



## The determinants of Islamic banking earnings growth: A perspective from Islamic financial literacy, inclusion, and higher education

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### Abstract

Islamic banks in Indonesia are experiencing a positive trend marked by Islamic bank profits, which continue to grow yearly. This study analyzes the effect of Islamic financial literacy, Islamic financial inclusion, and Islamic higher education on the profit growth of Islamic banks. Marketability represented by market concentration and market share is included as mediation. This study uses data taken from reports of Indonesia Financial Services Authority and annual reports of Islamic banks in Indonesia from 2018 to 2022. The population of samples in this study was 60 data samples from 12 sharia banks. Data were analyzed using Path Analysis. Two intervening variables as mediation are used to explore further regarding Islamic banking and as a differentiator from other research. The results of this study with the direct effect found that Islamic bank profit growth was influenced by Islamic financial literacy and Islamic financial inclusion, but higher education did not affect Islamic bank profit growth. Indirect effect with marketability as mediation results in findings that Islamic financial literacy and Islamic financial inclusion affect the growth of Islamic bank profits but higher education does not influence the growth of Islamic bank profit. The results of this study can be used as consideration for Islamic banking in making decisions to increase profit.

**Keywords:** Islamic banking, Earnings growth, Literation, Higher education.

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## 1. Introduction

As one with the largest Muslim population in the world, Indonesia implements two banking systems, namely the conventional system and the Sharia system. The Islamic banking system began with the establishment of Muamalat Bank in 1991. Islamic banks that use Sharia principles are still limited to those who adhere to the Islamic faith. Although not comparable to conventional banks, the Islamic banking system has recently become a user trend. This can be seen from the data of customers who used Islamic banks in 2018 as many as 29,201,387 and increased in 2022 to 42,435,045 (Indonesia Financial Services Authority, 2022). The Muslim population in Indonesia, which has touched 237 million people, is the basis for bank expectations to generate more profits through their Islamic finance unit. However, when viewed from a comparison of the total assets of Islamic banking which is more than 502 trillion with conventional banking which is at 10,000 trillion, there is a very significant difference. This also affects the level of profit generated by the two banking systems. In Islamic banking, the total profit earned during 2022 is 9 trillion, while the total profit that conventional banks successfully generated during the current year is 254 trillion. Islamic banks in Indonesia need to increase company profit growth, especially considering that the Muslim population is quite large.

According to Abbas and Sarah (2019), a business unit needs to increase its selling power to increase profit growth. The higher the selling power in the market, the higher the market power of Islamic banks, with higher market power they can run their business more efficiently which can affect the increase in the rate of income. Great selling power must be supported by easy access to Sharia products. The difficulty of access to Sharia products is allegedly the background to the slow growth rate of Islamic banking in Indonesia (Banna & Alam, 2021)

The government through the Financial Services Authority and Bank Indonesia every year continues to try to introduce Islamic business units through Islamic financial literacy and inclusion schemes. The role of literacy and inclusion indirectly affects selling power in absorbing market power. Increased selling power aligns with positive profit growth (Abbas & Arizah, 2019). From an Islamic point of view, financial information is mandatory for Muslims to know and understand more deeply. This is because the instruments used by Muslims follow the rules of Islamic law. This factor is the background that knowledge of Islamic finance is essential for Muslims.

Islamic financial literacy is based on responding to various challenges. For instance, when a Muslim seeks financing, Islamic financial literacy is helpful for understanding financing requirements and factors that might affect their solvency. This is the importance of Islamic financial literacy to understand in order to maintain Islamic principles (Albaity & Rahman, 2019). Increasing Financial Literacy in Indonesia is echoed by the government through campaigns for the public. Seminars, group discussions, or conferences are campaigns to increase financial literacy. People are expected to wish to access Islamic financial services by increasing Islamic financial literacy. When people understand Islamic financial instruments, people can migrate to Islamic banks, and this is part of inclusion which is influenced by the literacy process (Adzimatunur & Manalu, 2021).

Inclusion can be successful if the success factors are met. The number of bank customers, the availability of banking services, the use of banking services, the availability of insurance products, and pension fund products protected from inflation are determining factors for the success of financial inclusion (Abdul Aris et al., 2013). From a banking perspective, the output of the literacy process is expected to guide banks in providing financial products and services that meet the needs of society. If banks always facilitate these needs, then inclusion increases slowly so that this goes hand in hand with an increase in profit growth rate (Ali et al., 2019). Literacy support for inclusion is expected to influence greater selling power resulting in

increased profit growth (Abbas et al., 2022). Socialization of Financial Literacy, in reality, is often carried out within the scope of cooperation with universities. Indirectly, students serve as decoration for the socialization of financial literacy as the main driving force for increasing the financial literacy index in a national survey and financial inclusion issued by the OJK. However, whether this effort has produced results in the profit growth rate of Islamic banks is still a question mark.

Abbas et al. (2019) examined the relationship between selling power and profit growth involving the role of financial inclusion and financial literacy. With a moderated mediation model, this study reveals that inclusion supported by the role of literacy has a significant effect on increasing selling power which is in line with increasing bank profit growth. Cham's research (2017) tested the determinants of the growth rate of Islamic banking and found that oil prices, an educated workforce, and price stability affected the profit growth of Islamic banking. However, other variables, namely economic growth and the number of Muslim populations, have no significant effect on the profit growth of Islamic banks.

(Cupian & Abduh, 2017) Analyze the effect of selling power through market concentration and market power on banking market competition in Indonesia. This study reveals that selling power has a positive effect on market competition. Islamic banking in Indonesia tends to have low market competition due to low selling power. Albaity and Rahman's research (2019) measures the level of literacy used to explore prospective customers' intentions to use Islamic banking. The findings of this study are that literacy has a negative effect on the intention to use Islamic banking, but literacy and attitude simultaneously positively influence the intention to use Islamic banking products.

In Fauziya's research, Manalu (2021) tests financial inclusion in Islamic banking on economic growth with the time series data used: industrial production indexes, third-party fund accounts, and financing accounts. This research shows that Islamic financial inclusion positively affects economic growth. Therefore, the main objective of this research is to investigate the effect of Islamic financial literacy, Islamic financial inclusion, and Islamic student population on Islamic banks' profit growth, which is mediated by selling power. The output of this research is to try to investigate a new model related to things that influence the profit growth of Islamic banking in Indonesia in terms of literacy, inclusion, and education which are mediated by selling power. Until now, studies related to this empirically are still limited.

This research paper is structured as follows: Chapter 2 discusses the Literature Review and hypothesis development, Chapter 3 describes the research methodology Chapter 4 contains the results of the research and Chapter 5 conclusions.

## **2. Literature Review**

### **2.1. Market Force Theory**

High market power characterizes the banking sector in developing countries (Mirzaei et al., 2013). The level of market power can determine the form of competition. Furthermore, high competition between banks can reduce the ability of banks to generate profits so banks are expected to reduce lending rates thereby reducing the risk of default on debtors. One of the aspects explained through market power theory is structure conduct performance, in the future abbreviated as SCP. Market concentration and market share are described in the SCP. The market concentration and share trend reflect the company's ability to gain market power. The SCP concept reveals that market concentration can influence company behavior to maximize profits through prices above marginal costs (Berger, 1995). Banks with a dominant share in a market are determinants of strong market power (Abbas & Arizah, 2019; Mahendra & Prasetyo, 2017).

In terms of measuring market power within the scope of competitive intensity, previous studies have used the Lerner index as a rational approach to measuring market power. This index assumes that profit maximization is at the value of marginal cost below the price. A value of zero indicates low market power, and a value of one indicates high market power characterized by extreme market power.

## **2.2. Marketability and the Role of Literacy, Inclusion, and Education**

Marketability is the company's ability to utilize its resources to gain market power based on commercial products and services (Avramidis et al., 2018). In order to dominate a market, Islamic banks must identify their market power. Banks with high-profit growth and good bank stability are reflected by solid market power (Cupian & Abduh, 2017).

The high marketability of Islamic banks will be directly proportional to the level of profit growth. As the primary driver of national banking, conventional banking still cannot be rivaled by Islamic banking, especially regarding profit growth. However, the government expects profit growth to increase in line with the development of marketability (Nurwati et al., 2014). The government, in this case, the OJK, has produced a working concept for implementing national literacy and inclusion activities. The concept called the national financial literacy strategy, in the future abbreviated as SNLKI, encourages financial introduction at every level of society.

Financial literacy and inclusion affect national growth (Adzimatunur & Manalu, 2021). Literacy that is echoed provides information to the public on access to banking products and services. With many people accessing banking services, banking revenues are expected to increase and align with national economic growth. Literacy is the process of providing financial knowledge, mainly aimed at students. In this case, literacy and higher education are interrelated.

Literacy and inclusion can influence marketability and increase bank profit growth (Dewi et al., 2020; Shen et al., 2018). The promotion of financial products is the foundation of public understanding of finance. People who are good at choosing and using financial instruments are expected to increase their financial literacy. This expectation will lead people to access financial instruments that are suitable for them. Education is essential in the openness and acceptance of information. The higher the public education will align with the increased financial understanding received (Cham, 2018). People who have a cognitive understanding in financial literacy will continue to access financial instruments. Differential banking products and services will be the destination for people to invest their money. Each person's need for financial products is always different. Good literacy will provide strategies related to the needs of the community (Antara et al., 2016). Islamic banking must facilitate the community's needs regarding the financial instruments needed. The market power of Islamic banking will increase in line with public access to Islamic financial products and services. Increased market power will be related to increased selling power. So that the first hypothesis proposed in this study is that literacy, inclusion, and education affect market power.

H1a: Literacy affects Market Concentration

H1b: Inclusion affects Market Concentration

H1c: Higher Education affects Market Concentration

H1d: Literacy affects Market Share

H1e: Inclusion affects Market Share

H1f: Higher Education affects Market Share

## **2.3. Profit Growth and the Role of Literacy, Inclusion, Education, and Marketability**

In market power theory, marketability influences revenue. The ability of the bank determines performance. In this case, the ability is determined by the market structure where the Islamic

bank is located (Weill, 2010). Literacy and inclusion are critical enablers of high marketability. High marketability accelerates to high income.

Education is one of the things that must be considered. Higher education will align with the ease of receiving information on financial products and services, which is expected to strengthen the bank's market power. The increased selling power of the role of literacy involvement can also determine bank growth. People who understand financial instruments will continue to access banking services. Financial inclusion affects economic growth (Ratnawati, 2020).

The rate of profit growth can increase when market power mediates selling power. If literacy and inclusion increase, market power will be affected to align with profit growth. Literacy will direct people to use financial instruments, and people who have become customers will be more interested in increasing investment. The market share that has been controlled indicates a strong market power and is in line with the selling power that has increased. High marketability is in line with the growth of income. This is the basis, inclusion, and literacy through the mediation of marketability can be expected to affect profit growth. The second hypothesis uses the role of literacy, inclusion, and education in increasing marketability, affecting profit growth. So, the second hypothesis proposed in this study is that marketability mediates the relationship between literacy, inclusion, and education with profit growth.

H2a: Market Concentration has a mediating effect on the relationship between literacy and earnings growth

H2b: Market Concentration has a mediating effect on the relationship between Inclusion and earnings growth

H2c: Market Concentration has a mediating effect on the relationship between Higher Education and earnings growth

H2d: Market Share has a mediating effect on the relationship between Literacy and earnings growth

H2e: Market Share has a mediating effect on the relationship between Inclusion and earnings growth

H2f: Market Share has a mediating effect on the relationship between Higher Education and profit growth

### **3. Methodology**

#### **3.1. Populations and samples**

This study uses a sample of Islamic Banks in Indonesia which are registered with Bank Indonesia and the Financial Services Authority. This study uses quantitative research using time series data from monthly Bank Indonesia and the Financial Services Authority reports from 2018 to 2022.

On variables, Profit growth, Islamic Financial Literacy, and Financial Inclusion are calculated monthly, so the sample population is 60 in each variable. Higher education and marketability variables are calculated on an annual basis. Higher education is calculated based on the number of graduates of state Islamic universities each year, with the number of state Islamic universities in 2022 totaling 23. Still, due to limitations in data collection, the state Islamic universities sampled were only the 12 largest state Islamic universities, so the sample population in this variable was 60. While in marketability, the number of Islamic banks sampled was 12, so the sample population amounted to 60.

### 3.2. Research Variables

The independent variables in this study are financial literacy, financial inclusion, and education, while the dependent variable is the profit growth of Islamic banks. This study uses an intervening variable namely marketability as a mediation between the independent variable and the dependent variable.

Profit growth can be defined as the rate of increase or decrease in profit in a period. The strength of a strong and healthy bank in the long term reflects an increasing rate of profit growth. Earnings growth is based on the comparison between past and present earnings performance.

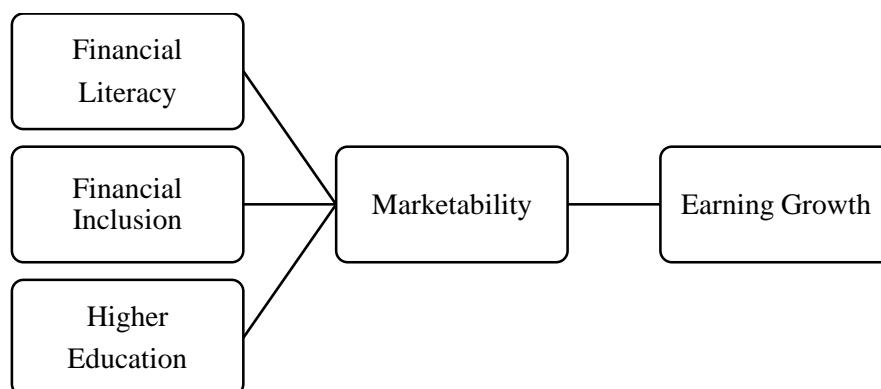
$$\text{Earning Growth} = \frac{\text{total profits}_t - \text{total profits}_{t-1}}{\text{total profits}_{t-1}}$$

Strong market power indicates that a bank has high marketability. In measuring marketability, this study uses the principle of market power in the SCP perspective. Marketability in SCP is associated with market concentration projected through the HHI index measured by using the ratio between the sum of the squares of the total revenue of each Islamic bank and the total Islamic revenue. In addition to market concentration, market power also needs to be projected by market share whose measurement comes from the total assets of each Islamic bank divided by the total assets of all Islamic banks.

Financial literacy data in this study were collected through online media that provide information related to the agenda of delivering financial information in seminars, group discussions, conferences, or other forms. As the world's number one search engine, Google is the tool used to search for online media reports.

Financial inclusion is people's access to financial instruments. In this case, the number of users of financial instruments is related to inclusion. Financial instrument users or bank customers are the measures of financial inclusion in this study. The measure of inclusion in question is the number of financing customers and third-party customers. Data is collected from Islamic banking statistics issued by OJK every month.

Education is projected to be one way to increase the profit growth rate. The receipt of good information reflects the higher education community. Higher education is expected to increase the bank's strength to increase the growth rate. In this study, higher education is represented by the number of graduating students from State Islamic Universities. Data is collected from each university's website.



**Figure 1. Conceptual Hypothesis**

### 3.3. Data Analytics

Research using time series data must be tested using a stationary test. In mediation, there are two mediations that can occur, namely full mediation and partial mediation. In full mediation,

the dependent variable cannot be influenced by the independent variable without the presence of the intervening/mediating variable. In contrast, the independent variable can directly affect the dependent variable in partial mediation.

#### 4. Results

**Table 1. Descriptive Statistic**

Variable	N	Minimum	Maximum	Mean	Deviation
Financial literacy	60	0.00	13.00	5.366	3.319
Financial inclusion	60	19.80	38.80	28.668	4.999
Higher education	60	0.55	7.51	3.085	1.476
Market Concentration	60	0.05	0.49	0.219	0.123
Market Share	60	0.00	0.18	0.065	0.043
Earning Growth	60	0.00	0.45	0.154	0.120
Valid N Listwise	60				

Descriptive statistic testing in this study includes minimum, maximum, average, and standard deviation. During the observation period, the amount of literacy organized was at most 13 activities in a month and at least there were no activities at all in a month and the average literacy obtained was 5.22. In the Islamic bank customer inclusion variable, the least is 19.8 million and the most is 38.8 million with an average obtained of 28.6 million. In the higher education variable, the most graduation is obtained 7.5 thousand while the least is 0.55 thousand with an average variable of 3.1 thousand.

The average market concentration is 0.22, which indicates a less concentrated market, while the average market share obtained is 0.06, indicating that the market share of Islamic banks is still low. The low marketability of Islamic banks is reflected in the need for more concentration and low market share. In the profit growth variable, the highest growth was obtained at 0.45, the lowest was 0.002, and the average profit growth variable was 0.15. This value can be interpreted that the profit of Islamic banks during the observation period increasing by 0.15 or 15%.

**Table 2. Average Variables**

Variable	2018	2019	2020	2021	2022
Financial literacy	3.909	5.5	5.916	8.333	3.333
Financial inclusion	22.354	24.883	27.541	31.891	35.3
Higher education	2.918	2.930	2.439	2.78	4.16
Market Concentration	0.233	0.217	0.222	0.224	0.209
Market Share	0.069	0.063	0.065	0.065	0.066
Earning Growth	0.261	0.217	0.133	0.129	0.130

Based on the table of average observation period variables, marketability as seen from market concentration and market share is observed to be relatively stagnant in each year. Meanwhile, in the profit growth variable, the average growth in each period decreased yearly, especially in 2020. This can be caused by the effect of outbreak of Covid 19 which affects the people's economy.

**Table 3. Data Inspection**

Variable	VIF	Sig
Financial literacy	1.169	0.303
Financial inclusion	1.055	0.080
Higher education	1.302	0.642
Market Concentration	3.451	0.104
Market Share	3.474	0.104
Durbin-Watson	1.929	

Research data is examined to be fit and unbiased. This study uses multicollinearity, autocorrelation, and heteroscedasticity tests. In the multicollinearity test, all VIF values are less than 10.0, indicating no multicollinearity. Durbin-Watson is used as an autocorrelation test with a value of 1.929 which is more significant than Du and smaller than 4-Du indicating no correlation in the research data. The Glejser method is used to test heteroscedasticity with all variables more than 0.05, so the research data does not occur symptoms of heteroscedasticity.

**Table 4. R2**

Variable	R2
Financial literacy	0.31
Financial inclusion	0.58
Higher education	0.63
Market Concentration	0.02
Market Share	0.01

In the R Square model, the financial literacy variable gets a value of 0.31, indicating that profit growth influences 31 percent of Islamic financial literacy. Islamic financial inclusion and higher education are 58% and 63% respectively influenced by profit growth. While in market concentration and market share only at 2% and 1%.

Path analysis is used to analyze the effect of independent variables with dependent with intervening variables as mediation. Only higher education has a negative influence on the dependent variable both indirect effect and indirect effect. In contrast, financial literacy and financial inclusion positively affect the dependent variable.

**Table 5. Direct Effect Model**

Variable	Coefficient	T-Statistic	P-Value
Financial literacy → Earning Growth	0.17	1.36	0.01***
Financial inclusion → Earning Growth	0.24	1.87	0.00***
Higher education → Earning Growth	0.25	1.97	0.08
Financial literacy → Market Concentration	0.32	3.01	0.00***
Financial inclusion → Market Concentration	0.14	1.7	0,00***
Higher education → Market Concentration	0.83	3.98	0.08
Financial literacy → Market Share	0.27	2.5	0.01***
Financial inclusion → Market Share	0.11	0.98	0.00***
Higher education → Market Share	0.72	3.27	0.63
Market Concentration → Earning Growth	0.22	1.19	0.01***
Market Share → Earning Growth	0.32	2.41	0.01***

\*\*\* Significant



**Table 6. Indirect Effect Model**

Variable	Coefficient	T-Statistic	P-Value
Financial literacy → Market Concentration → Earning Growth	0.42	3.28	<b>0.00***</b>
Financial inclusion → Market Concentration → Earning Growth	0.43	2.31	<b>0.02***</b>
Higher education → Market Concentration → Earning Growth	0.43	1.05	0.28
Financial literacy → Market Share → Earning Growth	0.10	5.88	<b>0.00***</b>
Financial inclusion → Market Share → Earning Growth	0.10	2.78	<b>0.01***</b>
Higher education → Market Share → Earning Growth	0.10	1.62	0.33
*** Significant			

**Table 7. Hypothesis Result**

Variable	P-Value	Effect
Financial literacy → Market Concentration	0.01	<b>Yes</b>
Financial inclusion → Market Concentration	0.00	<b>Yes</b>
Higher education → Market Concentration	0.08	No
Financial literacy → Market Share	0.01	<b>Yes</b>
Financial inclusion → Market Share	0.00	<b>Yes</b>
Higher education → Market Share	0.63	No
Financial literacy → Market Concentration → Earning Growth	0.00	<b>Yes</b>
Financial inclusion → Market Concentration → Earning Growth	0.02	<b>Yes</b>
Higher education → Market Concentration → Earning Growth	0.28	No
Financial literacy → Market Share → Earning Growth	0.00	<b>Yes</b>
Financial inclusion → Market Share → Earning Growth	0.01	<b>Yes</b>
Higher education → Market Share → Earning Growth	0.33	No

### **Literacy, Inclusion, and Education Affect Marketability**

Market share and Market Concentration are projections of marketability. Based on the results of hypothesis testing, it is found that Islamic financial literacy and financial inclusion positively affect marketability represented by Market Concentration and Market Share. Meanwhile, higher education does not affect marketability. The higher the Islamic Financial Literacy and Islamic Financial Inclusion, the Marketability of Islamic banks will also increase. High marketability makes Islamic banks more efficient in running their business. The introduction and differentiation of Islamic bank products will increase marketability along with efforts to increase Financial Literacy and Financial Inclusion. Price control and market profits can be achieved if Islamic banks have a strong level of market power through the level of marketability.

### **Profit Growth and the Role of Literacy, Inclusion, Education, and Marketability**

Marketability has a strong relationship with market power in an effort to increase profits. Based on the results of hypothesis testing by including market concentration and market share project Marketability as mediation of Islamic financial literacy and Islamic financial inclusion affect the profit growth of Islamic banks. This finding shows the same results in previous studies (Abbas & Arizah, 2019; Albaity & Rahman, 2019; Khatib et al., 2022). Meanwhile, higher education

does not affect the profit growth of Islamic banks. This indicates that the profit of Islamic banks does not correlate with the increase in the number of graduates produced by public Islamic universities in Indonesia. The difference in the results of these findings indicates the uneven provision of Islamic financial literacy and access to Islamic banks at every level of students in Islamic universities which have been concentrated on economics students.

Market concentration is representative of marketability which is used as a mediation measure between financial literacy, financial inclusion, and higher education with Islamic bank profit growth. Market concentration successfully mediates the effect between financial literacy and financial inclusion with Islamic bank growth, but does not mediate the effect between higher education and Islamic bank growth. This study also found that higher education also has no positive influence on profit growth without mediation. This finding supports previous research (Khmous & Besim, 2020). The research did not find a significant effect between complete education and the market share of Islamic banks in the MENA Region.

In addition to Market Concentration, market share which is the level of banks in marketing their products are also used as a representative of marketability. Similar to market concentration, market share successfully mediates the effect between financial literacy and financial inclusion but does not mediate higher education with Islamic bank profit growth.

## 5. Conclusions

The main objective of this study is to analyze the effect of Islamic financial literacy, Islamic financial inclusion, and higher education on Islamic bank profit growth. During the observation period, covid-19 hit in 2020 and 2021 and was the cause of the decline in Islamic bank profits. Based on the results of hypothesis testing, it is found that Islamic financial literacy and Islamic financial inclusion have a positive effect on the profit growth of Islamic banks directly. At the same time, higher education does not affect the profit growth of Islamic banks.

The marketability projected by Market Concentration and Market Share is used to mediate between Islamic Financial Literacy, Islamic Financial Inclusion, and Higher Education on Profit Growth. During the observation period, the concentration of Islamic banks was less concentrated and had a low market share, reflecting the low marketability of Islamic banks. Using the path analysis method, the results of testing this study hypothesis that Islamic Financial Literacy and Islamic Financial Inclusion positively affect Islamic Bank Profit Growth through the mediation of marketability projected by market concentration and market share. While the higher education variable does not influence the profit growth of Islamic banks through the mediation of marketability.

The results of this study have several implications. For Islamic banking and the government, Islamic financial literacy activities are more optimized and evenly distributed, especially in the university environment. Islamic banking also needs to improve Product differentiation, customer service, and easy access because this is directly related to marketability.

This research has limitations. Marketability measurement is only projected through market concentration and market share; it is expected that further research can add other marketability elements or use other measurements such as the Lerner index. Islamic bank profit growth is not only limited to consumer factors, it is hoped that further research will add other factors both internal and external factors that affect Islamic bank profits. In addition, the new Islamic higher education variable uses data on graduates of state Islamic universities. Future research is expected to be able to explore the depth of understanding of Islamic financial literacy in students in Indonesia and its relationship with the growth of Islamic banking.

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