DETERMINANTS OF BANKING PERFORMANCE IN INDONESIA: A HUMAN CAPITAL PERSPECTIVE

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ABSTRACT

The paper aims to study the determinants of banking performance from the human capital perspective. Banking is a service industry that heavily depends on human capital. Therefore, the research will focus on human capital quality in determining banking financial performance. This research analyses five ratios: Education Ratio, Average Age Ratio, Gender Composition, number of employees, and number of branches. The dependent variable will be the profitability ratio represented by the return on asset (ROA). Linear regression is used to investigate the effect of human capital on banking performance. We use Statistical Program for Social Science (SPSS) software to test the research model. The samples are 11 banks categorized as BUKU 4 and BUKU 3 by Bank Indonesia's regulation (the central bank of Indonesia). The data and financial performance are obtained from 2015-2018. The empirical results show that the human capital, particularly the total employees and total branch, significantly influences banking performance. All variables are significant, with alpha <5%.

Keywords*: Banking Performance, Human Capital Perspective.*

1. INTRODUCTION

The banking industry has a significant influence on the economy of a country. As we can see, the 1998 and 2008 financial crises originated from the banking industry. Banking is one of the industries with the highest employment rate. According to Bureau Statistics Indonesia (BPS), the number of labor forces in the finance and service industry contributed to 2.8% of Indonesia's total labor force in 2017.

The number of the labor force in the financial and service institutions constitutes 3.5 million of the total 124.5 million labor force in Indonesia. This number comprises the labor force which directly works in the financial and service institution industry. A large portion of the labor force does not directly depend on the financial services industry. Banking is one of the economy's primary movers because other industries need funding from the banks to run their businesses.

Besides the banking industry, the service industry also plays an essential role in the economy. The service industry highly depends on the quality of its human capital. The financial services industry, especially the banking industry, requires human capital with high quality. High-quality human capital will deliver outstanding performance. Education and training for

human capital will also increase company performance through labor productivity. (Khan, 2014). Banking is a highly regulated industry, so the quality of human resources is crucial. Based on Khan's research (2014) and the number of workers in the service industry, human quality is crucial in the service industry, especially financial services.

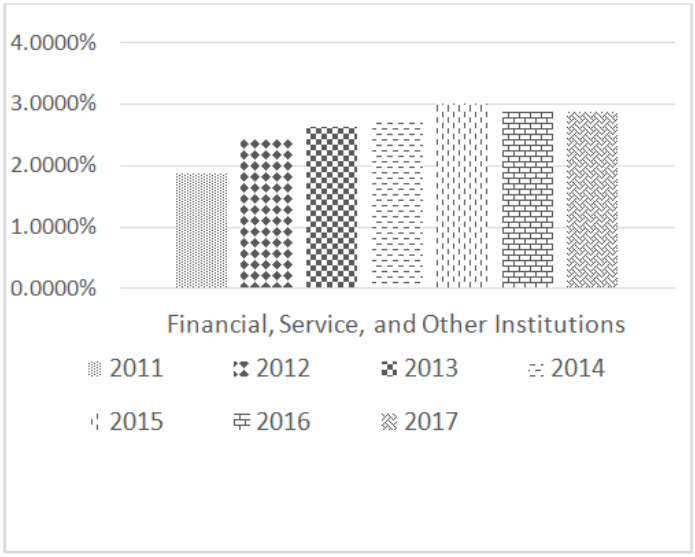

Figure 1. Percentage of Labor Force in The Service Industry to Total Labor Force
Source: www.ojk.go.id

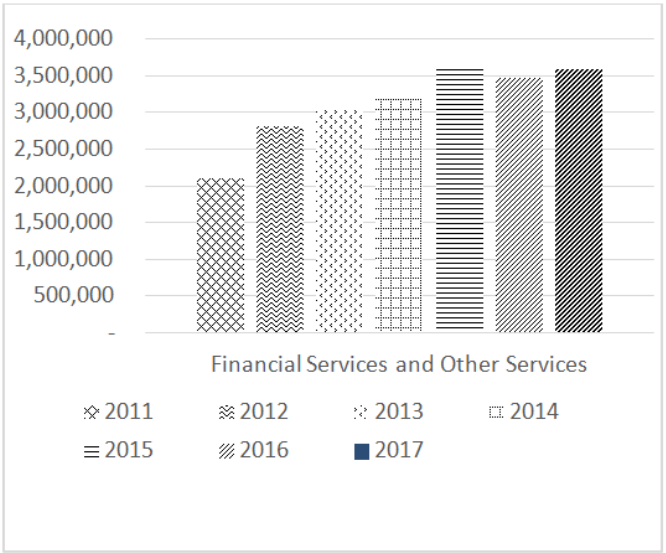

Figure 2. Number of Labor Force in Financial, Service, and Other Institutions
Source: www.ojk.go.id

Much research studies the effect of human capital on banking performance, but there has been no conclusive result produced so far. Some of the researches mentioned above are conducted by Razafindrambinina and Aggreni (2011), Nimtrakoon (2015), Inkinen (2015), Atmadja et al (2016), Sidharta and Affandi (2016), Ozkan et al (2017), Susanto (2017), Poh et

al (2018), and Yen et al (2019). Therefore, further research needs to be conducted on the effect of human capital on banking performance.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

Razafindrambinina and Aggreni (2011) analyze the effect of intellectual capital on public companies' performance in Indonesia. The public companies in this research are consumer goods companies. The result shows that intellectual capital contributes to the financial performance, with an exception for the revenue growth of the consumer goods companies.

Nimtrakoon (2015) studies 220 technology companies listed on five stock exchanges in Asia since 2011. This research uses the Kruskal-Wallis, ANOVA, and multiple regression analysis. The research concludes that intellectual capital has a positive effect on the stock price.

Inkinen (2015) finds that intellectual capital has a significant effect on the company's innovation performance. Intellectual capital also influences company performance through interaction, combination, and mediation.

Atmadja et al. (2016) find a positive relationship between performance and human capital. The education level also has a marginal relationship with the enterprise performance in the Micro, Small, and Medium Enterprises industry in Indonesia.

Sidharta and Affandi (2016) study the effect of intellectual capital on companies' financial performance based on Java Island, Indonesia. The number of research samples is 615 companies. This research concludes that intellectual capital has a significant effect on financial performance.

Ozkan et al. (2017) analyze the influence of intellectual capital and financial performance in Turkey's banking industry. This research finds that capital employed efficiency and human capital efficiency influence the bank's financial performance positively. Capital employed efficiency has a more significant influence than human capital efficiency.

Suroso et al. (2017) indicate that intellectual capital has a significant and positive effect on ROA. However, intellectual capital does not have a significant influence on asset growth. According to Susanto (2017), intellectual capital has a significant effect on company performance. Susanto analyses 64 public companies in Indonesia from 2012 to 2014.

Poh et al. (2018) study the relationship between intellectual capital and banking performance in Malaysia from 2007 to 2016. They find that intellectual capital significantly affects banking performance indicators, such as Return on Assets.

Yen et al. (2019) conclude that intellectual capital influences the banking industry's financial performance, especially in Malaysia's banks. This research focuses on Value Added Intellectual Capital (VAIC).

This research will study the effect of human capital / intellectual capital on the banking performance of BUKU 4 and BUKU 3 banks in Indonesia from 2015 to 2018. The number of samples in this research is 11 banks. The variable of the bank performance is Return on Asset. The Return on Assets variable was previously analyzed by Suroso et al. (2017) and Poh et al. (2018).

The independent variables are average employee age, average employee education level, employee gender composition, number of employees, and the number of bank branches.
The purpose of this research is to answer the following question:
Does Intellectual Capital have a significant effect on bank financial performance in Indonesia?
Does Physical Capital have a significant effect on bank financial performance in Indonesia?

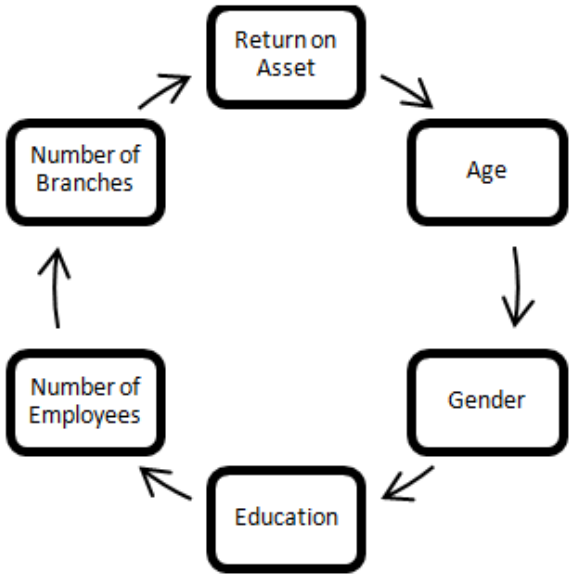

Figure 3. Research Framework
Source: Research Result

This study will examine the effect of age, gender, education, the number of workers, and the number of branches on banking performance based on the research framework above. The banking performance is measured with Return on Assets. The Return on Asset performance variable has been examined by Suroso et al (2017) and Poh et al (2018).

3. RESEARCH METHOD

The model in this research is as follows:

$$Y_{it} = a + b_1 Um_{it} + b_2 Pend_{it} + b_3 Gen_{it} + b_4 Cab_{it} + b_5 Kar_{it} + \varepsilon$$

Description:

Y = Return on Asset and Firm Size

Um = Average Employee Age

Pend = Average Employee Education Level

Gen = Employee Gender Composition

Cab = Number of Branches

Kar = Number of Employees

The hypotheses are shown in the following table:

Table 1. Hypotheses

Hypothesis	Determinant	Variable	Relationship - Effect	Reference (Previous Research)
H1	Intellectual Capital	Average Employee Age	Significant on ROA	Inkinen (2015), Susanto (2017), and Yee et al (2019)
H2	Intellectual Capital	Average Employee Education Level	Significant on ROA	Atmadja et al (2016), Khan, 2014
H3	Intellectual Capital	Employee Gender Composition	Significant on ROA	Inkinen (2015), Susanto (2017), Yen et al (2019), and Ozkan et al (2017)
H4	Physical Capital	Number of Branches	Significant on ROA	Ozkan et al (2017)
H5	Intellectual Capital	Number of Employees	Significant on ROA	

Source: Data Processed

Data and Variables

This research uses secondary data published on the annual report of banks from 2015 to 2018. BUKU 4 and BUKU 3 banks' classifications are based on the category regulation of Bank Indonesia/Financial Services Authority (OJK). The definitions of the research variables are shown in the following table:

Table 2. Research Variables

Variable	Definition
Employee Age	Um = average employee age
Employee Education	Pend = average employee education level
Employee Gender Composition	Gen = number of female employees to total employees
Number of Bank Branches	Cab = number of branches owned by banks
Number of Employees	Kar = total number of employees

Source: Data Processed

4. DATA ANALYSIS AND DISCUSSION

The ages of the employee of BUKU 4 and BUKU 3 banks range from 32 to 39 years old. The average age of bank employees is 34 years and 11 months old. This number indicates the maturity level of bank employees. The majority of employees have bachelor's degrees. In total, employees have bachelor's degrees, as an indication of good quality in running a banking business.

Table 3. Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Standard Deviation
Um	4	32	39	34,91	1,6398
Pend	44	0,846	1,070	0,943	0,05993
Gen	44	27,02	60,41	50,59	0,0813
Cab	44	300	3.879	1420,27	1044,55
Kar	44	6.075	93.333,00	25.226,93	24711,43

Source: Data Processed

The average composition of female employees to the total number of employees is 50.59%. Female employees outnumber male employees. However, the difference is not significant. There is a bank with total female employees constituting 60.41% of the total employees from the research sample. On the other hand, there is also a bank in which female employees constitute 27.02% of total employees.

The number of bank branches in this research is 300 to 3,879 branches. On average, BUKU 3 and BUKU 4 banks have 1,420 branches. The average number of employees is 25,226 employees in BUKU 3 and BUKU 4 banks. The smallest number of employees is 6,075 employees, and the largest number of employees is 93,333 employees.

Testing H1 (Average Employee Age on Return on Assets)

Based on the statistical hypothesis testing, employees' average age does not significantly affect the financial performance – Return on Assets. The research also finds that the average age of employees of the banks is similar. The age difference between the youngest and oldest employee is seven years. The average employee age is 35 years old. There are no differences observed, the age of employees is not a significant thing affecting bank performance. Indonesia's retirement age is still standard at 55, which results in the age value is insignificant. With an average bank age of 35 years old and a minimum of 32 years, and a maximum of 39 years, the value also showed no significant difference between the banks studied. This result contrasted with Inkinen (2015), Susanto (2017), and Yee et al. (2019)'s findings.

Testing H2 (Average Employee Education Level on Return on Assets)

Employee education level does not have any significant effect on financial performance – ROA. The average level of employee education is similar among the banks, with 94.3% of employees have attained bachelor's degrees. With the number of employees who have achieved undergraduate education, banking is an industry that has high-quality human resources. So the educational background does not become a variable that influences significantly. This result is supported by the previous research conducted by Atmadja et al. (2016).

Testing H3 (Employee Diversity on Return on Assets)

Employee diversity also does not have any significant effect on ROA. The ratio of female and male employees is not significant. The percentage of male employees is 50.59%, and the percentage of female employees is 49.41%. This result contrasted with Inkinen (2015), Susanto (2017), Yen et al. (2019), and Ozkan et al. (2017)'s findings.

Table 4. Research Result

Variable	Return on Asset	
Um	0,011	
	(0,010)	**
Pend	0,105	
	(0.254)	
Gen	0.087	
	(0.223)	
Cab	0.000034	***
	(0.000)	
Kar	0,0000015	***
	(0.000)	
R	0.603	
Sig	0.06	*

Source: Data Processed

Note:
1) Number in () estimated standard error
2) *) Significant on 10%
**) Significant on 5%
***) Significant on 1%

Testing H4 (Number of Bank Branches on Return on Assets)

The number of bank branches has a significant and positive effect on ROA. The higher the number of branches in the banking industry, the higher the ROA will be. To increase the ROA, banks need to expand their business coverage by opening new branches. The number of branches reaches the number of consumers and segments. So that the number of branches greatly influences banking performance. This can be seen by the number of branches in BUKU 4, such as Bank Rakyat Indonesia (BRI) and Bank Central Asia (BCA). The reach of branch

banks in BUKU 4 has proven the importance of the number of branches. This also relates to the culture of Indonesian people who still need physical appearance. The branch variable is significant at 5%.

From the sample, the number of branches ranged from 300-3800. It shows the number of different branches is very significant. With an average of 1420 branches, the number of branches is essential for a bank.

Testing H5 (Number of Employees Return on Assets)

The number of employees has a significant and positive effect on ROA. This result shows that productive employees influence the ROA performance of BUKU 3 and BUKU 4 banks. It is in line with the business model of banking, which heavily depends on human capital and many branches on asset growth. The number of branches will cause the number of employees to be significant.

With the number of employees ranging from 6000 to 93,000 and an average of 25,000 employees per branch, we can conclude that employees are an essential factor. The financial industry is a service industry, so service with humans is an essential factor.

5. CONCLUSION

By analyzing Book 3 and Book 4 banks from 2015 to 2018, the total number of banks studied is 11 banks. This research concludes that some bank branches and the number of employees positively influence the financial performance of banks, particularly on Return on Assets (ROA). Training and education do not have any significant effect on Return on Assets (ROA). Based on this result, banks' managers and shareholders are recommended to increase the number of branches and employees to increase Return on Assets (ROA).

Implication

This study indicates that a bank with good performance requires a large number of branch networks according to Indonesia's geographical expansion. With a large number of branches, it requires a large number of employees. Research also shows that education and training are not the primary factors in determining banking performance. This is in line with data showing that the average education level of banking employees has a bachelor's degree.

Suggestion and Limitations

This research only uses one ratio to measure banking performance: Return on Assets (ROA). Future researchers are suggested to add more performance parameters, such as profitability and efficiency. Furthermore, this research only analyses Book 3 and Book 4 banks, so the result cannot be generalized.

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