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FINANCIAL LITERACY TECHNOLOGY ADOPTION IN INDONESIAN SHARIA BANKING: A PRELIMINARY ANALYSIS

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ABSTRACT

The growth of financial instruments is significant nowadays. Because of that, more people are becoming more responsible in their financial planning, investment, and living expenses. Individuals who have financial knowledge tend to have more assets in finance in general. This research will study the readiness of technology adoption as its preliminary analysis for middle-lower socio-economics users in financial literacy of a leading Indonesian Sharia financial inclusion bank that focuses on women empowerment. In addition, this research also identifies the must-have features of the e-learning application. This research will conduct an online survey with 118 samples in Indonesia. This study found that West Java, South Borneo, and Southeast Sulawesi users are the most well-prepared to use technology to support their business. Some features like a group of learning materials and video-based learning are the most attractive features users desire to be accessible in the e-learning application.

Keywords: *Empirical study, financial literacy, technology adoption, women empowerment*

1. PREFACE

The growth of financial instruments is significant nowadays. Because of that, more people are becoming more responsible in their financial planning, investment, and living expenses. Financial literacy affects every aspect of financial decisions and has implications for individuals and society [1]. Financial literacy has two dimensions: basic financial knowledge and the ability to implement the knowledge [2]. Financial literacy positively influences decision-making. An individual who understands financial problems such as risk, rate of return, credit-card payment structure, and household budgeting tends to make a better decision from the decision-makers point of view [3].

The Covid-19 pandemic has had a significant impact on all sectors. Due to the rapid spread, the government issued regulations not to gather and stay at home. Activities usually carried out in person, and face-to-face now must be carried out online or online by utilizing existing technology. Suddenly there is a change around the world that requires people to be involved in e-learning and online activities to still complete work from home [4]. One of the affected activities was the financial teaching activity conducted by one of the Sharia banks in Indonesia for the customers' mothers. However, with the Covid-19 outbreak, this teaching activity was disrupted and even had to be stopped. Because of this, it takes innovation and new technology to overcome it.

Financial literacy can be defined to have two dimensions, namely knowledge of basic financial concepts and the ability to use this ability. Individuals who have financial knowledge tend to have more assets in finance in general [2]. Research conducted by Morgan and Long shows that financial literacy positively affects saving behavior. People with a high level of financial literacy who are higher generally have more savings in both the formal and informal when

compared to people with low levels of financial literacy low [5]. Financial literacy can also increase workers' confidence and productivity, improve workability, and help workers avoid financial difficulties [6]

According to research conducted by Robin Henager and Brenda J. Cude, in the older age group, long-term financial behavior is more vital related to objective financial knowledge rather than financial knowledge subjective (confidence in financial knowledge) and ability to manage subjective finance [7]. Financial literacy dramatically improves the quality but not the quantity of financial advice sought. People who have financial knowledge, especially from the older groups, generally seek professional financial assistance [8]. The factors that affect the level of financial literacy are very diverse. Financial education has a significant effect on financial behavior and financial literacy level. In addition, the level of income also affects financial behavior and level of financial literacy [9]. In line with Kaiser and Menkhoff, research conducted by Anshika et al. on MSMEs in India also shows that the factor that most influences the level of financial literacy of MSME actors are the level of gross income from a business. The higher the gross income level from the business, the more the owner's level of financial literacy is also high [10].

In the current situation, the impact due to the spread of Covid-19 viruses has moved from health crisis to economic crisis, resulting in several business owners are trying to survive both the problems with lesser resources [11]. In Indonesia, there is one of the leading Indonesian Sharia financial inclusion banks that focuses on women's empowerment. The Sharia bank aims to extend every SME business owner's financial literacy knowledge. The program was conducted in conventional ways, where they have a face-to-face learning schedule between the mentors and the business owners. Consequently, the program was no longer possible to conduct due to the pandemic. Therefore, the development of a system that can support the program is necessary.

In developing new technology, it is necessary to know the technological adaptation readiness of the prospective users of the technology itself. Based on the previous study, one of the main reasons for the weakness of ICT penetration in SMEs is the lack of awareness of SMEs about the potential of ICTs [12]. Therefore, understanding the current situation of readiness from SMEs business owners is necessary. The prototype design is carried out if the prospective users are ready for technology adaptation. From the prototype results, it can be tested whether the technology in the prototype is acceptable. This research aims to identify the readiness of technology adoption of middle-lower socio-economics users in financial literacy and identify the must-have features for the e-learning platform. This study contributes to provide information on the current technology adoption situation for the middle-lower socio-economics users especially customers of Sharia bank in Indonesia.

Related Work

Hasnan Baber [13] researched 375 undergraduate and postgraduate students of management study programs at universities in South Korea. This study examines the characteristics of the instructor (instructor's attitude, competence, and interaction), student characteristics (student motivation, mindset, and collaboration), and the technology acceptance model (perception of ease of use and perceived benefits) on students' behavioral intentions to accept and use the e-learning during a pandemic. The results obtained are that all factors positively affect students' behavioral preferences to use and accept e-learning systems during this pandemic.

Another research conducted by Yakubu [14] investigates factors that influence the adoption and use of educational technology by students in developing countries. The online survey method collected data from 286 higher education students in Nigeria. This study also contributes to the formulation of approaches and guidelines to enhance the adoption of educational technologies in developing countries.

A study conducted by Djoko Rajarjo [15] describes that in order to understand the students' condition, it is necessary to know users' readiness and acceptance towards online tutorials. His study found that students' perception of the usefulness of e-learning platforms had a strong correlation to their intention to use the e-learning platform.

This research will study middle-lower social economics users' readiness to use e-learning as a technology for financial literacy. This research is the first phase in designing the prototype suitable for the user needs.

2. METHODOLOGY

Literature Study

Literature study is used as a theoretical basis related to the research topic. This study obtained literature studies from journals, online sources, and previous studies. The result is the list of the questions to identify the users' readiness for technology adoption and the number of samples, respectively. The samples were determined using the Rule of Thumb theory with the following formula.

$$\text{Min} = \text{Number of questions} \times 5 \qquad (1)$$
$$\text{Max} = \text{Number of questions} \times 10$$

Questionnaire Distribution

The survey will be conducted through one of the Sharia banks in Indonesia by distributing an online questionnaire using google form. The questions used in the following preliminary survey are shown in Table 1, with a range of answers from extremely disagree to extremely agree.

Table 1 Survey's Questions

Age						
District/City						
Type of business						
Range Income (IDR)						
No	**Questions**	**ED**	**D**	**N**	**A**	**EA**
Psychological						
1	I believe that using new technology will be interesting					
2	I can use a computer without any difficulties					
3	I can operate almost every application on my mobile device					

Material Access	
1	I have access to a mobile device
2	I have a stable internet connection on my mobile phone
3	I have access to print out some documents
4	I have a computer connected to the internet
Ability	
1	I have the ability to use a computer
2	I have the ability to use the internet with my:
	a. Computer
	b. Mobile device
Accessing the Technology	
1	I don't have any difficulties accessing a new mobile application on my device.
Intention using Technology	
1	I have a plan to use technology to support my business
2	I believe that using technology will give benefit for my business at one point.

At this stage, the survey will also focus on gathering needs regarding what features are deemed appropriate to customers' needs in learning financial literacy. The survey will be conducted through Sharia bank in Indonesia by distributing an online questionnaire containing users' opinions on several features. The application requirements questionnaire for prototyping can be seen in Table 2.

Table 2 Application Requirement Questionnaire

Category	Question
Subject (V1)	*How do you feel if the application has a group of subject categories?
	*How do you feel if there is no group of subject categories on the application?
	**How important do you think a group of subject categories is on the e-learning application?
Video Lecture (V2)	*How do you feel if the learning material can be accessed in video form?
	*How do you feel if the learning material is not in the form of a video?
	**How important do you think the video is for accessing the learning material?

Text-based Lecture (V3)	*How do you feel if the learning material can be accessed in a text-based form?
	*How do you feel if the learning material is not in the form of passage?
	**How important do you think the text-based material is for accessing the lecture?
Notification (V4)	*How do you feel if there is a notification feature that reminds us about our learning progress?
	*How do you feel if there is no notification feature that reminds us about our learning progress?
	**How important do you think the notification feature is for reminding our learning progress?
Assignment (V5)	*How do you feel if there is an assignment feature that can test our knowledge in financial literacy?
	*How do you feel if there is no assignment feature that can test our knowledge in financial literacy?
	**How important do you think the assignment feature is to test our knowledge in financial literacy?
Chat (V6)	*How do you feel if there is a chat feature to communicate with the mentors?
	*How do you feel if there is no chat feature to communicate with the mentors?
	**How important do you think the chat feature is to communicate with our mentors?
Forum (V7)	*How do you feel if a forum feature is available to share our experience with other users?
	*How do you feel if there is no forum feature available to share our experience with other users?
	**How important do you think the form feature is to share our experience with other users?
Community group (V8)	*How do you feel if there is a community group feature available on the application?
	*How do you feel if there is no community group feature available on the application?
	**How important do you think the community group feature is on the application?
Range of answers: * Like – Must Be – Neutral – Live With – Dislike ** The answer's range is from 1 (extremely not important) to 7 (extremely important)	

Data Analysis

The analysis was conducted based on the collected data. The data is grouped into two categories (region and age) for each variable. As for the application requirement questionnaire, the eight existing features will be grouped into six categories consisting of attractive, must-be, one-dimensional, indifferent, reverse, and questionable. The category column is determined from the following conditions:

If (A+M+O) > (R+Q+I), use between A, M, and O, which has the highest frequency.

If (A+M+O) < (R+Q+I), use between R, Q, and I, which has the highest frequency.

If (A+M+O) = (R+Q+I), use either A, M, O, R, Q, and I, which has the highest frequency

3. RESULT AND DISCUSSION

Psychology Variable

The psychology variable measures the willingness of the users to use the technology as their business support. The graph of psychology factor for region group is shown in Figure 1.

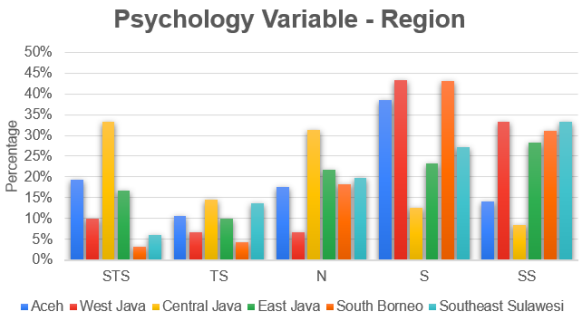

Figure 1 Psychology Variable for Region Group

Most of the sample regions are psychologically ready for using the technology in the future except for the customers located in Central Java. Customers from Aceh, West Java, and South Borneo are the most eager region in using technology and the most familiar area in using technology. Meanwhile, the graph of psychology factor for age group is shown in Figure 2.

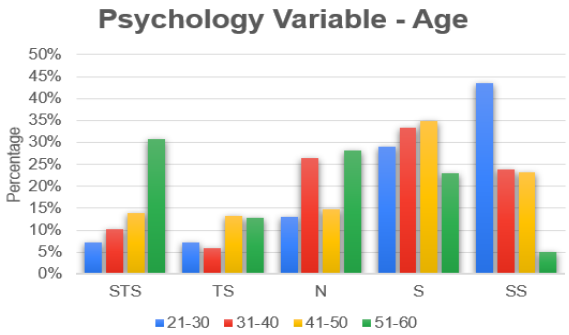

Figure 2 Psychology Variable for Age Group

In Figure 2, both young and middle-aged adult groups are most psychologically prepared to use technologies.

Material Access Variable

The material access variable describes the familiarization of customers in using technology in their daily life. The graph of material access for the region group is shown in Figure 3.

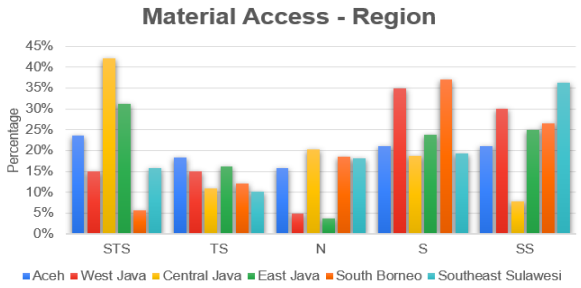

Figure 3 Material Access Variable for Region Group

In general, the customers from West Java, South Borneo, and Southeast Sulawesi are not having too many issues in accessing technology. As for the Aceh and East Java area, the trends seem to be stable. It means approximately about half of the samples from that area are familiar with technology, but half of them are not. Meanwhile, the Central Java area customers are having an issue accessing any kind of information through technology. On the other hand, the graph of material access variables for the age group is shown in Figure 4.

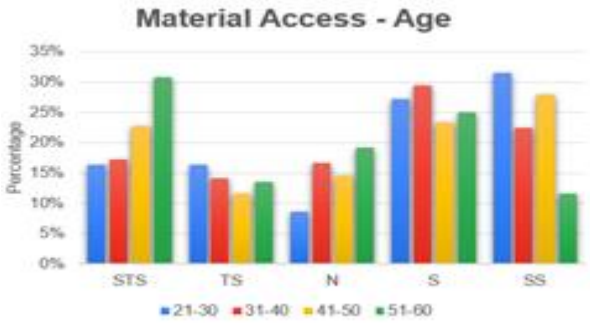

Figure 4 Material Access Variable for Age Group

There are some contrasts between the young adult, middle-aged, and old adult groups. Most old adult groups are not having any access to the internet either with a computer or mobile phone. On the other hand, the two other groups have access to the internet with their gadgets.

Ability Variable

The ability variable explains the customers' capabilities in the sample areas in using technology. The graph of material access for the region group is shown in Figure 5.

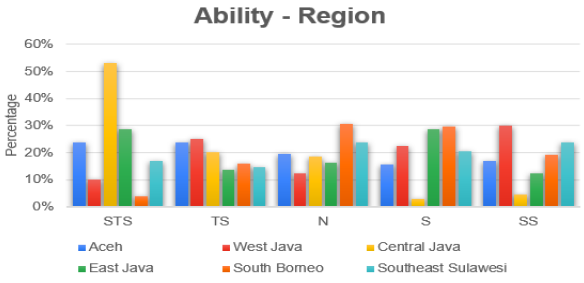

Figure 5 Ability Variable for Region Group

Firstly, all the sample regions except for Central Java can operate technology in their daily lives even though some locals have less ability to use technologies. As for the Central Java area, most customers have operating technologies issues. The graph of the ability variable for the age group is shown in Figure 6.

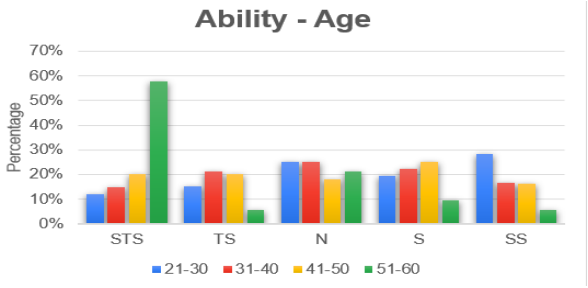

Figure 6 Ability Variable for Age Group

Secondly, Figure 6 shows the rate is stable among the other groups except for the old adults. They are having some issues accessing the technologies in their daily life.

Willingness Variable

The willingness variable gives information about customers' eagerness in the sample areas to use technologies to support both their financial literacy and business in the future. The graph for willingness variables is shown in Figure 7.

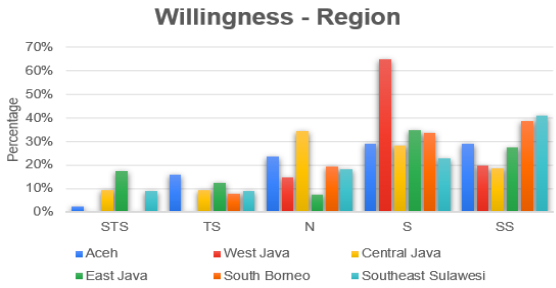

Figure 7 Willingness Variable for Region Group

In general, customers from every region are eager to use technology in the future. Customers from West Java are the most elevated compared to the other areas. As for the Central Java region, some customers still doubt using technologies in the future, but some of them are ready to use technologies in the future. Similarly, the graph of willingness variable for the age group is shown in Figure 8.

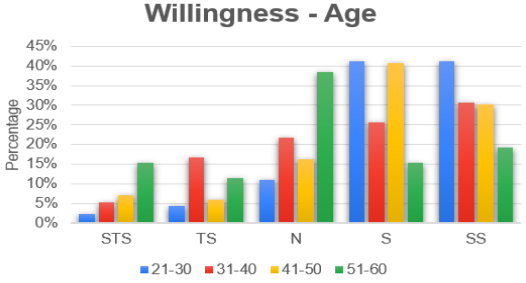

Figure 8 Willingness Variable for Age Group

To summarize, middle-aged adults are the most enthusiast group using technologies in the future and the young adult groups. Meanwhile, the older adults choose to stay more conservatively. The result of the application requirement survey is shown in Table 3.

Table 3 Application Requirement Result

No	Customer Requirment	A	M	O	R	Q	I	Total	Category
1	V1	24	0	0	2	5	10	41	A (Attractive)
2	V2	23	0	0	0	5	13	41	A (Attractive)
3	V3	5	0	0	6	5	25	41	I (Indifferent)
4	V4	15	0	0	0	5	21	41	I (Indifferent)
5	V5	13	0	0	1	6	21	41	I (Indifferent)
6	V6	10	1	2	1	4	23	41	I (Indifferent)
7	V7	16	0	0	1	6	18	41	I (Indifferent)
8	V8	13	1	2	0	8	17	41	I (Indifferent)

Based on Table 3, variable 1 (learning materials' categories) and variable 2 (video-based learning) features are the most attractive features that users believe will help them understand all financial literacy subjects. Meanwhile, the other variables are categorized on the Indifferent quadrant, which means whether that features are accessible or not won't affect users' satisfaction.

4. CONCLUSION

The region group graphs show that West Java, South Borneo, and Southeast Sulawesi users are the most well-prepared to use technology to support their business. In addition, users from the young adult and middle-aged group (21-40 years old) are the readiest among all the variables to use technology to support their business. Based on the result, the users are ready to implement technology as their business support system. They also believe technology can play a vital role, especially in supporting their financial literacy.

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