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THE EFFECT OF KNOWLEDGE AND REGULATION TOWARD THE ISLAMIC FINANCIAL INDUSTRY DEVELOPMENT

Mansyur Asri[1], Ernawati[2*], Ambo Wonua Nusantara[3]

[1]STMIK Catur Sakti, [2,3]Universitas Halu Oleo

[1]Abdullah Silondae Street No. 109 Kendari, 93111

[2,3]HEA Mokodompit Street Kampus Bumi Tridharma Anduonohu Kendari, 93232

[1]mansyur.asri12@gmail.com [2*]ernawaty@uho.ac.id [3]nusantara.uho@gmail.com

Abstract

The development of Islamic finance industry in many countries, it has not been in line with the Moslem population, because beside the potential demand reason, the Islamic financial industry services is also influenced by knowledge and regulation support.This study aims to determine the effect of knowledge and regulation toward the development of the Islamic financial industry. The study uses secondary data from ICD publications in 2013-2019 period for 41 countries. The data were analyzed using the panel data regression and moderating variables, where knowledge has been estimated as a moderating variable for the regulations effect on the Islamic financial industry development. The results showed that: (1) the regulation and the level of knowledge had a positive significant effect to the Islamic finance industry development; and (2) the knowledge variable becomes the moderator between regulation and the development of the Islamic financial industry. This shows that the knowledge would encourage the strengthening of the regulatory effect on the development of Islamic finance.

Keywords: Knowledge; Regulation; Finance
*Correspondent author

I. Introduction

The Islamic financial industry fundamentally different from the conventional financial industry, including the application of the principle of profit sharing to replace interest rates in conventional finance, avoiding speculative transactions (*maysir*) and transactions containing other uncertainties (*gharar*). The existence of the Islamic finance industry is very urgent for the Muslim community to meet financial needs but still in line with religious values, especially with the population of the world's Muslim community which continues to experience growth. The Muslim community in the world in 2020 is estimated to reach around 1.9 billion people or 25% of the world's total population, and by 2030 it is estimated to reach 2.2 billion people or 26.4% of the

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world's population (Pew Research Center, 2011).

The Islamic finance industry development shows the total assets to US $ 2,254 billion in 2018 (ICD-Refinitiv, 2019a). From these amount, the banking industry segment occupies the most dominant share or around 70%, then *sukuk* (Islamic bonds) is for 19%, other Islamic financial institutions 5%; Islamic funding 4%; and *takaful* (Islamic insurance) 2%. The Islamic banking has 6% share of the global banking industry. The distribution of institutions and the Islamic financial industry by segment, as presented in Table 1, shows that the total Islamic financial institutions reaches around 1,447, consisting to 520 units for the Islamic banking institutions; then other financial institutions are around 592 units, while the Islamic insurance institutions are around 335 units. On the other hand, there are some *sukuk* and outstanding funding instruments reach to 2,887 and 1,701 units. The Islamic financial institutions have been operated in 72 countries, but the sukuk segment was adopted by 27 countries.

Table 1
The Number of Institutions and Countries that implementing the Islamic Finance in 2018

Segment	Institutions/ Instruments	States
Islamic Banking	520	72
Takaful	335	47
Other Islamic Financial Institutions	592	54
Sukuk	2.887	27
Islamic Funds	1.701	24

Source: ICD-Refinitiv (2019a)

Based on the global ranking, the Top Five for the Islamic finance industry development, are occupied by: Malaysia, United Arab Emirates (UAE), Bahrain, Saudi Arabia, and Indonesia (Thomson Reuter, 2019). However, based on the population potential, it appears that the development of the Islamic financial industry has not been balanced with its potential demand (Moslem population). Kettani (2010) estimated that the Moslem population in Indonesia is about 232.3 million; while Malaysia has around 20.2 million people. The total Moslem population in UEA is around 5.2 million, while in Bahrain is around 814 thousand, and in Saudi Arabia is around 31.4 million. Thus the number of the potential demand for Islamic financial services is not as a major factor to determine the development of this Industry.

Several previous studies have shown that the main factors to select the *halal*

products are: knowledge (Hariyana & Arsyianti, 2019; and Su'un et al, 2018) and regulations (Alam, Zainuddin, & Rizvi, 2018; Alam, 2013; and Pasiouras, Tanna, & Zopounidis, 2009). However, previous studies has not linked the knowledge and regulation variables. On the other hand, the regulation in the Islamic financial industry globally are less studied. This study links between the regulation and the knowledge to encourage the Islamic financial industry. It is expected to be able to answer the role of the knowledge (quality of human capital) in supporting the *best practice* in Islamic finance regulation.

ICD-Refinitiv (2020) has published the development indicators for Islamic finance, including its supporting ecosystem such as knowledge and regulation globally for 124 countries since 2013. To estimate of the quantitative development of the financial industry is carried out using index numbers. As the quantitative development indicator is the weighted index of Islamic financial institutions per country that provides Islamic financial products and services. The knowledge indicator index consists of two main sub-indicators, they are education and research. The regulatory indicator index consists of three factors: they are regulation, corporate governance, and the application of *syariah* principles.

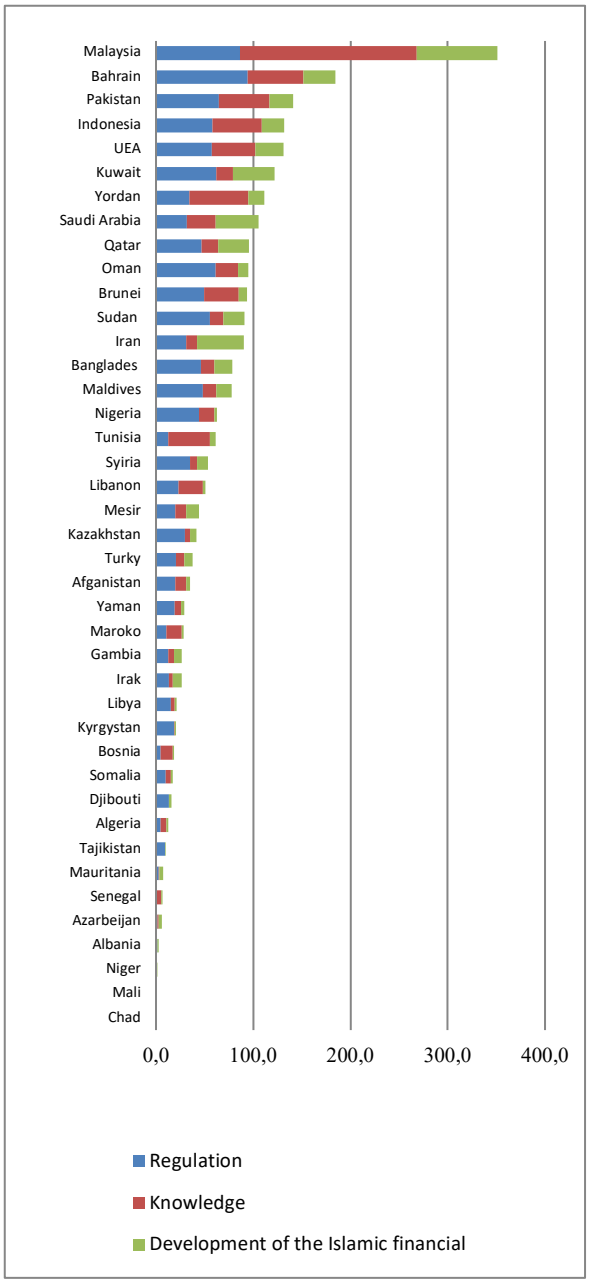
This study examines the influence of the knowledge and the regulation toward the Islamic financial industry development, especially in Moslem countries. The decision which are taken based on the classical theory decision making shows that the individual decisions are rational, considering to when the decision maker has complete information, so that, he knows the possibilities occurrence and to distinguish the available options. The decision is very dependent on the information available, or knowledge. However, if the information is not available or there is an asymmetric information, then the regulation is needed. The financial industry is one of them. They have almost much asymmetric information, including Islamic finance (Fakhfekh, et.al, 2016). This condition then creates a hazard for one party in Islamic banking where one of the hazards comes from the management of the profit-sharing fund. Thus, the model that was presented in this study is based on the theory of rational decision making, where decision making is highly dependent on the information (knowledge), however, because financial markets are imperfect, then the regulation is needed. This study is expected to contribute to the theory of financial industry decision-making, and at the same time may be used as the policy input in encouraging the development of the Islamic finance industry.

II. Discussion

Research result

This study uses secondary data obtained directly through the publication of ICD Refinitiv (2020) for the 2013-2019 period with an estimated number of 41 Moslem countries (Muslim majority countries). Figure 1 presents the average index of regulation, knowledge, and development of the Islamic finance industry of Moslem countries.

The Top 10 countries ranking for the best Islamic financial industry ecosystem, namely: Malaysia, Bahrain, Pakistan, Indonesia, UAE, Kuwait, Jordan, Saudi Arabia, Qatar, and Oman. However, from the regulation aspect of the Islamic finance industry it appears that Bahrain is in the best ranking. Meanwhile, from the aspect of knowledge, it is gained by Malaysia. Malaysia also is in the good place among the best in the Islamic finance industry development.



Source: Secondary data, processed

Figure 1
The average score of the regulation, the knowledge, and the Islamic financial industry development in Moslem countries 2013-2019

The correlation between the research variables is presented in table 2 shows a significant relationship between the three variables with the high correlation category. However, the value is smaller than 80%, so

that the model is free from multicollinearity problems. The highest correlation is the knowledge variable, it is gained 70% for the development of Islamic finance. Correlation between regulation and the development of the Islamic financial industry is 68%; and between the knowledge and regulation about 62%.

Table 2
Correlation between research variables

Correlation Probability	Kn	Reg	As
Kn	1.000		

Reg	0.629	1.000	
	0.000	-----	
As	0.700	0.682	1.000
	0.000	0.000	-----

Source: Secondary data, processed

The panel data regression is estimated through the equation:

Model 1:

$As_{1it} = \theta_0 + \theta_1 Reg1it + \theta_2 Kn1it + \mu_1 it$ .....(1)

Model 2:

$As_{2it} = \beta_0 + \beta_1 Reg_2 it + \beta_2 Kn2it + \beta_3 (Kn*Reg)it + \mu_2 it$.....(2)

Heteroscedasticity testing through the Glejser test shows that both models have heteroscedasticity symptoms, therefore the panel data equation estimation uses a cross section weight. A testing is applied to select the best model, whether the model follows the assumptions of the Common Effect Model (CEM), Fixed Effect Model (FEM) or Random Effect Model (REM). Chow test is used for the validity of the FEM assumptions. The basic for selecting the model is made by seeing the probability of chi^2 from the cross section data. When the probability of chi^2<0.05, the method used in panel data processing is the fixed effect. The best model for panel data is the common effect if the probability of chi^2 is> 0.05. Hausman test is used to determine the best model between FEM and REM.

Table 3 shows the results of the Chow test in choosing the best model. From all the models, the best one is the Fixed Effect Model, it is indicated from the cross-section probability of the chi-square statistic both models by 0.000.

Tabel 3
Chow Test

Model	Chi-square Statistic	Prob.	Model Selected
Model 1	40.548	0.000	FEM
Model 2	36.967	0.000	FEM

Source: Secondary data, processed

The Hausman test results show that the probability of random cross-section in equation (1) is 0.0015 and in equation (2) is 0.0057 or both less than 0.05, so that the best model chosen for the two equations is FEM.

The results estimation for Models 1 and 2 are presented in table 4.

Table 4
Estimation Results

Variable	Model 1	Model 2
Constant	8.963***	9.221***
Reg	0.092***	0.081***
Kn	0.092***	-0.009
Kn*Reg		0.002***
R^2	0.930	0.935
Adjusted R^2	0.918	0.924
Prob. F	0.000	0.000
DW stat	1.814	1.831

***Significant at alpha 0.01; ** alpha 0.05
Source: Secondary data, processed

The equations that are formed based on the estimation results in table 4 are:

$$As_{1it} = 8.963 + 0.092Reg1it + 0.092\ Kn1it + \mu_1 it \quad .....(3)$$

$$As_{2it} = 9.221 + 0.081Reg_2it - 0.009\ Kn2it + 0.002\ (Kn*Reg)it + \mu_2 it \quad .....(4)$$

Table 4 presents, in Model 1, the regulation and the knowledge have a significant positive effect on the development of the Islamic financial industry. The increasing 1 point in percentage of the Islamic financial regulatory will increase the development of Islamic finance by 0.092 points in percentage. The influence number of regulatory variables on the Islamic financial industry development equals to the influence number of the knowledge variable on the Islamic financial industry development.

In Model 2, the regulation has a significant positive effect on the development of the Islamic finance industry. The Increasing 1 point in percentage of the Islamic financial regulatory will increase the development of Islamic finance by 0.081 point in percentage. However, the knowledge variable does not have a significant effect on the development of the Islamic financial industry.

Table 4 shows that the interaction between the knowledge and the regulation will encourage the development of the Islamic finance industry in Moslem countries. Estimating the knowledge variables as the moderating regulation are classified into 4 categories, namely: pure moderator; quasi moderator; predictor moderation variable; and homologous moderator. Referring to Model 2, the moderating variable will show: (1) pure moderator if β_2 is not significant but β_3 is significant; (2) quasi moderator if β_2 and β_3 are significant; (3) predictor of variable moderation if β_2 is significant, but β_3 is not significant; and (4) moderator homologers if β_2 and β_3 are not significant. Based on these criteria, it can be concluded that the knowledge variable is a pure moderator to

influence the regulation on the development of the Islamic financial industry, where the knowledge variable coefficient (β_2) is not significant, while the interaction variable coefficient Kn.Reg (β_3) is significant.

Discussion

The research findings indicate that the knowledge has an effect on the the Islamic financial industry development. This is in line with the research which carried out by Hariyana & Arsyianti (2019); and Su'un et al. (2018). Knowledge in Islamic perspective is an important factor in the human thinking process. Even the first surah came down in Al-Quran is Qs. Al Alaq verses 1-5 that commands reading. A Moslem who is faithful and knowledgeable will be raised to several degree as the Qs. Al Mujadalah verse 11. Besides that there is a difference for people who know and do not know in the sight of Allah as Qs. Az Zumar verse 9. Allah also promises in one of the means of knowledge in Al-Qur'an as "a pen" (Mulyono, 2009).

Knowledge recommended in religion is useful knowledge and leads to the welfare of society. The criteria for useful science according to Juhari (2019) include: (a) bringing prosperity, benefit and convenience to human life; (b) provide information about truth, whether sensory truth, scientific truth or religious truth; (c) guide humans to be faith and more patient (*tawadhu*) and to lead a person to know the majesty of Allah and is aware of human weaknesses and limitations in existence. Meanwhile, Zubair (1997) argues that science is useful if it draws to be close to Allah *Subhanahu wa ta'ala* to help the community to achieve goals, provides guidance for others, and resolves community problems.

Several verses in the Al Quran show the benefits for educated people, for example in thinking process, such as: (1). understanding the signs of the only one and the greatness of Allah swt (Surah Al-Baqarah: 156); (2). taking the lessons (Qs. Al-Baqarah: 269; Qs. Az-Zumar: 9); (3). to be fear only to Allah swt (Qs. Fatir: 28); and (4). not get lost (Surah Al-A'raf: 179).

The practical benefits of science in life are that the educated people are the manifestation for human capital quality. The human capital theory explains that the educational process has a positive effect on productivity. Becker (1964) explained that human capital is not just a resource, but also will provide returns. The expense for developing the quality and quantity is as an investment activity. The theory says that the people with higher level of education will gain a better job and salary than those with lower level of education. If salary reflects the productivity, it can be said that the one with the higher level of education, will have

the productivity higher, this understanding will boost business performance. The basic assumption of human capital theory is when a person gains better education, then his income will be increasing. Every one year of education level increased, will support one's work ability and income level, but on the other hand it will delay for receiving salary for one year in attending the school. Apart from the delay in earning an income, someone who continues his education must pay the costs directly.

The human capital investment is the same as the other production investment, it also calculates the rate of return. The cost of human resources investment when they spend money to attend school, while the opportunity cost of education is the income received if not taking education. The benefits of education are the returns that will be received in the future after completing education. The benefits of investing in human capital are expected to outweigh the costs.

The contribution of human capital is analyzed from a micro and macro perspective. The micro perspective views that human capital is part of the production function of individuals, which in turn is related to the quality of human resources. Knowledge has an impact on the mastery of technology and innovation in the production process. The result of this knowledge is efficiency in the production process which has the potential to increase productivity. On the other hand, the competence will make individuals more expert in production process, including to encourage productivity.

The contribution of human capital at the macro level is analyzed from the micro contributions which are aggregated as part of national economic development. According to Lucas (1988) human capital has an internal and an external productivity effect. The increase in individual human capital is not only from the productivity of the individual but is part of the productivity of other workers at a certain skill level. Thus, the higher the quality of human resources, the higher the efficiency and productivity of a country.

Fitz-Enz (2009) argues that to measure the human capital takes three kind of approaches, namely: (1) the measurement based on human capital in relation to its contribution to company goals, (2) the measurement which relates to its impact on processes, (3) the measurement which relates to value added products.

The conventional method of measuring human capital according to Dae-Bong (2009) consists of: (1) Output-Based Approach. As the aim to analyze the relationship between human capital and economic growth. Some economists attempt

to measure human capital using school participation rates, the average length of schooling, and literacy rates; (2) Cost-Based Approach, it is the measurement based on the costs invested for humans; and (3) Income-Based Approach, the returns which is received by individuals as a result of educational investment. In Islamic finance, there are several ways to measure human capital, such as through the knowledge of Islamic finance, beside being measured from formal educational institutions, also with the research dissemination results, through conferences, seminars, and publications in the mass media.

ICD-Refinitiv data (2019a) shows that there are 968 providers globally for Islamic financial education, and around 1,786 peer-reviewed Islamic finance articles are written during 2016 and 2018. The dissemination of Islamic finance research results at seminars in 2018 reached to 302 events, at conferences about 137 events, and publication through news are around 13,095 publications.

The research findings also show that regulation variables effect the development of the Islamic financial industry, it is supported by some previous findings. Alam, Zainuddin, & Rizvi (2018) found that regulation has a significant positive effect on the performance of Islamic banking in the Asian region. The role of the government is able to encourage technical efficiency in Islamic banking (Alam, 2013). Furthermore, the findings from Pasiouras, Tanna, & Zopounidis (2009) show that the regulations and incentives that encourage market discipline and the higher supervisory, will raise cost and profit efficiency. The regulation indicators that being measured by ICD-Refinitiv (2019b) consist of the number of regulations which relates to *Islamic finance*, *sharia governance*, and *good governance*. These three indicators can certainly strengthen the Islamic financial industry. In 2018, there are 12 countries that have Central Shariah Board and about 44 countries have regulations on Islamic finance with sharing 1,166 *shariah scholarship* in Islamic finance.

Financial industry regulations arise as a result of information asymmetry. Information asymmetry is a condition in which one of the parties does not know the information about the product or service offered / requested causing failure in decision making. The consequence of asymmetric information, apart from disturbing the quality of contracts and monitoring, also creates adverse selection (Saunder and Cornett, 2006). Asymmetric information condition encourages the producer with more information (in this case the debtor) to have an incentive to act

detrimental to the other party (the bank). The debtor, for example, behaves in moral hazard by using credit or borrowed financing for other high-risk projects.

Profit loss sharing (PLS) financing in Islamic finance industry, namely *musyarakah* and *mudaraba* financing is naturally more risky than sale contract (*murabaha*) financing, because the rate of return is highly dependent on the income received by the fund management partner (*mudharib*); while in murabaha financing the bank's income has been determined by the agreement contract is made. Even though they both are *profit loss sharing* contracts, mudharabah is much more risky than musyarakah financing. *Mudharib* manages the funds of the bank by himself, and report his income. Mudharabah financing has the potential for agency problems (Chong & Liu, 2009). This agency problem occurs when an entrepreneur report his lower income. This problem comes because of the asymmetric information from fund manager, and may caused the adverse selection and moral hazards in Islamic Banking (Shinsuke, 2010; Safieddine 2009). From this, it appears that business ethics also becomes one of the profit loss sharing financing from Islamic banking (Farooq & Ahmed, 2013).

Several views point to the need for regulation in the financial industry are: to reduce transaction costs for consumers; increase efficiency through improving market distortions; increase consumer confidence; possible generation of positive externalities; and disclosure of reports that will increase the ability of consumers to make informed judgments, as well as increase contract transparency (Al-Jarhi, 2006). Meanwhile, Llewellyn (1999) argues that several reasons for bank consumers need regulation, namely: due to a lack of information and the ability of consumers to utilize information; a request for a reasonable level of assurance in dealing with financial companies; past experiences of bad behavior by financial firms; prevent malicious behavior by financial institutions as an alternative to claiming losses; and for lower transaction costs for consumers. Chapra and Khan (2000) put forward views on the rationale for regulation, namely: systemic considerations in particular the need to maintain an orderly payment system and ensure economic development; protect the interests of saving customers; and ensuring compliance with sharia principles.

The findings of this study also show that the knowledge variable is pure moderator between regulation and the development of the Islamic financial industry, or in other words, the knowledge strengthen the regulation effect toward the development of Islamic finance in Moslem

countries. Thus, regulation itself is not sufficient to encourage the development of Islamic finance but requires knowledge or human capital to properly implement it. So this is a crucial problem in the development of Islamic finance, where the results of Hidayat's research (2018) show that knowledge and awareness of the Islamic financial industry is still limited. Boediono (2006) concluded that the dissemination and to adopt the best practices from bank regulations, will continue to strengthen the Islamic banking and finance role in many countries. The findings of this study imply that the knowledge is very important in encouraging the effectiveness of Islamic financial regulation.

III. Conclusion

The regulation has a positive effect on the development of the Islamic financial industry. The asymmetry information in the Islamic financial industry that creates moral hazard requires regulation to protect interested parties for healthier and more efficient management. The knowledge has a positive effect on the development of the Islamic financial industry. The level of knowledge of Islamic finance is a determinant of the quality of human capital. The quality of human capital is reflected in the productivity and or added value of the Islamic finance industry. The level of knowledge is also a pure moderator between the regulation and the development of the Islamic finance industry, or in other words, the knowledge can strengthen the regulation effect on the development of Islamic finance in Moslem countries. The higher the quality of human capital in the Islamic financial industry, the better understanding of regulations and the more reinforcing the application of best practice regulations to encourage the development of the Islamic financial industry. Therefore, Moslem countries need to spread the understanding of Islamic finance in order to encourage the effectiveness of Islamic financial regulation. The Islamic financial management also must pay attention to the implementation of good regulations, good corporate governance and sharia governance.

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