



The Implementation of Analytical Hierarchy Process (AHP) Technique in Productive Financing Decision Making (A Case Study on Islamic Banks in East Java, Indonesia)

Dina Fitriisa Septiarini¹, and Dian Filianti²

Department of Islamic Economics, Airlangga University, Surabaya, Indonesia

Received: 20 Sep. 2016, Revised: 25 Oct. 2016, Accepted: 11 Nov. 2016, Published: 1 Dec. 2016

Abstract: Islamic banks have adopted Islamic principles as the basis for their business activities and in their activities of providing services in payment traffic. Islamic banks generally provide a number of service products for customers, one of which is financing, comprising productive financing and consumer financing. Productive financing from Islamic banking in Indonesia from 2013 to 2015 has increased by 18.33%. Such an increase was due to a feasibility analysis of prospective customers to minimize any potential financing problems. The aim of this study was to determine the primary criteria for productive financing decision-making based on the levels of interest using AHP technique. The result of this study shows that Shariah compliance could be the primary criteria in the productive financing decision making in Mandiri Shariah Bank and Muamalat Bank. Bank Rakyat Indonesia Shariah (BRIS) considers character to be the main criteria in productive financing decision making. The adoption of Shariah compliance as the primary criterion in two Islamic banks shows that those banks have in its operations implemented Islamic principles.

Keywords: Islamic Bank, Productive Financing, Decision Making Analysis, Analytical Hierarchy Process (AHP)

1. INTRODUCTION

Islamic banks have generally adopted Islamic principles as the basis for their business activities in providing payment traffic services. Islamic banking comprises Islamic banks and Islamic business units, and methods and processes of running the business (Act No 21, Year 2008).

Islamic banks generally provide a number of service products for customers, one of which is financing. Financing comprises Islamic bank activities in distributing finance to other parties than banks based on Islamic principles (Ismail, 2011:105). The financing distribution in real sectors consists of productive financing and consumer financing. Productive financing includes financing to meet general production needs, including business improvement in production business, trade and investment. Consumer financing includes financing to meet consumption needs, which is used up to meet the needs (Antonio, 2001:160).

Based on the needs, productive financing can be divided into two: working capital financing and investment financing. Working capital financing is one of, or a combination of cash financing, receivable financing and inventory financing (Antonio, 2001:161). Consumer financing is generally used to meet secondary needs. Secondary needs comprise additional needs that are qualitatively and quantitatively higher or more luxurious than primary needs, in the forms of both goods, such as food,



drinks, clothes/jewelry, housing, vehicles, and others, and services, such as education, health service, tourism, entertainment, and many others (Antonio, 2001:168).

Productive financing distributed by Islamic banking in Indonesia from 2013 to 2015 has increased to 18,33%. This increase has in fact been balanced with prospective customer feasibility analysis in order to minimize problematic financing potential. Banks conduct financing analysis to prevent early the possibility of customer's failure in payment.

Financing analysis has been one important criterion for Islamic bank in making appropriate decision for financing application approval or refusal. Ismail (2011:120) states that financing analysis is a method of reference for Islamic bank to determine feasibility of customer's financing application.

Sutarno (2004:92-94) states that, in deciding whether a customer is reliable for financing, banking generally conducts 5C analysis, including:

1. Character: the basic character of a person. Character is a consideration in risk identification.
2. Capital: a person or a business needs capital to start or improve their business.
3. Capacity: a person with good character will always think of paying their debts on the given time. To fulfil their payment duty, they should have sufficient capacity.
4. Collateral: property or wealth that can be used as guarantee for debt payment when in the future they fail to pay the debt.
5. Condition of Economy: an economic situation on some period of time where credit is given by the bank to prospective customer.

The 5C analysis—Character, Capacity, Capital, Collateral, and Condition of Economy—will determine prospective customers' financing feasibility, from which weighing and evaluation of prospective customers is conducted in relation to their financing application.

One important pillar in the development of Islamic financial institution is Shariah compliance. This pillar has been a major distinguishing factor between Islamic financial institution and conventional financial institution. Shariah compliance in bank operational includes product, system, technique and company identity, in addition to the product (Hakim, 2002).

The relevant method to explain the above procedure is Analytical Hierarchy Process (AHP). AHP is a support model for decision making developed by Thomas L. Saaty. This model for decision analyzes multifactor issues or complex multicriteria into a hierarchy. This AHP model is also used to evaluate bank performance in Croatia (Hunjak, 2001). In that study, a number of criteria were adopted to evaluate bank performance that is otherwise difficult to analyze. This AHP model enables utilization of various evaluative criteria to support decision making.

The Islamic bank statistics issued in June 2015 recorded 12 Islamic banks, 22 Islamic business unit, and 161 Islamic financing banks. This study focuses only on Islamic banks as the subjects of study, involving three Islamic banks with biggest assets in Indonesia as the sample of the study. The selection is due to the fact that Islamic banks have operated a more optimum productive financing analysis system.

This article presents the result of the study on the implementation of Analytical Hierarchy Process (AHP) technique on decision making for productive financing. The study was conducted on 3 Islamic Banks in East Java, because, based on the Islamic Banking Statistics in 2015, East Java Province is the third highest province in Indonesia that has distributed productive financing, to the amount of IDR 7,776,000,000. The method of the study on decision making process of productive financing is Analytical Hierarchy Process (AHP). The result of the study is expected to show the main criteria selected by the Islamic Banks in distributing productive financing and whether the selected criteria have reflected the operational principles of Islamic banking.



2. LITERATURE REVIEW

2.1 Financing

Mulyono (2004:4) explains that financing is the ability to conduct a purchase or loan with a promise for payment or postponement within given time period. The definition of financing is also described in Article 1 of Act Number 21 of 2008 of the Republic of Indonesia on Islamic banking.

Ismail (2011:108) states that financing provided by Islamic banks serves to help the society to meet their needs for their business improvement. Based on the nature of application, financing can be divided into two kinds (Antonio, 2001:160): productive financing and consumer financing. Based on the needs, productive financing can be divided into two types (Antonio, 2001:160):

1. Working capital financing, that is, financing to meet the needs of: a) production improvement, both quantitatively, meaning production amount, and qualitatively, meaning improvement on production quality; and b) trade or improvement of utility of place of goods.
2. Investment financing to meet the needs for capital goods and facilities closely related to them.

2.2 Financing Evaluation Alternatives

Ismail (2011:120-126) describes a number of necessary basic principles in decision making on prospective customers' financing application known as 5C principles. According to Ismail (2011:120), the 5C analysis comprises:

1.1.1 Character

This criterion describes a prospective customer's character and personality. In this study, this criterion is further specified into some sub-criteria for measurement indicators (Ismail, 2011; Ruwati and Pandi, 2014):

- a. Bank of Indonesia Checking (BI Checking)
- b. Information from other parties
- c. Good will and responsibility
- d. Attitude and character/lifestyle
- e. Payment commitment

1.1.2 Capacity

This capacity analysis is intended to identify prospective customer's financial ability in fulfilling their duty within given financing time period. This criterion is further specified into some sub-criteria for measurement indicators in this study (Ismail, 2011; Ruwati and Pandi, 2014).

- a. Checking salary payroll, bank account, and financial report
- b. Survey to prospective customer's business location
- c. Customer's income
- d. Capacity for installment payment
- e. Capacity for completing credit on appointed time

1.1.3 Capital

Capital comprises the total capital owned by a prospective customer or the total finance to be included in the project to be financed. This criterion is further specified into several subcriteria as measurement indicators in this study: (Ismail, 2011; Ruwati and Pandi, 2014).



- a. Customer financial report
- b. Advance payment
- c. Permanent income source
- d. Other business for income source
- e. Bank savings account

1.1.4. Collateral

Collateral includes guarantee provided by prospective customers for the proposed financing. This collateral criterion is further specified into several subcriteria for measurement indicators in this study (Ismail, 2011; Ruwati and Pandi, 2014).

- a. Marketability
- b. Stability of value
- c. Collateral selling price equal/higher than the credit limit
- d. Physical and non-physical collateral
- e. Collateral ownership supported with authentic documents

1.1.5 Condition of Economy

This criterion involves analysis of economy condition. This condition of economy criterion is further specified into several sub-criteria for measurement indicators in this study: (Suyanto et al., 2014; Ruwati and Pandi, 2014).

- a. Business/work/investment development
- b. Economy fluctuation
- c. Business stability in facing the market
- d. Legally and officially good business

1.1.6 Shariah Compliance

Shariah compliance means compliance to all Islamic principles in all activities as a form of Islamic financial institution characteristics. In Islamic banks, *Shariah* compliance is the core of Islamic bank integrity and credibility, including the duty to implement a whole (*kaffah*) and consistent (*istiqomah*) *Shariah* compliance (Ilhami, 2009).

Sutedi (2009:145) explains that *Shariah* compliance in Islamic banks is basically the implementation of Islamic principles, or *Shariah*, and its tradition into financial transaction and banking and other related business.

This *Shariah* compliance criterion is further specified into several subcriteria as measurement indicators in this study: (Amin, 2010; Sutedi, 2009; Fajrina, 2015).

- a. The business does not involve usury, that prospective customers own conventional bank accounts
- b. The business sector is rightful/allowed by the Islamic principles
- c. The business product is rightful/ allowed by the Islamic principles
- d. The business does not practice monopoly
- e. The business does not reduce scales/quantity of the product being sold
- f. The business does not mix the good and poor products
- g. The business provides clear product classification to prevent 'gharar' or violation of Islamic principles



1.1.7 Credit Scoring

Credit scoring is method for evaluating credit risk in consumer loan application. This method is used to classify whether those who apply for credits belong to good or bad consumers. Credit scoring attempts to classify diversity in consumer characteristics who apply for credit based on mistakes and dereliction of duty (Amarnath, 2004).

A high scoring value will reduce credit company risk value in providing credit service in determining calculation for acceptance or refusal of consumer's credit application based on the potential risks. Based on the established credit scoring model, the financial company will approve on credit application when the score of the application reaches above minimum threshold and refuse the application when the score is below the minimum threshold. Although the credit scoring can further be used as the company's policy determination, mistakes in prediction on the values of each consumer for credit facility may still occur. Therefore, to build a good credit scoring model, a sufficient historical data is necessary. One method to measure credit scoring is by adopting Fuzzy Expert System. Fuzzy collection for variable linguistic output credibility based on FICO includes perfect credit, superior credit, excellent credit, outstanding credit, good credit, average credit, some credit issues, impaired credit, serious credit issues measuring between 0% - 100% (Chen, 2006).

Table 2.1: Weight and Labels of Credibility Results

90%-100%	Perfect credit
80%-90%	Superior credit
70%-80%	Excellent credit
60%-70%	Outstanding credit
50%-60%	Good credit
40%-50%	Average credit
30%-40%	Fair credit
20%-30%	Some credit issues
10%-20%	Impaired credit
0%-10%	Serious credit issues

Source: Chen, 2006



Table 2.2: Rating Classification

Rating	Description
AAA	Very low risk loan instrument. Excellent payment rate; changes in financial condition, business or economy have no significant influence on investment risk.
AA	Very low risk loan instrument. Excellent payment rate; changes in financial condition, business, or economy may influence on investment risk, but not too high.
A	Low risk loan payment. Good payment rate, although changes in financial condition, business or economy may increase investment risk.
BBB	Suffice payment rate. Changes in financial condition, business or economy are very likely to increase investment risk compared to the higher category.
BB	Investment. The company has the capability to pay for the interest and base loan, but the capability is affected by changes in economy, business and financial condition.
B	Loan instrument has investment risk. Insufficient protection for payment rate due to economy, business and financial condition.
C	Speculative financial instrument with high possibility of bankruptcy.
D	Financial instrument is on default/bankrupt.

Source : www.Pefindo.com

Companies with AAA rating show the lowest credit risk. Companies with C rating have fairly high credit risk. The data shows the picture of credit risk rates.

2.3 The difference between Credit Scoring and Analytical Hierarchy Process (AHP) Technique

Credit scoring is a system used by a bank or other financing institutions to help determine whether a customer is reliable for a loan. Credit scoring provides description for loan provider on the amount of credit risk and suitability of prospective customers. In Indonesia the present data on debtor credit report can be seen from data in Bank of Indonesia under Credit Information Department management. This credit report is useful for both the creditor in analysing customer's credit application, and to debtor particularly Small and Medium Entrepreneur debtors. The final evaluation result with credit scoring, that is value rates, show the credit risk rate of each customer which will help in deciding whether the prospective customer's financing proposal be approved or refused.

The decision for financing prospective customer using Analytical Hierarchy Process (AHP) technique can be an alternative for data processing with several criteria that will result in information suitable for management need. The AHP technique can count for validity to the limit of inconsistency tolerance of several criteria and alternative chosen by decision maker and hierarchical structure, as a consequence of selected criteria, to the deepest subcriteria. The final result of AHP evaluation is value rates on each criteria and subcriteria that help Islamic bank analyst to conduct financing evaluation that the rates show which criteria is of top priority in evaluation of prospective customers. Thus, credit scoring with financing decision evaluation using Analytical Hierarchy Process (AHP) technique is distinctive in evaluation scoring method.



2.4 Analytical Hierarchy Process (AHP)

AHP as a support model for decision making has been developed by Thomas L. Saaty. This support model for decision describes complex multifactor or multicriteria issues into a hierarchy. Three main principles need consideration (Saaty, 2008) including: 1) hierarchy structuring principle, 2) priority determination principle, and 3) logical consistency principle.

The steps in AHP method (Suryadi, 1998) include:

1. Define problems and determine desired solution
2. Design hierarchical structure initiated with main objectives/goal
3. Design pair comparison matrix that describes relative contribution or impact of each element to the goal or criteria of the higher level.
4. Make pair comparison to achieve total evaluation rate of $n \times [(n-1)/2]$, with n is the number of element being compared.

The result of pair comparison of each element with the score of 1 to 9 shows the level comparison of an element.

5. Count the *eigen* value and conduct consistency test. When inconsistency occurs, data collection is repeated.
6. Repeat steps 3,4 and 5 for each hierarchical level.
7. Calculate *eigen* vector of each pair comparison matrix.

The value of each element determines priority of elements from the lowest hierarchy level to achieve the goal. Calculation is conducted by summing up the value of each matrix column, dividing each column value with the total given column to obtain matrix normalization and adding the values from each row and dividing them with the total elements to get average value.

8. Checking hierarchy consistency

The AHP measures consistency ratio from consistency index.

Table 2.3: Analytical Hierarchy Process (AHP) Value Scale

Value scale (n)	Definition
1	Both elements are equally important
3	One element is slightly more important than the other
5	One element is more important than the other
7	One element is far more important than the other
9	One element is absolutely more important than the other
2,4,6,8	The mean between two adjacent value consideration
Inversion	If element A has one higher value when compared to element B, then element B has inversed value when compared to element A

Source: Saaty, 2008



Table 2.4: Similarities and Differences with Previous Studies

No	Description	Similarities	Differences
1	Analysis and Improvement of Credit Application Feasibility Evaluation in Islamic Banks (Puspitasari and Singgih)	Adopt AHP method	Indicators did not use the 5C terms .1 Direct case studies on 5 prospective debtors .2
2	Customer Perception on 5C Aspects to Determine Credit Approval Feasibility for Customers of PT BPR Nusamba Ampel, Salatiga Branch (Ruwati and Afandi)	5C indicator Analysis for financing	Subjects for study were conventional BPR .1 Use Cochran Q test analysis technique .2
3	5C Analysis on Musyarokah Financing in BMT Walisongo (Nugroho)	5C indicator Analysis for financing	Subjects of study were BMT .1 Use descriptive data analysis .2
4	The Influence of DPK, 5C evaluation on credit, and credit quality on decision for credit approval in Bank Pembangunan Bali (Oka et al.)	5C indicator Analysis for financing	Use multilinear regression analysis techniques .1 Subjects of study were conventional banks .2
5.	The Use of AHP (Analytical Hierarchy Process) in the Evaluation of Financing Implementation Based on Financing Principles Analysis in PT BPRS Amanah Ummah (Faaziz)	Adopt AHP method	The indicators being studied include both 5C criteria and the business .1 /No detailed descriptions or study of sub-criteria for each criteria .2
6.	AHP Based Model For Bank Performance Evaluation and Rating	Use AHP method	Performance evaluation as research indicators .1 Subjects are banks in Croatia .2

Sources : Summary from various sources

2. RESEARCH METHOD

3.1 Research Approach

The study adopts descriptive qualitative study with case study method, which, according to Sugiyono (2009:14), is based on postpositivism philosophy utilized to study the natural object condition (as opposed to experiment), that the researcher is the key instrument, the samples of data source is purposive and snowball, the data collection technique is triangulation (combination), inductive/qualitative data analysis, and the qualitative results put more emphasis on meaning rather than generalization.

3.2 Data Types and Data Source

1. Primary Data

The primary data were obtained from interviews with three informants from each of the three Islamic Banks in East Java, whose assets are the biggest in Indonesia, the questionnaires



were filled by the Islamic Banks productive financing decision makers, and observation was conducted in the Islamic Banks.

2. Secondary Data

The secondary data were obtained from documents of the 3 Islamic Banks in the forms of company profiles, product leaflets, product catalogues, and customer display data, and literature studies of Islamic economy.

3.4 Data Collection Procedure

1. Interviewing

Interview with informants were conducted to obtain information on 4 Islamic Banks profiles and backgrounds with the biggest in Indonesia, and brainstorming was conducted for the subcriteria.

2. Observing

Field observation was intended to observe the productive financing decision making process in 4 Islamic banks with the highest assets in Indonesia, and to record data during field observation in order to obtain complete research data.

3. Administering Questionnaire

Questionnaires were administered to obtain data on the most influential criteria in approval of productive financing for productive customers. The questionnaires comprise values of subcriteria for the decision for productive financing approval by productive financing decision makers in 4 Islamic Banks with the highest assets in Indonesia.

3.5 Data Validation

Triangulation for credibility test comprises data checking from various sources in various method and time. The data validation technique of the study includes source and technique triangulations. Data validity in Analytical Hierarchy Process (AHP) technique is achieved when the data is consistent. Data validity was measured by checking consistency of value weighing with Consistency Index, that the CI value of the whole major criteria and each of the subcriteria within one criterion shows acceptable consistency value of $\leq 10\%$ (Saaty, 2008). When inconsistency occurs, data collection is repeated.

3.6 Analysis Technique

Data analysis technique used in this study is Analytical Hierarchy Process (AHP) which includes (Suryadi, 1998):

1. Design pair comparison matrix describing relative contribution or influence of each element on the goal or criteria of one level above.
2. Conduct pair comparison to obtain the total evaluation sum of $n \times [(n-1)/2]$, with n is the number of element being compared.
3. Calculate eigen value and test its consistency
4. Calculate eigen vector of each pair comparison matrix
5. Check hierarchy consistency
6. Put criteria in order of weight values.

4. DISCUSSION

- a. Islamic Bank Profiles
- b. Profile of Mandiri Islamic Bank (BSM)



Table 4.1: Profile of Mandiri Islamic Bank

Company Title	:	PT. Bank Syariah Mandiri (Ltd.)
Address of Surabaya Branch	:	Jl. Raya Darmo No. 17 Surabaya
Phone	:	(031) 5674848
Founding Legality	:	Decree of Governor of Bank of Indonesia No. 1/24/ KEP.BI/1999, 25 Oktober 1999. Decree of Senior Governor Deputy of Bank of Indonesia No. 1/1/KEP. DGS/ 1999
Founding Year	:	25th October 1999
Service Offices	:	864 offices, spread over 33 provinces throughout Indonesia
Products	:	Consumer Financing, Gold, Hajj & Pilgrimage to Mecca, Service Products, BSM Priority Service

Source : www.Shariahmandiri.co.id, accessed on 23rd September 2016

i. Muamalat Bank Profile

Table 4.2: Muamalat Bank Profile

Company Title	:	PT. Bank Muamalat Indonesia
Address of Surabaya Branch	:	Jl KH Mas Mansyur, Nyamplungan
Phone	:	(031) 3545250
Founding Legality	:	Decree of Minister of Finance, Republic of Indonesia No.1223/MK.013/1991 Decree of Minister of Finance No. 430/KMK.013/1992
Network	:	312 stands spread in 33 provinces, supported by a network of more than 3.800 Online Post Offices/SOPP throughout Indonesia,
Founding Year	:	1st November 1991
Products	:	Money transfer, deposit, savings, financing, insurance bank, share-E card

Source : www.bankmuamalat.co.id, accessed on 23rd September 2016

ii. Profile of Bank Rakyat Indonesia Shariah (BRIS)

Table 4.3: Profile of BRI Shariah

Company Title	:	PT. Bank BRI Shariah
Address of Surabaya Branch	:	Jl Diponegoro No. 16D Surabaya
Phone	:	(031) 5611223
Founding Legality	:	Decree of Bank of Indonesia 0.10/67/KEP.GBI/DpG/2008
Founding Year	:	17th November 2008
Products	:	Islamic savings, islamic money transfer, islamic deposit, and financing

Source : www.briShariah.co.id, accessed on 23rd September 2016



c. Measurement Scale

i. Mandiri Islamic Bank (BSM)

Subcriteria in this study were determined from the literature and theoretical review confirmed through interview with the productive financing decision makers in Mandiri Islamic Bank. The result of the interview shows that Mandiri Islamic Bank adopts all criteria and subcriteria in the theory in analyzing prospective customer's financing feasibility. Interview with the Mandiri Islamic Bank analyst shows that this bank puts priority on BI Checking in analysing prospective customers for financing, as described by Mr. Doni:

"The first [criteria] is surely the character; [of which] we refer to BI checking, if BI checking shows poor collectability, we refuse [the application] straightaway."

ii. Muamalat Bank

Subcriteria in this study were determined from the literature and theoretical review confirmed through interview with the productive financing decision makers in Muamalat Bank. The result of the interview shows that Muamalat Bank adopts all criteria and subcriteria in the theory in analyzing prospective customer's financing feasibility. The main factor put into consideration by Muamalat Bank is the Islamic (Shariah) factor of the business sector to be financed. The types of sectors to be financed have been decided by the central Muamalat Bank based on whether or not the business is allowed in Islam religion, as shown from interview with Ms. Eni:

"The focus of Shariah is that you are not to do a business you are not capable of, for example if you are not capable of flight business, you are not approved to do so, for the analysis will show poor result."

"Tobacco, slaughter house, which is clearly not allowed, will not be approved."

"For gharar (conventional) hotels, of which we cannot be specific about usage. Islamic hotels are specific about usage, so we can approve."

"Restaurants are approved provided that they obtain the Islamic Scholar Board (MUI) standardization."

"Yes, we put Shariah compliance as the top priority."

iii. Bank Rakyat Indonesia Shariah (BRIS)

Subcriteria in this study were determined from the literature and theoretical review confirmed through interview with the productive financing decision makers in BRI Shariah. The result of the interview shows that BRI Shariah adopts all criteria and subcriteria in the theory in analyzing prospective customer's financing feasibility. In the analysis, BRIS put priority on BI Checking and collateral factors to analyze prospective, as explained by Ms Kiki:

"[we conduct] BI checking first, to prevent blacklist customer to obtain approval, personal identification report is analyzed to obtain management approval."



d.Result Interpretation.

Table 4.4: Harmonic Mean

Criteria	BSM		Muamalat Bank		BRIS	
	Indicator	Harmonic Mean	Indicator	Harmonic Mean	Indicator	Harmonic Mean
Character	Good will and responsibility	0.24003	BI Checking	0.25043	BI Checking	0.41468
Capacity	capacity of installment payment	0.36684	capacity of installment payment	0.18857	survey to business site	0.20893
Capital	permanent income source	0.41051	permanent income source	0.25569	prospective customer financial report	0.37991
Collateral	the collateral selling value is equal or higher than the credit limit	0.25189	Marketability	0.26615	the collateral selling value equal or higher than the credit limit	0.25095
Condition of Economy	business stability in facing market	0.44027	legally and officially good business	0.2859	business stability in facing market	0.23419
Shariah Compliance	business sectors to finance are permitted by Islamic law	0.27136	business sectors to finance are permitted by Islamic law	0.27662	business sectors to finance are permitted by Islamic law	0.20633
Inter-criteria	Shariah Compliance	0.34662	Shariah Compliance	0.31652	Character	0.28788

Source : *Questionnaire result analysis*

i. Analysis of Priority Determination of Mandiri Islamic Bank on productive financing decision

Table 4.4 shows the harmonic mean of each criteria and intercriteria with the highest value from the three Mandiri Islamic Bank informants. The character harmonic mean of good will and responsibility is 0.24003, capacity of the installment payment capacity is 0.36684, capital of the permanent income source is 0.41051, collateral of the selling value of collateral equal or higher than the credit limit is 0.25189, condition of economy of the business stability in facing market is 0.44027, Shariah compliance of the business sector to be financed be allowed by Islamic principles is 0.27136. The three informants put Shariah compliance as the most important criteria with the value of 0.34662.

ii. Analysis of Priority Determination of Muamalat Bank on productive financing decision

Table 4.4 shows the harmonic means of each criteria and intercriteria with the highest value from the three Muamalat Bank informants. The character harmonic mean of BI Checking is 0.25043, capacity of the installment payment capacity is 0.18857, capital of the permanent income source is 0.25569, collateral of marketability is 0.26615, condition of economy of legally and officially good business is 0.2859, Shariah compliance of the business sector to be financed be allowed within Islamic law is 0.27662. The three informants put Shariah compliance as the most important criteria with the value of 0.31652.



iii. Analysis of Priority Determination of BRIS on productive financing decision

Table 4.4 shows the harmonic means of each criteria and intercriteria with the highest value from the three BRIS informants. The character harmonic mean of BI Checking is 0.41468, capacity of the survey to business site is 0.20893, capital of prospective customer financial report is 0.37991, collateral of the selling value of collateral equal to or higher than credit limit is 0.25095, condition of economy is business stability in facing market is 0.23419, Shariah compliance of the business sector to be financed be allowed within Islamic law is 0.20633. The three informants put character as the most important criteria with the value of 0.28788.

4.4 Analysis of Result

Shariah Compliance has been the primary criterion to be considered by Mandiri Islamic Bank and Muamalat Bank in the analysis of productive financing decision making of prospective customers. Shariah compliance as the primary criterion has become the distinctive feature of Islamic banking that runs the operational activities based on Islamic banking company operational standard (SOP) and also distinguishes the Islamic bank and conventional banks. Islamic banks put emphasis on Shariah compliance in productive financing approval to maintain the Islamic bank distinctive positioning in contrast to conventional banks that do not adopt Islamic principles in their operational activities. Any Islamic banks that do not adopt Shariah compliance as a criterion in financing will put at risk their reputation, credibility and integrity of Islamic values since the public will consider them as having no difference with conventional banks.

Bank Rakyat Indonesia Shariah (BRIS) consider character as the main criterion in the analysis of productive financing decision making for prospective customers. BRIS is relatively newly operated Islamic banking compared to the other two Islamic banks, that in the analysis it has not fully adopted Shariah as the primary factor. Besides, the indicator or Shariah compliance subindicator itself has detailed evaluation method and an analyst may find difficulty with it, that character is taken as the primary criteria in analysis of productive financing decision making since character will show customer's general attitude and behaviour and financing commitment that failure of payment may be prevented due to customer's bad habits.

5. CONCLUSION

Based on the result of data analysis with Analytical Hierarchy Process (AHP) technique, the study concludes that Shariah compliance has been taken as the primary criterion in the productive financing decision making in Mandiri Islamic Bank and Muamalat Bank. Bank Rakyat Indonesia Shariah (BRIS) considers character as the primary criterion in the productive financing decision making. The use of Shariah compliance as the main criterion in the two Islamic banks has shown that those banks have implemented Shariah principles in their operational activities.

REFERENCES

- [1] Amarnath, K.N. 2004. *Statistical Methods in Consumer Credit Scoring*. Cranes SoftwareInternasiaonal Ltd: Product Analyst.
- [2] Amin, A. Riawan. 2010. *Menggagas Manaajemen Shariah, Teori dan Praktek The Celestial Management*. Jakarta: Salemba Empat.
- [3] Antonio, Muhammad Syafii. 2001. *Bank Shariah Dari Teori ke Praktik*. Jakarta: Gema Insani Press.
- [4] Chen, Lee, Fuzzy *Adaptive Networks in credit rating and loan approval, Proceedings of the 10th WSEAS Internasional Conference on APPLIED MATHEMATICS*. Dallas, Texas, USA, November 1-3, 2006.



- [5] Fajrina, Dyas Nur. 2015. *Analisis Penerapan Bisnis Berbasis Syariah Pada Wirausaha Muslim*. Semarang: UIN Walisongo.
- [6] Hunjak, Tihomir dan Drago Jakovc(ovic). 2001. *AHP Based Model for Bank Performance Evaluation and Rating. Proceedings of 6th ISAHP*. Berne, Switzerland, Agustus 2-4, 2001.
- [7] Ismail. 2011. *Perbankan Syariah*. Jakarta: Kencana Prenada Media Group.
- [8] Mulyono, Pudjo Teguh. 2004. *Manajemen Perkreditan*. Yogyakarta: Salemba Empat.
- [9] Republik Indonesia. 2008. *Undang-Undang No 21 Tahun 2008 tentang perbankan Syariah*. (online),
- [10] Ruwati dan Afandi, Pandi. 2014. *Persepsi Nasabah Pada Aspek 5C Untuk Menentukan Kelayakan Pemberian Kredit Pada Nasabah PT BPR Nusamba Ampel Cabang Salatiga*. Jurnal STIE Semarang. Vol 6, no.1: 59-64.
- [11] Saaty, Thomas. 2008. *Decision Making With The Analytic Hierarchy Process. International Journal Service Science*. Vol.1 no.1 : 85-86.
- [12] Sugiyono. 2009. *Metode Penelitian Bisnis*. Bandung: Alfabeta.
- [13] Suryadi, Kadarsah dan Ali Ramdhani. 1998. *Sistem Pendukung Keputusan, Suatu Wacana Struktural Idealisasi dan Implementasi Konsep Pengambilan Keputusan*. Bandung : PT Remaja Rosdakarya Bandung.
- [14] Sutarno. 2004. *Aspek-Aspek Hukum Perkreditan Pada Bank*. Bandung: Alfabeta.
- [15] Sutedi, Andrian. 2009. *Perbankan Syariah Tinjauan dan Beberapa Segi Hukum*. Bogor: Ghalia Indonesia.
- [16] Suyanto, dkk. 2014. *Penerapan Metode AHP Pada Sistem Penunjang Keputusan Kelayakan Pemberian Kredit*. Seminar Nasional Teknologi Informasi dan Multimedia.
- [17] <http://www.bankmuamalat.co.id/profil-bank-muamalat> (diakses tanggal 23 September 2016)
- [18] <http://www.bi.go.id> (diakses tanggal 12 Juni 2016)
- [19] <http://www.briShariah.co.id/?q=sejarah> (diakses tanggal 23 September 2016)
- [20] <http://www.ojk.go.id/data-statistik-perbankan-Shariah> (Diakses tanggal 28 Juni 2016)
- [21] <https://www.ShariaHmandiri.co.id/category/info-perusahaan/profil-perusahaan/profilperusahaan-profilperusahaan/> (diakses tanggal 23 September 2016)