoerna, BPR Amanat Kesejahteraan Indonesia, Bank Tabungan Pembangunan Negara, Bank Keb Hana Indonesia, and Bank KB Bukopin take the lowest participation: 0.51%.

Table 3: Employee Profile

Feature	Sub-Feature	Total	Percentage
Gender	Male	81	40.91%
	Female	117	59.09%
The city where the respondents work	Bandung	71	35.86%
	Bekasi	1	0.51%
	Bogor	7	3.54%
	Cilegon	2	1.01%
	Cirebon	1	0.51%
	Depok	1	0.51%
	Jakarta	50	25.25%
	Jombang	1	0.51%
	Kupang	12	6.06%
	Malang	1	0.51%
	Medan	3	1.52%
	Pacitan	1	0.51%
	Palangkaraya	2	1.01%
	Pangkalpinang	1	0.51%
	Purwokerto	4	2.02%
	Rembang	1	0.51%
	Semarang	3	1.52%
	Surakarta	6	3.03%
	Surabaya	23	11.62%
	Tangerang	4	1.52%
	Tebing Tinggi	1	0.51%
Wonogiri	1	0.51%	
Yogyakarta	1	0.51%	
The name of the bank where the respondents work	Bank Bisnis Internasional	2	1.01%
	Bank Capital Indonesia	1	0.51%
	Bank Central Asia	71	35.86%
	Bank Commonwealth	1	0.51%
	Bank CTBC Indonesia	1	0.51%
	Bank Danamon Indonesia	12	6.06%
	Bank DBS Indonesia	1	0.51%

Table 3: Employee Profile

Feature	Sub-Feature	Total	Percentage
	Bank Fama Internasional	1	0.51%
	Bank Ina Perdana	1	0.51%
	Bank Index Selindo	1	0.51%
	BPD Jabar & Banten	4	2.02%
	Bank Kalteng	2	1.01%
	Bank Mandiri (Persero)	3	1.52%
	Bank Maspion Indonesia	1	0.51%
	Bank Mayapada	1	0.51%
	Bank Mayora	2	1.01%
	Bank Mega	2	1.01%
	Bank Nationalnobu	7	3.54%
	Bank Negara Indonesia (Persero)	8	4.04%
	Bank Pan Indonesia	11	5.56%
	BPD Banten	1	0.51%
	BPD NTT	11	5.56%
	Bank Permata	4	2.02%
	Bank QNB Indonesia	1	0.51%
	Bank Rakyat Indonesia (Persero)	4	2.02%
	Bank Sampoerna	1	0.51%
	Bank Sinarmas	3	1.52%
	Bank Syariah Indonesia	3	1.52%
	Bank Tabungan Negara (Persero)	5	3.03%
	Bank UOB Indonesia	6	1.01%
	BPR Amanat Kesejahteraan Indonesia	1	0.51%
	Bank Tabungan Pembangunan Negara	1	0.51%
	Bank CIMB Niaga	6	3.03%
	Bank Keb Hana Indonesia	1	0.51%
	Bank KB Bukopin	1	0.51%
	Bank Maybank Indonesia	9	4.55%
	Bank OCBC NISP	7	3.54%

Source: Researcher Database

#### 4.1.2. The validity and reliability results of the answer of the employees to the indicators of bank performance and enterprise risk management

In the beginning step, we find the invalid response to indicator LGP3, reflected by the loading factor 0.391 by the confirmatory factor analysis (CFA). Because of this situation, this indicator is removed. After that, we rerun the CFA, and the final result can be seen in Table 4:

- The loading factor of FP: FP1-FP5, CP: CP1-CP4, IBPP: IBPP1-IBPP4, and LGP: LGP1, LGP2, LGP4 is above 0.5: 0.923, 0.923, 0.916, 0.871, 0.770, 0.851, 0.938, 0.931, 0.879, 0.908, 0.920, 0.946, 0.946, 0.804, 0.814, and 0.571. Thus, the answer to all indicators is valid. Besides, the loading factor of all dimensions are higher than 0.5: 0.899 for FP, 0.976 for CP, 0.950 for IBPP, 0.880 for LGP. It means that all FP, CP, IBPP, and LGP can reflect bank performance.
- The Cronbach Alpha for valid indicators is also higher than 0.7: 0.943 for FP, 0.943 for CP, 0.962 for IBPP, and 0.761 for LGP. This situation means all FP, CP, IBPP, and LGP items are consistent.



Table 4: The validity and reliability test result of the answers to indicators of bank performance measured by the balanced scorecard

Indicators	Loading factor for indicators		Loading factor for dimension		Cronbach Alpha for valid indicators	
	Value	Meaning	Value	Meaning	Value	Meaning
FP1	0.923	The answer to all indicators for the BGC is valid because all the LF exceeds 0.5.	0.899	The FP dimension is valid because the LF exceeds 0.5.	0.943	The answer to all items of FP is consistent because the CA exceeds 0.7.
FP2	0.923					
FP3	0.916					
FP4	0.871					
FP5	0.770					
CP1	0.851	The answer to all indicators for the CP is valid because all the LF exceeds 0.5.	0.976	The CP dimension is valid because the LF exceeds 0.5.	0.943	The answer to all items of CP is consistent because the CA exceeds 0.7.
CP2	0.938					
CP3	0.931					
CP4	0.879					
IBPP1	0.908	The answer to all indicators for the IBPP is valid because all the LF exceeds 0.5.	0.950	The IBPP dimension is valid because the LF exceeds 0.5.	0.962	The answer to all items of IBPP is consistent because the CA exceeds 0.7.
IBPP2	0.920					
IBPP3	0.946					
IBPP4	0.946					
LGP1	0.804	The answer to all indicators for the LGP is valid because all the LF exceeds 0.5.	0.880	The LGP dimension is valid because the LF exceeds 0.5.	0.761	The answer to all items of LGP is consistent because the CA exceeds 0.7.
LGP2	0.814					
LGP4	0.571					

Table 5 presents the validity and reliability results of the answers to indicators of enterprise risk management:

- The loading factor of BGC: BGC1-BGC5, SGS: SGS1 -SGS5, RRP: RRP1-RRP5, RI: RI1-RI3, and ICR: ICR1-ICR3 is above 0.5: 0.741, 0.872, 0.849, 0.905, 0.698, 0.808, 0.702, 0.890, 0.889, 0.859, 0.880, 0.875, 0.869, 0.864, 0.880, 0.893, 0.890, 0.848, 0.878, 0.931. Thus, the answer to all indicators is valid. Besides, the loading factor of all dimensions are higher than 0.5: 0.941 for BG, 0.957 for SGS, 0.991 for RRP, 0.979 for RI, and 0.963 for ICR. It means that all BGC, SGS, RRP, RI and ICR can reflect ERM.
- The Cronbach Alpha for valid indicators is also higher than 0.7: 0.900 for BGC, 0.890 for SGS, 0.938 for RRP, 0.918 for RI, and 0.915 for ICR. This situation means that all BGC, SGS, RRP, RI, and ICR items are consistent.

Table 5: The validity and reliability test result of the answers to indicators of enterprise risk management

Indicators	Loading factor for indicators		Loading factor for dimension		Cronbach Alpha for valid indicators	
	Value	Meaning	Value	Meaning	Value	Meaning
BGC1	0.741	The answer to all indicators for BGC is valid because the LF exceeds 0.5.	0.941	The BGC dimension is valid because the LF exceeds 0.5.	0.900	The answer to all items of BGC is consistent because the CA exceeds 0.7.
BGC2	0.872					
BGC3	0.849					
BGC4	0.905					
BGC5	0.698					
SGS1	0.808	The answer to all indicators for SGS is valid because the LF exceeds 0.5.	0.957	The SGS dimension is valid because the LF exceeds 0.5.	0.890	The answer to all items of SGS is consistent because the CA exceeds 0.7.
SGS2	0.702					
SGS3	0.890					
SGS4	0.889					
RRP1	0.859	The answer to all indicators for RRP is valid because the LF exceeds 0.5.	0.991	The RRP dimension is valid because the LF exceeds 0.5.	0.938	The answer to all items of RRP is consistent because the CA exceeds 0.7.
RRP2	0.880					
RRP3	0.875					
RRP4	0.869					
RRP5	0.864					
RI1	0.880	The answer to all indicators for RI is valid because the LF exceeds 0.5.	0.979	The RI dimension is valid because the LF exceeds 0.5.	0.918	The answer to all items of RI is consistent because the CA exceeds 0.7.
RI2	0.893					
RI3	0.890					

Table 5: The validity and reliability test result of the answers to indicators of enterprise risk management

Indicators	Loading factor for indicators		Loading factor for dimension		Cronbach Alpha for valid indicators	
	Value	Meaning	Value	Meaning	Value	Meaning
ICR1	0.848	The answer to all indicators for ICR is valid because the LF exceeds 0.5.	0.963	The ICR dimension is valid because the LF exceeds 0.5.	0.915	The answer to all items of ICR is consistent because the CA exceeds 0.7.
ICR2	0.878					
ICR3	0.931					

#### 4.1.3. The detection result of the goodness of the model fits

Table 6 exhibits some measures of the goodness of model fits, like Chi-Square divided by the degree of freedom (Chi-Square/DF) of 2.587, P-RATIO of 0.927, PNFI of 0.779, and PCFI of 0.830. Related to the first measure, because the Chi-Square/DF lies between 2 and 5, the data suits the model. Also, the empirical evidence still matches the model because the value associated with the second, third, and fourth measures exceeds 0.6.

Table 6: The goodness of the model fits

Measures	Value	Expected value	Interpretation
Chi-Square/DF	2.587	Between 2 and 5 (Ghozali, 2014)	Data are suitable for model.
Parsimony ratio (PRATIO)	0.927	More significant than 0.6 (Latan, 2013)	
Parsimony normed fit index (PNFI)	0.779	More significant than 0.6 (Latan, 2013)	
Parsimony comparative fit index (PCFI)	0.830	More significant than 0.6 (Latan, 2013)	

#### 4.1.4. The estimation result of the path coefficient model

After getting the confidence that the data utilized match the model, the next step is the estimation result of the path coefficient and its related statistical features, as seen in Table 7. In this table, the unstandardized coefficient is positive with the probability of 0.000. It also means the first hypothesis is not refused. Thus, enterprise risk management positively affects bank performance.

Table 7: The estimation result of the path coefficient

Path direction	Unstandardized Path Coefficient	Standard error of estimation	Critical ratio	Probability
ERM → BP	$\beta_1 = 1.170$	0.109	10.694	***

#### 4.2. Discussion

The test result of the first hypothesis depicts that enterprise risk management positively affects bank performance. This condition happens because of the stakeholders supporting the bank to survive. The primary actors are the controlling shareholders and top managers, and they have to override their self-interest and focus on serving society to borrow and save funds. According to Malik, Zaman, and Buckby (2020), the precise application of risk management helps the managers to capture the opportunities matching their strategic goals and identify potential risks to be evaluated through the standard process to make the correct decision. Therefore, this research supports the work of Suttipun et al. (2018), Damayanti and Augustine (2019), Sleimi (2020), Olayinka et al. (2017), Soliman and Adam (2017), as well as Al-Nimer et al. (2021). With this positive impact of ERM on bank performance, this study suggests that banks should focus on the governance and culture supporting the attainment, the strategy and goal settings, the review of the performance-based risk, the information, communication, and report related to sustainable risk management.

## 5. Conclusion

This study intends to test and analyze the influence of enterprise risk management on bank attainment based on the perspective of workforces in Indonesia. Furthermore, this study effectively proves the positive impact by employing the survey from December 2021 to January 2022 and 198 employees as the samples taken by the snowball sampling technique. Practically, this study demonstrates through the correct risk management, managers can take the opportunity suitable for their strategy and identify the potential risk to be evaluated by the standard process to make the decision correctly.

Although ERM positively affects bank performance, this investigation faces several limitations. Firstly, this investigation only uses one determinant of bank performance. This circumstance opens an opportunity for the subsequent scholars to add several factors, such as human capital, business innovation, bank size, and management accounting system. Secondly, because of the limited time and access, this study does not cover the bank employees from the eastern areas of Indonesia, such as Papua, West Papua, and Maluku islands. Based on this issue, the subsequent researchers can seek the employees from these areas to be the respondents in their survey.

## References

- Abofaied, A. (2017). Evaluation of bank performance using the balanced scorecard: Practical study in Libyan environment. *International Journal of Business and Management*, 5(1), 1-14. <https://doi.org/10.20472/bm.2017.5.1.001>
- Al-Nimer, M., Abbadi, S., Al-Omush, A., & Ahmad, H. (2021). Risk management practices and firm performance with a mediating role of business model innovation: Observations from Jordan. *Journal of Risk and Financial Management*, 14, 113. <https://doi.org/10.3390/jrfm14030113>
- Balkovskaya, D., & Filneva, L. (2016). The use of the balanced scorecard in the bank's strategic management. *International Journal of Business Excellence*, 9(1), 48-67. <http://dx.doi.org/10.1504/IJBEX.2016.073375>
- Candy, C. (2021). Best practice of enterprise risk management: the impact on rurals' bank performance. *International Journal of Economics, Business, and Accounting Research*, 5(2), 231-237. <http://dx.doi.org/10.29040/ijebאר.v5i2.2512>
- Committee of Sponsoring Organizations of the Treadway Commission (2017). *Enterprise Risk Management: Integrating with strategy and performance*. <https://www.coso.org/Documents/2017-COSO-ERM-Integrating-with-Strategy-and-Performance-Executive-Summary.pdf>
- Davis, S., & Albright, T. (2004). An investigation of the effect of balanced scorecard implementation on financial performance. *Management Accounting Research*, 15(2), 135-153. <https://doi.org/10.1016/j.mar.2003.11.001>
- Damayanti, A., & Augustine, Y. (2019). The effect of management accounting systems and enterprise risk management on organizational performance with a competitive advantage as an intervening variable. *European Journal of Business and Management*, 11(12), 42-53. <https://doi.org/10.7176/EJBM/11-12-07>
- Gershun, A. M., & Nefedeva, U. S. (2005). *Development of A Balanced Scorecard*. Moscow: Olimp-Biznes.
- Ghozali, I. (2011). *Multivariate Analysis with SPSS Program*. Semarang: Badan Penerbit Universitas Diponegoro.
- Ghozali, I. (2014). *Structural Equation Model: Concepts and Their Application by AMOS 22.0*. Semarang: Badan Penerbit Universitas Diponegoro.
- Gitman, L. J. & Zutter, C. J. (2012). *Principles of Managerial Finance* (14 eds.). Harlow: Pearson Education Limited.
- González, L. O., Santomil, P. D., & Herrera, A. T. (2020). The effect of enterprise risk management on the risk and the performance of Spanish listed companies. *European Research on Management and Business Economics*, 26(3), 111-120. <https://doi.org/10.1016/j.iedeen.2020.08.002>
- Hartono, J. (2012). *Business Research Methodology: Misunderstanding and Experiences* (5 eds). Yogyakarta: BPF-UGM.
- Information Systems Audit and Control Association (2012). *A Business Framework for The Governance and Management of Enterprise IT in Trust and Partnership*. <http://linkd.in/ISACAOOfficial>
- Kaplan, R. S., & Norton, D. P. (1992). The balanced scorecard – measures that drive performance, *Harvard Business Review*, 70(1), 71-79. <https://hbr.org/1992/01/the-balanced-scorecard-measures-that-drive-performance-2>
- Kaplan, R.S., & Norton, D. (2004). *Strategy maps: Converting intangible assets into tangible outcomes*. Boston: Harvard Business School Press.
- Kaplan, R.S., & Norton, D. P. (2005). The office of strategy management. *Harvard Business Review*, 83(10), 72–80. <https://hbr.org/2005/10/the-office-of-strategy-management>

- Kim, C. S., & Davidson, L. F. (2004). The effects of IT expenditures on banks' business performance: Using a balanced scorecard approach. *Managerial Finance*, 30(6), 28-45. <https://doi.org/10.1108/03074350410769100>
- Latan, H. (2013). *Structural Equation Model: Theory and Implementation of AMOS 21.0*. Bandung: Alfabeta.
- Lawrie, G., & Cobbold, I. (2004). Third-generation balanced scorecard: Evolution of an effective strategic control tool. *International Journal of Productivity and Performance Management*, 53(7), 611-623. <https://doi.org/10.1108/17410400410561231>
- Malik, M. F., Zaman, M., & Buckby, S. (2020). Enterprise risk management and firm performance: Role of the risk committee. *Journal of Contemporary Accounting and Economics*, 16(1). <https://doi.org/10.1016/j.jcae.2019.100178>
- Olayinka, E., Emoarehi, E., Jonah, A., & Ame, J. (2017). Enterprise risk management and financial performance: Evidence from Emerging Market. *International Journal of Management, Accounting, and Economics*, 4(9), 937-952. [https://www.ijmae.com/article\\_115154.html](https://www.ijmae.com/article_115154.html)
- Olivia, C., Atahau, A. D. R., Martono, S. (2020). Financial risk and performance of national private foreign exchange commercial bank: Moderating effects of bank size. *Jurnal Keuangan dan Perbankan*, 26(1), 229-246. <http://dx.doi.org/10.26905/jkdp.v26i1.6268>
- Pandjaitan, D. R. H., MS, M., Hadianto, B. (2021). Website quality, E-satisfaction, and E-loyalty of users based on the virtual distribution channel. *Journal of Distribution Science*, 19(7), 113-121. <https://doi.org/10.15722/jds.19.7.202107.113>
- Rasid, S. Z. A., Isa, C. R., & Ismail, W. K. W. (2014). Management accounting systems, enterprise risk management, and organizational performance in financial institutions. *Asian Review of Accounting*, 22(2), 128-144. <https://doi.org/10.1108/ARA-03-2013-0022>
- Rostami, M., Goudarzi, A., & Zaj, M. M. (2015). Defining balanced scorecard aspects in the banking industry using the FAHP approach. *International Journal of Economics and Business Administration*, 1(1), 25-38. <http://files.aiscience.org/journal/article/pdf/70220007.pdf>
- Sleimi, M. T. (2020). Effects of risk management practices on banks' performance: An empirical study of the Jordanian. *Management Science Letters*, 10, 489-496. <http://dx.doi.org/10.5267/j.msl.2019.8.021>
- Sofia, I. P., & Augustine, Y. (2019). Do enterprise risk management and hybrid strategy affect organizational performance? *South-East Asia Journal of Contemporary Business, Economics, and Law*, 20(5), 120-126. [https://seajbel.com/wp-content/uploads/2020/03/KLICELSL14\\_256.pdf](https://seajbel.com/wp-content/uploads/2020/03/KLICELSL14_256.pdf)
- Sugiyono, S. (2010). *Business Research Methods: The Approach of Quantitative, Qualitative, and R & D*. Bandung: Penerbit Alfabeta.
- Suttipun, M., Siripong, W., Sattayarak, O., Wichianrak, J., & Limroscharoen, S. (2018). The influence of enterprise risk management on firm performance measured by the balanced scorecard: Evidence from SMEs in Southern Thailand. *ASR: Chiang Mai University Journal of Social Sciences and Humanities*, 5(1), 33-53. <https://doi.org/10.12982/CMUJASR.2018.0002>
- Tjahjono, T., Budiyo, B., & Khuzaini, K. (2022). Risk management at the rural banks with ISO 31000 approach. *Proceeding of the Second International Conference on Business & Social Sciences* (pp. 1-9). Surabaya: Sekolah Tinggi Ilmu Ekonomi Indonesia.
- Upadhaya, B., Munir, R., & Blount, Y. (2014). Association between performance measurement systems and organizational effectiveness. *International Journal of Operations and Production Management*, 34(7), 853-875. <https://doi.org/10.1108/IJOPM-02-2013-0091>
- Whellen, T. L., & Hunger, J. D. (2012). *Strategic Management and Business Policy: Towards Global Sustainability* (13 eds.). New Jersey: Pearson.
- Wu, H. Y., Tzeng, G. H., & Chen, Y. H. (2009). A fuzzy MCDM approach for evaluating banking performance based on the balanced scorecard. *Expert Systems with Applications*, 36(6), 10135-10147. <https://doi.org/10.1016/j.eswa.2009.01.005>

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