



Implementation of the Low-cost Islamic Peer to Peer Financing Model in Student Entrepreneurship Financing Applications

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ABSTRACT

Currently, there are many applications of technology-based financial funding, and some have even been legalized by the Financial Services Authority (OJK), which is called fintech. In reality, it is still burdensome for business actors because of the difficulty in paying the installments that must be borne, whereas the business will have funds only if the goods they are selling are sold. In the Siliwangi University campus environment, students are required to take entrepreneurship lectures. So far, the learning process activities have only been in the form of concepts and theories; this has become an obstacle to field practice. In the field of entrepreneurship, these students become business actors. However, there is a difficulty in practicing entrepreneurship since students' capital is limited. On this issue, the campus is obliged to facilitate the creation of an entrepreneurial learning process as an investor. To connect the entrepreneurship learning process, information technology is needed. The application is intended to assist in the process of providing business capital by applying the concept of Islamic economics, namely the Islamic peer to peer financing model. This model provides flexibility between business actors and investors in providing financial assistance with potential profits and losses shared together. Based on the above problems, to support student entrepreneurship programs, it is necessary to apply financing for entrepreneurship program assistance based on the Islamic peer to peer financing model. From the results of testing the application can be applied to support the student entrepreneurship learning process based on the respondent's score of 82.08333 which indicates that the System Usability Scale value for this application is Acceptable.

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1. Introduction

In running their business, business owners are greatly influenced by financial literacy, namely a person's skills to make decisions and effective strategic policies in financial management. Financial literacy can help business actors with business management from budget preparation, planning, and financial knowledge to achieve business financial goals [1][2][3].

The results of a World Bank survey show that Indonesia's financial literacy in the business segment at the level of Micro, Small and Medium Enterprises (MSMEs) is very low compared to the Philippines, with a financial literacy rate of 27%. Compared to our neighboring countries, the highest level of financial literacy is Singapore (98%), which is a model for growth of MSME-based economy, then Thailand 73%, Malaysia 66%, while Indonesia has a financial literacy level of 20%. This shows the attitude of business actors in Indonesia who only see the results of their business without taking into account the importance of financial literacy [4].

Most of the MSME business actors in Indonesia always have difficulties when rotating the financial management of their business when they are going to carry out the production process, and the policy taken by business actors is to apply for a credit loan to the bank. This is why the profit earned will always be small because they have to pay interest in bank installments. In fact, there are many cases where the burden of paying installments causes the company to suffer losses, and some run out of business [5].

The government is trying to help business actors by empowering MSMEs, as stipulated in Law Number 20 of 2008, to increase the role of Micro and Medium Enterprises to increase regional development, create jobs, equalize regional incomes, increase economic growth, and accelerate the alleviation of people from poverty. Because of this law, Rural Credit Banks have sprung up to provide access to soft capital loans in installments. In 2018, based on data from the Ministry of Cooperatives and Small Enterprises, the number of MSMEs reached 57,895,721 units. This shows that the potential for Indonesia's economic progress will grow [6][7].

In the process, the customer's role in banking is to deposit the funds they have to the bank, with two purposes, namely savings and investment. If customers save their money in the bank as savings, they will only get relatively small interest on their savings every month. Meanwhile, if the customer invests, the bank will provide a profit sharing according to the ratio determined based on the agreement [8].

If the investor wants to invest in the Islamic banking concept, they will meet with creditors who will apply for funding. In the process of applying for a loan, the funds must be cleared, so that the profit sharing is mutually agreed to get the profit sharing [9]. Because students do not yet have any experience in entrepreneurship, it will be complicated for banks to provide the capital proposed by students.

Peer to peer is a mechanism for a pattern of cooperation between one party seeking mutual benefits. Peer to peer lending involves lenders or investors providing capital directly. In practice, this is often done in an informal form, but there are many problems due to lack of trust. In Islam, peer to peer investment patterns can be found in *muḍārabah*, *musyārahah*, *muzārah* and *musāqah* schemes [10][11]. In this case, the capital provider is Siliwangi University. Along with the development of technology to increase trust, applications have been created to bring together investors and businessman, lending activities have also developed online in the form of platforms through a platform or marketplace.

Peer to peer lending is an online market where lenders can lend to individuals or small businesses (borrowers). In this case, borrowers can get funding from many individuals [12][13], so this method can be applied to students in carrying out entrepreneurship in campus development.

The problems above are a challenge for students to dive straight into entrepreneurship. When students are faced with capital, it will be very difficult to obtain funding from banks due to their minimal experience in entrepreneurship. Siliwangi University provides an assistance program for students who are interested in entrepreneurship which will have the potential to become MSMEs in providing capital, thus triggering students' interest in exploring the field of entrepreneurship before going directly into society with businesses funded by banks. In developing the application model system, Siliwangi University campus became the provider of the capital. This program does not yet have a financing concept model and application to manage it. This research proposes the creation of a financing application for entrepreneurship program assistance based on the Islamic peer to peer financing model, where business proposals proposed by students will be selected based on business development potential. Capital will be distributed by signing a contract for a predetermined period with the system predicting profits and capital.

2. Materials and Method

2.1. Pattern Financial Institutions

Financial institutions are those that carry out activities in collecting and channeling funds to the public, one of which is a bank, in the process using both sharia and conventional principles. One of the financial institutions is the Bank, a business entity that collects funds from the public in the form of savings and distributes them to the public in the form of credit to regulate financial circulation to advance the economy [1].

2.2. Peer to Peer Lending

The Peer-to-peer model is a pattern of cooperation between two parties to seek mutual benefits in the capital transaction process with an agreement on profit sharing. In Sharia, peer-to-peer investment patterns can be found in *muḍārabah*, *musyārahah*, *muzārah*'ah and *musāqah* schemes.

The lender's Peer-to-peer process on the platform has achieved much better results than investing in conventional bank deposit programs with low interest. The advantage of Peer-to-peer is that administrative costs and expenses are relatively low, so it is very profitable to invest with this method. Peer-to-peer implementation matches the agreement in bearing the loss caused by business constraints [5].

2.3. Research Method

Application development is carried out using a peer-to-peer lending model approach that helps various parties involved in running a business. In addition, logic model theory is implemented to formulate alternative business empowerment concepts. The stages of the Logic model have six components, namely situation, input, activities, output, outcomes, and external factors [14][15] as shown in Figure 1.

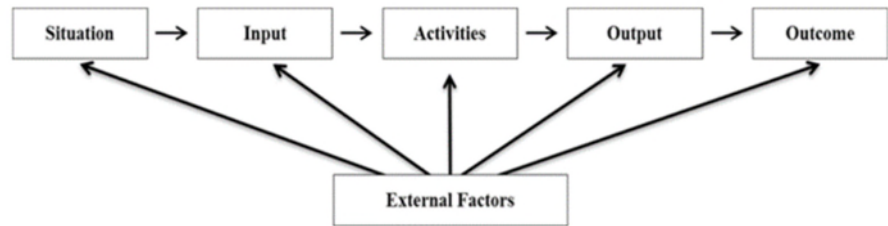


Figure 1 Component Logic Models

The indicators of the developed logic model components are as follows.

1. **Situation.** The challenge for students in entrepreneurship is capital, that is, students have difficulty accessing funding from banks. This is due to bureaucracy and the complexity of strict requirements, so that the businesses cannot provide bankable requirements. Financial institutions should pay more attention to facilitating access to cheap and efficient funding.
2. **Input.** Access to entrepreneurial capital uses the Islamic peer to peer financing model, a collaboration system and empowers the resources owned by students.
3. **Activities.** Muḏhārabah, muqayyadah, and musyārah contracts are sharia cooperation systems to achieve optimal and fair business continuity from various parties, namely institutions, business actors and capital providers. The Islamic peer to peer financing model providing a mutually beneficial investment cooperation system.
4. **Output (result).** The Islamic peer to peer financing model provides an easy alternative to accessing capital for students. Because this model uses an investment cooperation system that will reduce operational expenses so that the total production costs will be lower. In addition, the manager will provide profit sharing in accordance with the results of the business that has been carried out to investors who invest their capital.
5. **Outcomes (impact and benefits).** The impact and benefits for students are empowerment due to easy access to funding with the Islamic peer to peer financing model, namely by achieving maximum business acceleration.
6. **External Factors.** This capital limitation causes non-current business cash flow, so it is possible for the business to smooth cash flow and develop its business by obtaining funding from investors within a certain timeframe.

3. Result and Discussion

The terms sharia economics in the financing process include the terms mudarib and shohibul maal. This application is a web-based application that can be used by mudarib (students) who want to become entrepreneurs by submitting proposals for business capital funding which is given to shohibul maal (campus institutions). These proposals will be selected using an Islamic peer-to-peer financing model approach that will assist in the financing process submitted by students. From the proposals received, they will be financed, given a contract, and an agreement will calculate the capital and profits. Capital will be given to Siliwangi University as an investor, and the profit will be shared according to the sharia agreement. Likewise, if the business fails, it will be discussed in the contract to provide the best solution. In general, this application has the main components, including registration, ujroh or manager's wages, return of capital, sharing of business results, and the Islamic peer-to-peer model is shown in the use case in Figure 2.

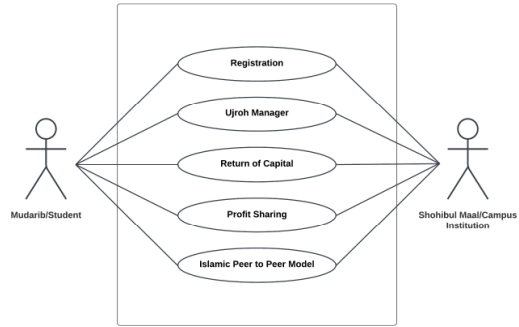


Figure 2 Use Case Diagram

Every component in the use case (Figure 2) belongs to both users, except for the return on capital component which is only in mudarib users. From this use case, further development related to the application is created by producing a class diagram as shown in Figure 3.

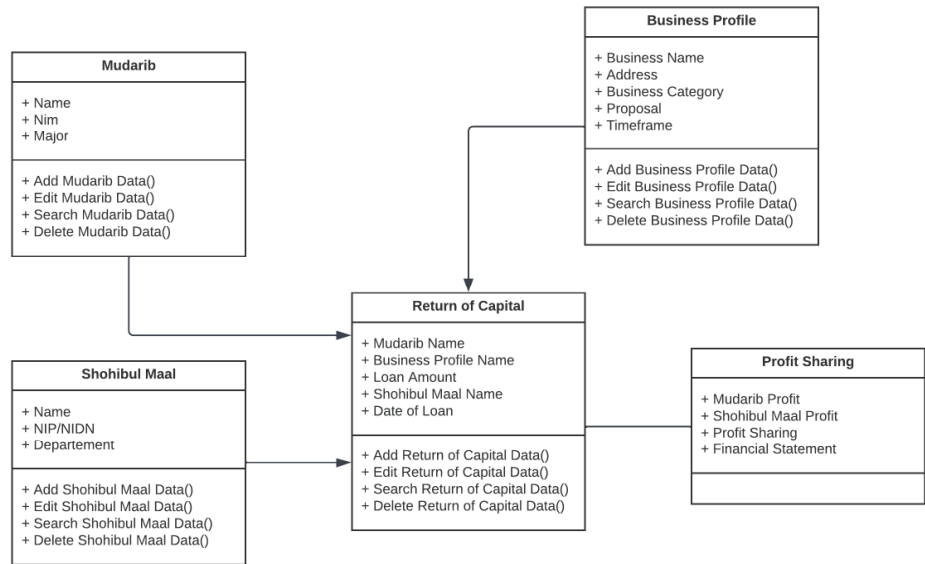


Figure 3 Class Diagram

The class diagram becomes a reference in developing the application, so that in its implementation it produces the main parts of the application as follows:

1. Registration and Login. The registration section was created by considering the two roles that are application users, namely mudarib and shohibul maal. The table below shows the differences between the two roles. The mudarib registration display can be seen in Figure 4.

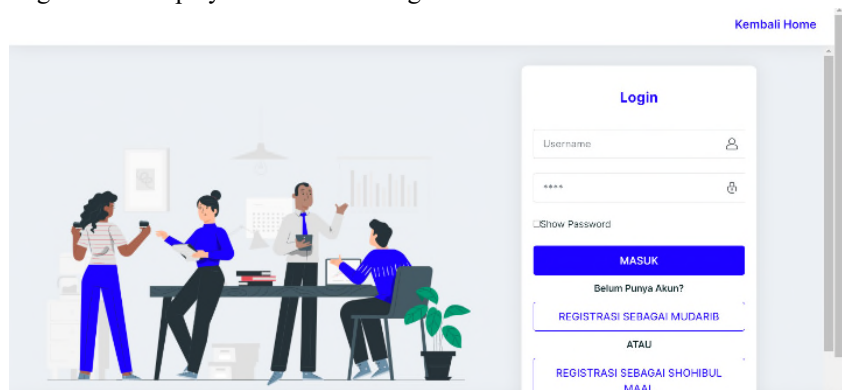


Figure 4 Login

2. The Process of Providing Capital by Shohibul Maal. Before a capital granting transaction is carried out by an institution or shohibul maal, the mudarib must first register its MSMEs in the application so that the registered business will appear on the list of existing businesses at the shohibul maal as shown in Figure 5.

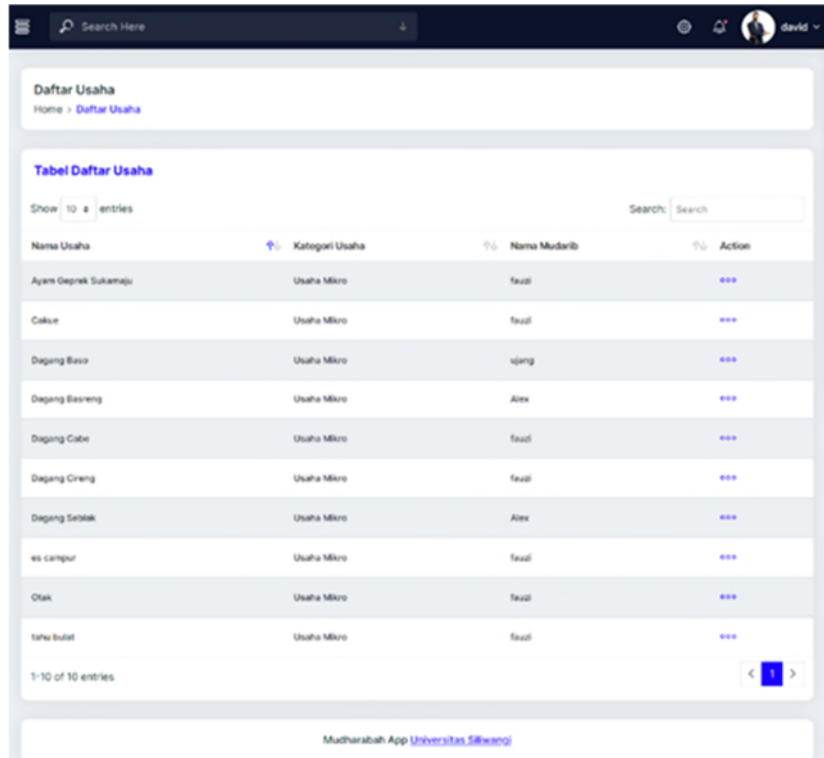


Figure 5 Business List Menu

Then, shohibul maal can see the complete business profile before making capital grants in the MSME detail view. This display also functions as a menu that regulates the provision of capital for the mudarib. The detailed display of MSME can be seen in Figure 6.

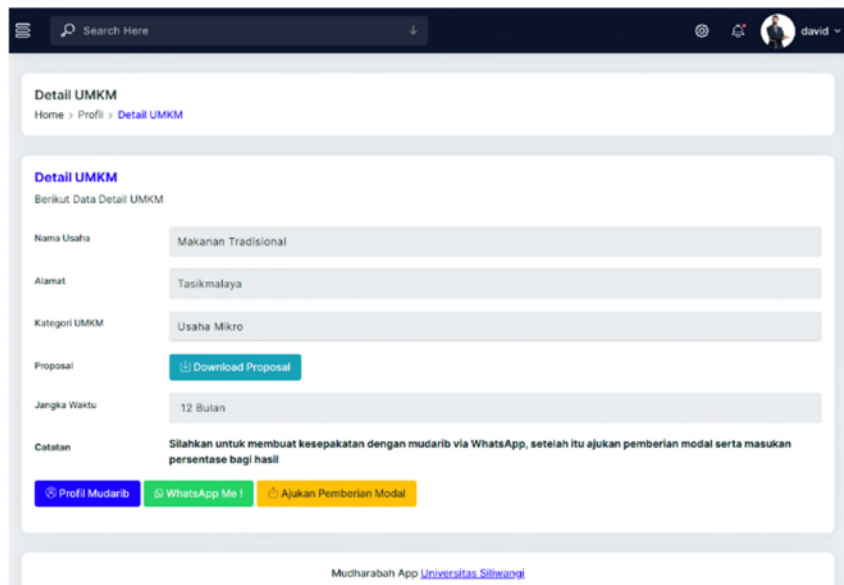


Figure 6 MSME Details Menu

The Islamic Peer-to-Peer lending process can be conducted directly by the Shohibul Maal by establishing direct contact with the Mudarib via WhatsApp, while adhering to the Muḍārabah and Musyārah contracts in accordance with the stipulated provisions.

3. Return of Capital by Mudarib. This main part only exists in the mudarib role which function is to return the capital that has been given by the shohibul maal within a pre-agreed period. The implementation can be seen in Figure 7.

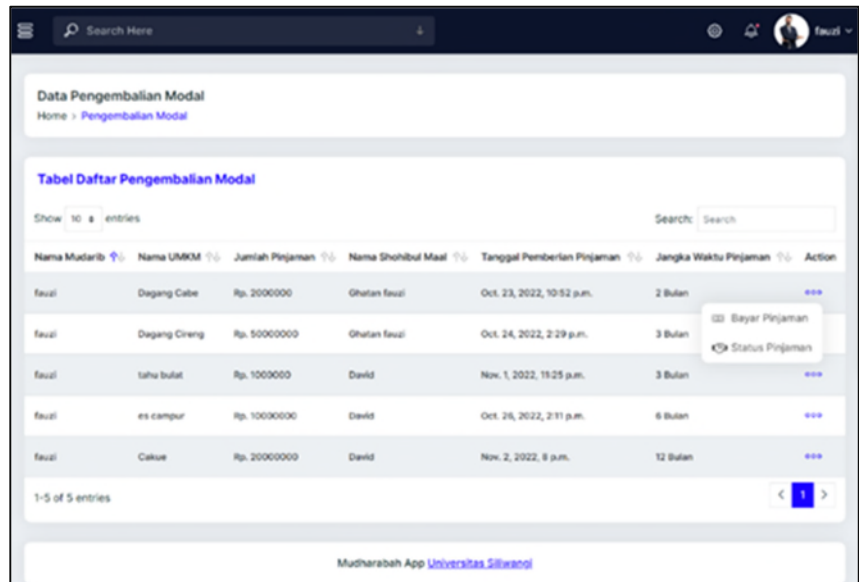


Figure 7 Refund of Capital Application Menu

MSME that have been given capital by shohibul maal will automatically appear in the table in Figure 7. Then, mudarib can make capital loan payments by clicking on the pay loan menu with the display that can be seen in Figure 8.



Figure 8 Loan Pay Menu

4. Distribution of Business Results. The distribution of business results is carried out by the mudarib by filling out the profit-sharing menu. The implementation form can be seen in Figure 9.

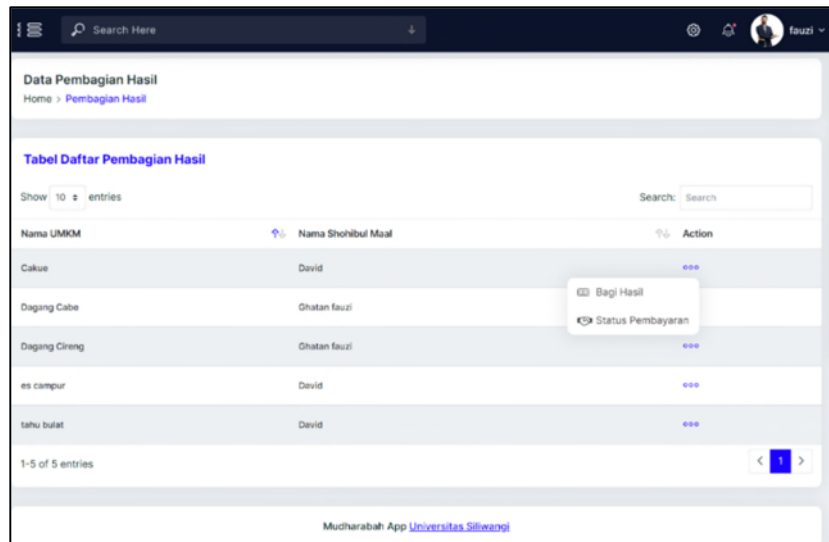


Figure 9 Business Results Sharing Menu

MSME that have received a capital loan will automatically appear in the table in Figure 9. Mudarib can perform profit sharing by filling out the profit-sharing menu. After that, the mudarib is ordered to include the amount of income that has been obtained along with the financial statements in order to strengthen the proof of income. The profit-sharing display can be seen in Figure 10.

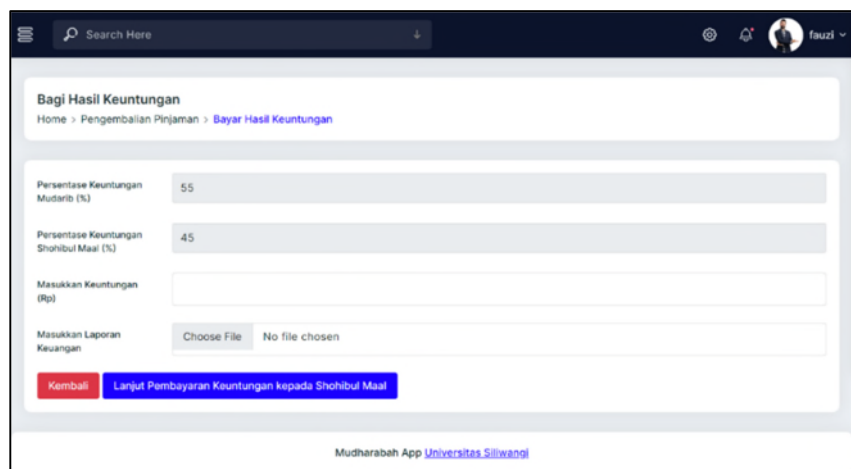


Figure 10 Revenue Sharing Menu

Even though it is fully carried out by the mudarib, the shohibul maal can see the development of capital payments by the mudarib on the same menu in the shohibul maal role. The menu display can be seen in Figure 11.

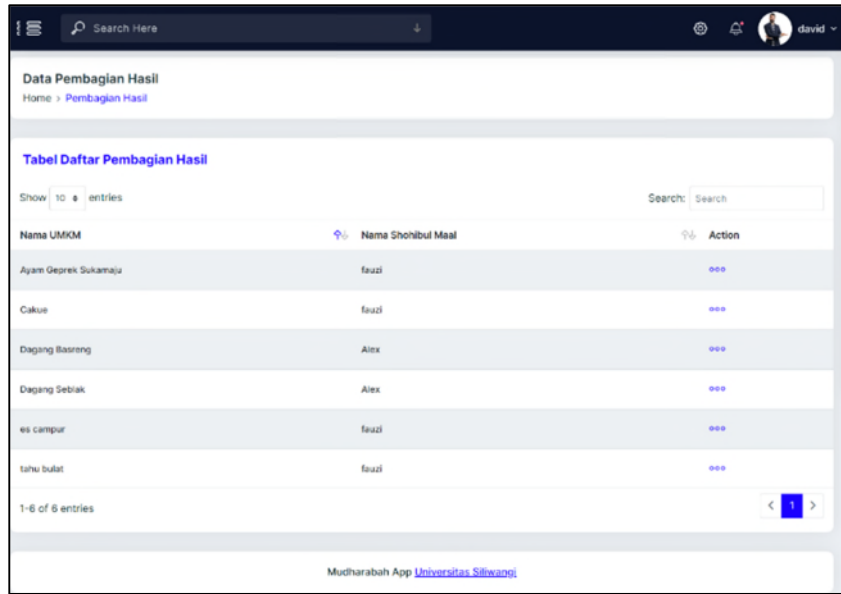


Figure 11 Menu for Distribution of Business Results at Shohibul Maal

The MSME in the table are in accordance with the MSMEs that have been funded by shohibul maal. Testing is carried out using the blackbox testing method by testing the main flow of the application. There are two main streams in this application, namely the mudarib flow in obtaining venture capital from shohibul maal and the shohibul maal flow in providing capital loans to mudarib. The two flows can be seen in Figure 12 and Figure 13. The test is obtained shown in Table 1.

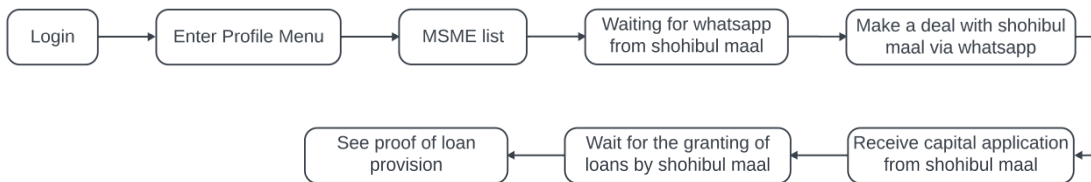


Figure 12 The Mudarib Flow in Obtaining Business Capital

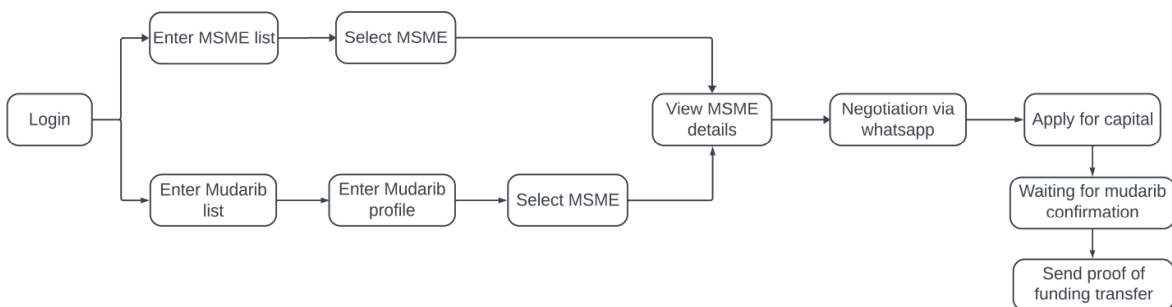


Figure 13 The Flow of Shohibul Maal in Providing Capital Loans

Table 1 Application Testing

No	Test Step	Expected Results	Test Result	Program Response
1	Mudarib registers its MSME in the application	The application adds these MSMEs to the business list table that is in the shohibul maal role	MSMEs are listed in the list of businesses that are in the shohibul maal role	[√] Accepted [] Rejected

No	Test Step	Expected Results	Test Result	Program Response
2	Shohibul maal provides a capital loan in accordance with the agreement	The application provides notification to the mudharib that shahibul maal is applying for a capital loan	Notifications were sent to the mudarib that shohibul maal applied for a capital loan	<input checked="" type="checkbox"/> Accepted <input type="checkbox"/> Rejected
3	Mudharib received capital loan applications from shahibul maal	The application provides notifications to shahibul maal under mudharib to accept or approve capital loan applications	A notification was sent to shahibul maal that the mudarrib received the capital loan application	<input checked="" type="checkbox"/> Accepted <input type="checkbox"/> Rejected
4	Mudharib refused to apply for a capital loan from shahibul maal	The application provides a notification to shahibul maal that the mudarrib does not agree with the capital proposal given on the grounds that it is not in accordance with the agreement	A notification was sent to shahibul maal that the mudarrib refused to apply for the capital loan	<input checked="" type="checkbox"/> Accepted <input type="checkbox"/> Rejected
5	Shahibul maal provides capital loans to the mudarrib	The application provides proof of payment of a capital loan to the mudharib and adds the name of the MSME to the payback table with the loan status not yet paid off	Proof of payment can be seen by the mudharib and the name of the MSME is listed in the payback table with unpaid loan status	<input checked="" type="checkbox"/> Accepted <input type="checkbox"/> Rejected
6	Mudarib returned the capital loan to shohibul maal	The application changes the loan status to paid off and adds the MSME name in the profit-sharing table with the payment status not yet paying profit sharing	The status of the loan is paid off and the name of the MSME is listed on the return on capital table with the payment status not paying profit sharing	<input checked="" type="checkbox"/> Accepted <input type="checkbox"/> Rejected
7	Mudharib distributes business profits on the profit sharing menu	The application changes the payment status to paid	Payment status changed to paid	<input checked="" type="checkbox"/> Accepted <input type="checkbox"/> Rejected

Furthermore, to determine the quality of the application based on user experience, especially the mudarib, a System Usability Scale test was carried out with the 10 question indicators shown in Table 2.

Table 2 Questions for the SUS Test

Code	Questions
Q1	Does this application make it easier in the process of applying for capital loans for MSME businesses
Q2	Is this application complicated to use
Q3	Does this application shorten the process of applying for a capital loan to shahibul maal
Q4	Is this application difficult to use so that it requires a technician to use it
Q5	Are the notifications on the application running properly
Q6	Does this app have incompatible implementations
Q7	Are the features in this application easy to understand
Q8	Are there any useless app features
Q9	Is the process of returning capital and the process of sharing business results going well
Q10	Is there a bug that interferes with the process of using the application

These questions were answered by 30 students of Siliwangi University. The answers to these questions will be on a scale of one to five, where one means strongly disagree and five means strongly agree. The answers from all these respondents to the questions above are listed in the table below.

After getting all the answers from the respondents, the next step is to perform data processing using the rules in the System Usability Scale method. These rules consist of three rules, namely each answer to an odd number question will be deducted by one, each answer to an even number question will be converted to five minus the value obtained from the even number question, and the total value of the

results obtained from rules one and two for each respondent will be multiplied by 2.5. More details are in Table 3.

Table 3 Result of Using Rule 1 and Rule 2

Code										Total	Average
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10		
2	4	3	0	2	4	4	2	3	3	27	67.5
1	3	4	4	3	3	4	2	4	3	31	77.5
3	3	4	4	2	4	4	2	4	2	32	80
4	4	4	3	1	1	4	2	3	4	30	75
4	4	1	1	0	0	3	4	4	4	25	62.5
3	4	3	3	4	4	4	3	3	3	34	85
2	3	4	3	4	3	4	2	3	4	32	80
4	3	4	4	4	3	4	3	4	3	36	90
4	4	3	4	4	3	4	4	2	3	35	87.5
4	3	4	4	4	3	4	4	2	2	34	85
3	3	4	4	4	3	4	4	1	2	32	80
2	3	4	3	4	2	3	4	0	3	28	70
3	3	4	3	4	4	4	3	3	4	35	87.5
4	3	4	3	4	4	4	3	3	4	36	90
4	3	4	3	4	4	4	3	2	3	34	85
4	3	3	3	4	3	3	3	3	3	32	80
4	3	1	2	4	4	4	4	3	3	32	80
4	2	4	2	4	4	4	4	3	2	33	82.5
4	3	4	4	4	3	4	4	3	2	35	87.5
4	3	4	3	4	2	4	4	2	3	33	82.5
4	4	4	3	2	4	4	4	3	4	36	90
4	4	2	4	3	3	4	4	1	3	32	80
1	4	3	4	3	3	4	4	2	3	31	77.5
3	1	4	4	3	3	4	3	1	3	29	72.5
3	4	3	4	4	2	4	4	3	3	34	85
4	4	4	4	3	4	4	4	3	2	36	90
3	4	4	2	4	3	4	4	4	3	35	87.5
4	3	4	3	1	4	4	4	4	4	35	87.5
4	3	4	3	3	3	4	4	4	3	35	87.7
4	4	4	4	2	2	4	4	4	4	36	90
Average = 2462.5 /30										82.08333	

From the calculation results to the third rule, the average respondent value is 82.08333 which indicates that the System Usability Scale value for this application is Acceptable.

4. Conclusions

Based on research conducted by the application of the Islamic peer to peer financing model, it can help sharia-based economic business processes, supported by applications that can facilitate the student learning process in entrepreneurship in running a business with technology-based Islamic concepts. The results of application testing using the peer-to-peer lending model method shows that the application runs well and thus can be applied. The test results from respondents are 82.08333 which indicates that the System Usability Scale value for this application is acceptable.

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