AGRISOCIONOMICS
Jurnal Sosial Ekonomi dan Kebijakan Pertanian
ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Vol 9 (2): 368-384, June 2025

Level Of Financial Literacy And Its Influencing Factors Among Dairy Farmers In Pangalengan District Bandung

Yuuki Zharfan Sisva*, Dwi Rachmina, Feryanto
Agribusiness Study Program, Faculty of Economic and Management, IPB University, Bogor, West Java, Indonesia
*Correspondence Email: yuukizharfan2503@gmail.com

Submitted 15 July 2024; Approved 19 November 2024

ABSTRACT

Research on the level of financial literacy of farmers is needed to measure their ability to manage finances to improve their level of welfare. This study aims to analyse the level of financial literacy of dairy farmers and the factors that influence it and see its relationship with farmers' preferences in facing risks. This research was conducted in Pangalengan District, Bandung Regency using descriptive analysis method, multiple regression analysis, and Pearson correlation test. The number of respondents in this study was 77 farmers spread across three villages in Pangalengan District, Bandung Regency. The results showed that the financial literacy level of the majority of farmers (77%) was in the less literate category, especially in the financial behaviour component. Factors that can affect the financial literacy of farmers are income, age, education level, ownership of other jobs, and distance to financial institutions. While the variables of length of farming and gender do not influence the level of financial literacy of farmers and prove a positive relationship between the level of financial literacy with their preferences in facing risks.

Keywords: *dairy farm risk, dairy farmers, financial literacy*

BACKGROUND

One of the leading livestock sector commodities in Indonesia is fresh milk from the dairy sector. Milk production from dairy cows contributes more to meeting milk needs compared to other livestock such as goats, sheep, horses and buffaloes. Based on data from the Ministry of Agriculture, the dairy cattle population in Indonesia in the 2019-2021 period continued to increase, but in 2022 there was a drastic decrease in the dairy cattle population in Indonesia which can be seen in Table 1.

Table 1. Dairy cattle population and milk production in Indonesia 2019-2022

Year	Population (head)	Milk Production (Ton)	Milk Consumption (Ton)	Difference
2019	565 001	933 537	1 014 371	-80 834
2020	568 000	946 912	1 046 553	-99 641
2021	582 169	946 388	1 079 243	-132 855
2022	507 075	824 237	1 112 443	-288 206

Source: Central Bureau of Statistics (2024)

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Vol 9 (2): 368-384, June 2025

Seen in Table 1, the low production of cow's milk in Indonesia leads to a high level of imports of dairy products from abroad. Based on Indarti (2022), domestic milk production can only be used to meet domestic needs by 22% while the remaining 78% comes from imports. The high import of milk from abroad results in direct losses to dairy farms in Indonesia. In line with the research of Budiraharjo et al. (2021) one of the factors affecting the level of milk imports is milk production. This is due to the fact that even though milk production has increased, the amount still does not meet domestic milk demand. So that further development is still needed to be able to increase the productivity of dairy cows in the country in order to increase milk imports.

Based on data from the Directorate General of Animal Husbandry and Animal Health (Table 2), there are five provinces that play a major role in dairy milk production in the country, with East Java as the highest province followed by West Java below. Based on data from the Ministry of Agriculture (2022), West Java has a dairy cattle population of 110,005 heads with milk production of 300,198 tons in 2022. Table 1 shows that West Java Province also plays an important role in the dairy industry in Indonesia, especially as the second largest milk producer after East Java. Data in Table 2 shows that the significant number of dairy cattle population and high milk production reflect the potential of the domestic dairy farming sector can still be developed.

Table 2. Total dairy cattle population and milk production of productive dairy cows by region in 2022

Province	Milk production (tons)	Cow population (heads)
D.I. Yogyakarta	3.885	3.265
Sumatera Utara	8.980	5.287
Jawa Tengah	103.547	101.288
Jawa Barat	300.198	110.005
Jawa Timur	543.687	282.364

Source: Directorate General of Animal Husbandry and Animal Health, 2022

Bandung Regency is the region with the second largest dairy cattle commodity in West Java after West Bandung Regency. Based on BPS West Java data (2022), Bandung Regency has a dairy cattle population of 26,097 heads, which is still below West Bandung Regency with 39,101 heads. It is concluded that in 2022, around 21% of the dairy cattle population in West Java will come from Bandung Regency. Meanwhile, the largest dairy cattle population in Bandung Regency comes from Pangalengan Subdistrict, which reaches 3,625 heads for males and 10,655 heads for females.

The dairy cattle population in Pangalengan Subdistrict is managed directly by farmer households who join the South Bandung Livestock Cooperative (KPBS). Based on data from the Department of Agriculture (2022) in Table 3, Pangalengan subdistrict has the highest number of dairy cows in Bandung District with 14,280 head. The high population of dairy cattle in Pangalengan Subdistrict managed by farmer households through the South Bandung Livestock Cooperative (KPBS) shows that the dairy farming sector in this area has significant economic potential for the local economy. Around 4,678 farmers have joined KPBS, indicating that there are still many people who earn income from dairy farming in the region. The high population of dairy cattle in Pangalengan Subdistrict managed by farmer households through the South Bandung Livestock Cooperative (KPBS) shows that the dairy farming sector in this area has significant economic potential for the local economy. Around 4,678 farmers have joined KPBS, indicating that there are still many people who earn income from dairy farming in the region.

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Vol 9 (2): 368-384, June 2025

Table 3. Dairy cattle population of Bandung Regency by subdistrict 2022

Subdistrict	Dairy cattle population (head)		Total (head)
	Male	Female	
Pangalengan	3.625	10.655	14.280
Cilengkrang	813	3.501	4.314
Kertasari	261	1.800	2.061
Pasir Jambu	753	1.234	1.987
Arjasari	84	863	947

Source: Bandung Regency Agriculture Office, 2022

However, in the range of 2021-2022 the livestock sector received a disaster that had quite an impact on farmers. The cloven-hoofed animal husbandry sector including cattle, goats, sheep, buffalo, pigs and deer can be affected by foot and mouth disease (FMD) caused by the FMD virus of the Pocornaviridae family and the genus Apthovirus (Adjid 2020; Mohamad et al. 2022). Outbreaks reach a mortality rate in livestock of more than 50% if the virus continues to develop in the heart muscle of younger animals (Gulbahar et al. 2007). Based on data from the Directorate of Livestock and Animal Health (PKH) of the Ministry of Agriculture (Kementan), the peak of FMD infected animals in Indonesia was in June 2022 with 13,518 cases. The disease is long-lasting and attacks the bones, mammary glands, and dairy products of farm animals.

The outbreak of foot and mouth disease (FMD) that hit all regions of Indonesia, including the dairy farming sector at KPBS Pangalengan, had a significant impact on the sustainability of the farming business. One of the main impacts is the decrease in productivity of dairy cows due to FMD infection, which affects the health of livestock and reduces the quality and quantity of milk production. This condition has resulted in a drastic drop in farmers' income, given that most of their income depends on daily milk sales.

As a result of farmers' income falling dramatically, and expenses for feed that must still be incurred, causing farmers to lose money. On the other hand, farmers also have to finance family needs, which causes farmers to try to manage their finances well. The impact of FMD can cause farmers to switch professions from farming because they consider the high losses. In Figure 3, based on KPBS data, there is a drastic decrease in the number of farmers in 2022, which is the peak of FMD in Indonesia.

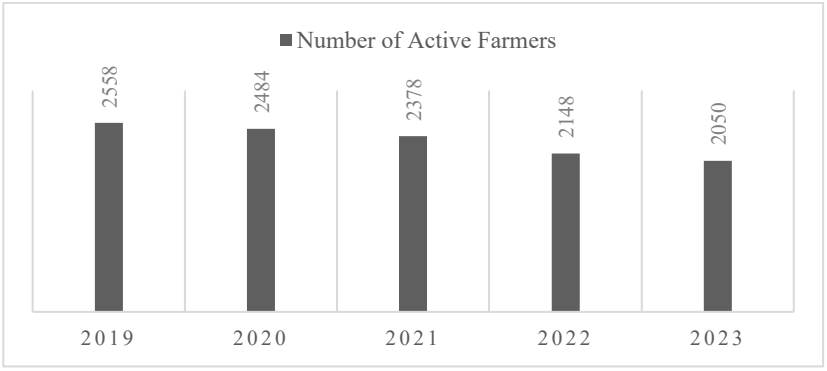

Figure 1. Number of active farmers at KPBS Pangalengan 2019 – 2023

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Vol 9 (2): 368-384, June 2025

Figure 1 shows a drastic decrease in the number of active breeders at KPBS in 2022 by 230 people from 2021. This shows that when the FMD outbreak peaks in 2022, it can significantly reduce the number of active farmers. FMD causes huge losses for farmers so they prefer to switch professions or no longer manage their livestock business because when their livestock is affected by FMD, their income tends to be smaller than expenses. Based on research by Solikin et al. (2022), 20% of the farmers they studied had switched professions due to trauma and high operational costs due to FMD outbreaks. The potential losses experienced by cattle farmers due to FMD reached IDR 788.81 billion (Ombudsman RI 2022).

The large number of inactive dairy farmers in KPBS Pangalengan Sub-district after FMD is an indication that dairy farmers in Pangalengan Sub-district are not prepared to deal with the risks associated with FMD outbreaks. Dairy farmers are also faced with a variety of risks that may have an impact on livestock farming such as damage to milk quality, decreased cow productivity, livestock disease, feed availability, milk price fluctuations, feed availability, and death of livestock which causes farmers to prefer to avoid existing risks as is the case when there is an FMD outbreak, many farmers prefer to avoid increasing losses by not continuing their farming business. Farmers need large capital and assets to be able to run their farm operations and must have good financial management skills to be able to minimize losses due to the risks that are present. This is in line with prospect theory, where individuals will be more sensitive to losses than gains when making decisions, therefore individuals tend to think about the level of loss that may occur first, the higher the loss that may occur will make individuals tend to avoid making these decisions (Kahneman and Tversky 1979).

This is also a concern for the government and financial institutions to provide access to financing and training in managing finances for farmers as widely as possible so that farmers can manage their finances better and improve their financial literacy. Currently, animal husbandry, which is included in the agricultural sector, already has a variety of financing programs provided by the government and financial institutions.

However, not all available financing programs are accessible to farmers, due to the low level of financial literacy of farmers. The government has designed a financing program for dairy farmers in Indonesia that focuses on the People's Business Credit (KUR) and the Cattle Breeding Business Credit (KUPS). The programs designed by the government are expected to be utilized by farmers for the development of the cattle farming sector in Indonesia. In addition, dairy farmers in Pangalengan Subdistrict have also been given relief from PT BPR Bandung Kidul for applying for business loans that can be utilized for their farm capital. Counseling related to improving financial literacy in Pangalengan Sub-district has never been conducted by the government or related institutions, thus increasing the possibility that the level of financial literacy of farmers in Pangalengan Sub-district is at a low level.

Financial literacy can help farmers to manage farm finances more effectively and assist in making better decisions regarding investments, savings and expenses, especially in dealing with emergency situations such as the recent FMD outbreak. To date, little research has been conducted to measure and analyze the level of financial literacy in the livestock sector, despite dairy farmers facing typical challenges, such as feed prices, maintenance costs and milk price fluctuations, which affect their financial literacy needs. Most financial literacy research in Indonesia has focused on the micro, small and medium enterprise sector or the banking sector more generally. By focusing on dairy

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Vol 9 (2): 368-384, June 2025

farmers in Pangalengan, which is one of the main centers of dairy farming in West Java, this study fills a gap in understanding financial literacy in the livestock sector with its unique socio-economic, cultural and business ecosystem characteristics. Furthermore, a better understanding of financial literacy among farmers can help explain the direct impact of such literacy on farmers' productivity and economic stability, such as in capital management, financial planning or credit decision-making. Therefore, research on the level of financial literacy of dairy farmers and the factors that influence it needs to be conducted.

RESEARCH METHODS

This research was conducted in three cooperative service centers (TPK) of KPBS, Pangalengan District, Bandung Regency, West Java Province. The selection of this location is done by considering the distance of the TPK to the center of financial institutions located in Pangalengan Subdistrict, the first is Pangalengan TPK which has the closest distance to financial institutions, then Cipanas TPK which has a medium distance, and Wates TPK which has the farthest distance. It also considers data from the Bandung Regency Agriculture Office that Pangalengan Sub-district is the sub-district with the largest number of dairy cattle in Bandung Regency (DISTAN 2022). Data collection was conducted from September 2023 to January 2024.

The type of research used in this study is a quantitative approach and uses primary data supplemented by secondary data which can be seen in Table 4. Primary data was obtained through filling out questionnaires and in-depth interviews with respondents. Secondary data uses data obtained from literature studies from various sources, such as books, journals, government agencies, international institutions, and other literature related to the topic of this research.

Table 4. Data Type and Data Source

	Data type	Data source
Primary	Respondent biodata Respondent characteristics Respondents' financial services	Questionnaire and interview
Secondary	Indonesian financial literacy index	SNLIK OJK
	Indonesian dairy export volume	BPS, Kementan
	Total milk production in Indonesia	BPS, Kementan
	Total dairy cattle population in Indonesia	BPS, Kementan
	Total dairy cattle population in Bandung District	BPS, Kementan
	Number of farmers in Pangalengan District, Bandung Regency	KPBS, Kementan

In conducting this study, the authors used a population of farmers from data on the number of farmers in the three KPBS cooperative service centers (TPK) provided by KPBS, totaling 306 farmers. In determining the minimum amount of sampling in this study, the authors used the Taro Yamane method (Yamane, 1967) which is considered to represent the condition of the population.

Based on the calculation of the Taro Yamane method (1967), the author should get a sample of 76 respondents, but the author decided to take 77 respondents to make the research results more

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Vol 9 (2): 368-384, June 2025

accurate. The addition of one respondent is also an anticipatory step in case of data discrepancies or respondents do not provide valid answers. In addition, the proportional random sampling technique was used to adjust the number of samples in each TPK to the proportion of the number of breeders, resulting in more representative data. According to Sugiyono (2006) this sampling technique is done randomly and does not pay attention to the strata in the population. Using this technique, the number of respondents from each TPK was obtained to ensure that farmers from each TPK were represented by the number of respondents. The distribution of the number of sample farmers in each TPK is presented in Table 5.

Table 5. Number of samples by TPK

No	TPK	Number of farmers (people)	Percentage (%)	Number of samples (people)
1	Pangalengan	39	12,75	10
2	Cipanas	204	66,67	51
3	Wates	63	20,59	16
	Total	306	100	77

Calculation of Financial Literacy Score

Sourced from the OECD, there is a combination of three indicator components used in measuring a person's financial literacy score (Atkinson and Messy 2012), namely:

1. The financial knowledge indicator is evaluated based on each respondent's number of accurate responses to eight questions covering topics such as understanding the basic laws of banking, inflation, diversification, risk and return, as well as the time value of money and related concepts. Those taking the survey will be given a score of 1 for correct answers and a score of 0 for incorrect or unknown answers.
2. The financial behavior indicator is assessed by the total intensity of individuals based on a total of ten behavioral statements that measure individual behavior related to accuracy in managing personal and business finances, prudence in deciding the use of financial products and services, making decisions on the selection of financial products and services after knowing the information, accuracy in paying bills, saving or investment activities in the past year, and loans to meet needs. Respondents will get a score of 4 if they answer on a scale of 4, score 3 if they answer on a scale of 3, score 2 if they answer on a scale of 2, and score 1 if they answer on a scale of 1.
3. The financial attitudes indicator is measured from the total score of respondents' answers in the form of individual assessments of eleven statements relating to farmers' beliefs and views on long-term spending or savings, short-term financial planning, readiness to face investment risks, future concerns, and ways to meet needs. When asked to rate their level of agreement, respondents could choose among four possible options: strongly disagree (4), disagree (3), agree (2), and strongly agree (1).

In this study, the authors measured the financial literacy level of farmers using Chenn and Volpe's (1998) theory. This implies that the financial literacy components mentioned above are the

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Vol 9 (2): 368-384, June 2025

result of the score of each question. A person's financial literacy level can be determined by the following formula:

$$\text{Financial literacy index} = \frac{\text{Index } X_1 + \text{Index } X_2 + \text{Index } X_3}{3} \quad (1)$$

where:
Index X_1 = Financial knowledge index
Index X_2 = Financial behaviour index
Index X_3 = Financial attitudes index

Descriptive analysis

Descriptive analysis refers to a way of analyzing data used by researchers to study the factors under study (Muljono 2012). To understand and evaluate the level of financial literacy among farmers, this study uses descriptive analysis based on respondents' responses to the questionnaire questions provided.

The respondents' financial literacy level refers to the four levels of financial literacy listed in SNLIK OJK (2022), namely well literate, sufficient literate, less literate and not literate. In this research, the author tries to give weight to each level based on the correct answer score in filling out the questionnaire, namely the number of correct answers divided by the total score, then the value is obtained. All three aspects of financial literacy-knowledge, behavior and attitude-are covered in this survey. Table 6 shows the distribution of financial literacy levels of the studied farmers.

Table 6. financial literacy levels

financial literacy levels	Index
Well literate	24,25 – 30,00
Sufficient literate	18,50 – 24,24
Less literate	12,75 – 18,49
Not literate	7,00 – 12,74

Multiple linear regression analysis

Regression analysis is a statistical procedure for analyzing the relationship between dependent variables (dependent) and independent variables (independent). If the regression model uses two or more independent variables, the study uses multiple regression analysis (Malhorta 2004). Multiple regression models and the least squares method or what can be known as Ordinary Least Square (OLS) in this study are applied to analyze various factors that can have an influence on financial literacy, especially on farmers.

The non-independent variable used in this study is the financial literacy index and the independent variables in this study are income, age, gender dummy, latest education level, ownership of another occupation other than livestock farming dummy, distance to the nearest financial institution, and length of farming business. The classical assumption test in the form of normality test and heteroscedasticity test aims to determine the best model that can describe the actual condition of the financial literacy of farmers. The general model of multiple linear regression of financial literacy function used is as follows:

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Vol 9 (2): 368-384, June 2025

$$\text{financial literacy index}_i = \beta_0 + \beta_1 \text{Income}_i + \beta_2 \text{Age}_i + \beta_3 \text{dummyGender}_i + \beta_4 \text{Education}_i + \beta_5 \text{dummySideHustle}_i + \beta_6 \text{Distance}_i + \beta_7 \text{FarmBusinessDuration}_i + \varepsilon_i \quad (2)$$

Where,

$\text{financial literacy index}_i$	=	Farmer Financial Literacy Index,
Income_i	=	Income (million rupiah/month),
Age_i	=	Age (years),
dummyGender_i	=	Gender dummy (1= male, 0= female),
Education_i	=	Last Education (1= SD / Equivalent, 2= SMP / Equivalent, 3= SMA / Equivalent, 4= Diploma / S1 / S2)
dummySideHustle_i	=	Dummy of ownership of another occupation other than livestock farming (1= own, 0= do not own),
Distance_i	=	Distance to the nearest financial institution (km),
$\text{FarmBusinessDuration}_i$	=	Length of farming business (years),
$\beta_0 - \beta_7$	=	Coefficient,
ε_i	=	Error Term

RESULT AND DISCUSSION

Dairy Farmer Financial Services

Dairy farmers in Pangalengan Subdistrict are members of the South Bandung Livestock Cooperative (KPBS). Through KPBS, farmers receive financial services that can be used. Since 1993, KPBS has collaborated with PT. Bank Perkreditan Rakyat (BPR) Bandung Kidul to provide financial services for farmers and the general public in Pangalengan Subdistrict. The existence of cooperation between KPBS and PT BPR Bandung Kidul provides convenience and relief for dairy farmers who are dealing with farm business financing problems. PT BPR Bandung Kidul is located next to the KPBS Main Office in Pangalengan District, Bandung Regency.

All farmers who are members of KPBS indirectly become customers of PT BPR Bandung and will have savings. Savings provided by PT BPR Bandung Kidul have a relief in administrative costs of Rp1,000 per month. In addition, when farmers deposit milk every day, it will be directly deducted to be used as savings in the bank if the milk price is rounded below Rp5,000, so that each farmer will have a balance that will continue to grow every milk deposit.

PT BPR Bandung Kidul also provides credit services for farmers and the general public. Credit given to KPBS members can be used for the purchase of cows, expansion of grass land, cage repairs, and so on. Farmers who have credit to PT BPR Bandung Kidul can pay their bills through deductions from each milk stor, so that it will make it easier for farmers to pay credit and avoid bad credit. BPR provides relief for farmers, namely lower credit interest than for the general public, which is 12 percent per year while for the general public it is 21 percent per year.

Financial Literacy Level of Dairy Farmers

The level of financial literacy of dairy farmers studied has been determined through the completion of questionnaires by 77 farmers in Pangalengan sub-district. The level of financial literacy of dairy farmers in Pangalengan Sub-district is shown in Table 7.

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Vol 9 (2): 368-384, June 2025

Table 7. Financial literacy level of dairy farmers in Pangalengan Subdistrict

category	Number of farmers (people)			Total
	Pangalengan	Cipanas	Wates	
Well literate	0	0	0	0
Sufficient literate	3	41	15	59
Less literate	6	9	1	16
Not literate	1	1	0	2
literacy index	20,67	17,82	16,90	18,01

The results of the analysis in Table 7 show that the level of financial literacy of farmers in the three research locations is on average at the less literate level of 59 respondents, of which 3 people from Pangalengan TPK, 41 people from Cipanas TPK, and 15 people from Wates TPK. The average financial literacy index owned by Pangalengan TPK farmers is 20.67 (moderately literate), for Cipanas TPK is 17.82 (less literate), and for Wates TPK is 16.90 (less literate). The low level of financial literacy of farmers is influenced by the components of financial literacy, namely knowledge, behavior, and attitude. It is concluded that dairy farmers in Pangalengan Sub-district have not paid attention to the importance of having good financial literacy, and also added by other factors that can affect the low level of financial literacy of farmers. The high number of farmers who are classified at the less literate level needs attention from the government and related institutions because until now it is believed that a good level of financial literacy can improve welfare.

The low financial literacy of farmers is caused by the low index of components that build the financial literacy of farmers. Based on Table 8, it shows that the financial behavior component is in a condition that needs attention because 74% of the farmers studied were in the low category on this component. The financial behavior component assesses farmers in terms of managing business and personal finances such as making savings/investment habits, paying loan/credit bills on time, and recording expenses and income. Factors that influence the low financial behavior of farmers based on the results of the interviews are at the point of investment/saving behavior, preparation and recording of financial reports, and rarely separating personal and farm business finances. Farmers tend to choose to save in the form of cows rather than saving in banks because they consider their distance to visit the bank is not close, in terms of business records farmers also rarely do bookkeeping of their business cash flow. Farmers tend to lack concern in terms of managing finances better because they apply habits that have been commonly applied. In the financial knowledge and attitude component, the average farmer is in the middle category.

Based on the results of farmers' answers after conducting interviews, the authors have mapped the average answers of farmers on each component of financial literacy that has been linked to the characteristics of farmers so as to describe the condition of the financial literacy component of farmers on each characteristic. Farmer characteristics grouped by the author include age, gender, final education level, length of farming business, cooperative membership, ownership of jobs other than farming, and income level (Table 9).

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Vol 9 (2): 368-384, June 2025

Table 8. Financial literacy components of dairy farmers in Pangalengan sub-district

No.	Component	Index		Percentage of farmers (%)
1.	Financial knowledge	0,00 – 2,00	(Low)	0
		3,00 – 5,00	(Medium)	49
		6,00 – 8,00	(High)	51
2.	Financial behaviour	10,0 – 19,90	(Low)	74
		20,0 – 29,90	(Medium)	23
		30,0 – 40,00	(High)	3
3.	Financial attitudes	11,0 – 21,90	(Low)	0
		22,0 – 32,90	(Medium)	86
		33,0 – 44,00	(High)	14

Effect of Respondent Characteristics on Financial Literacy

In this study, researchers mapped the age characteristics of farmers based on the score of each component that builds financial literacy (Table 9). In each component of financial literacy, especially in the financial behavior component, younger farmers have a higher average score than older farmers. This is because the older the farmer, the less interested they are in paying attention to their financial management. Younger farmers tend to have more capability in managing finances properly and regularly, and also younger farmers also have an interest in improving their financial literacy better than older ones, this is contrary to the hypothesis which states that older farmers will have more experience in managing their farms including in managing their finances.

Furthermore, on gender characteristics, male farmers have a higher average score on the components of financial knowledge and attitudes, while women excel in the financial behavior component (Table 9). Male farmers tend to have good knowledge in finance so that in responding to statements related to finance, male farmers will be able to answer well. However, male farmers also tend to be more lazy than women in managing their finances well, rarely found male farmers who do financial records and also rarely do routine saving behavior. On the other hand, women will be more careful in managing the finances of their farming business as well as their family finances, although they may lack an understanding of financial theory. Overall, these differences in gender characteristics indicate that the success of farm business management and access to financial services largely depends on how the roles of men and women complement each other. Balanced collaboration between men and women in farmer families is essential so that strengths in each component of financial literacy can be optimally utilized.

The level of education has a big influence on the score of the financial literacy component of farmers. It is evident from the scores on each component that farmers who graduated from Diploma / S1 / S2 have the highest score, while farmers who only graduated from elementary school / equivalent have the lowest score (Table 9). This is because the higher the education, the higher the understanding of financial literacy. However, dairy farmers in Pangalengan sub-district are dominated by primary school graduates, which greatly affects their low level of financial literacy. Farmers with only a primary school education or equivalent tend to have a limited understanding of modern financial concepts, such as cash flow management, investment, credit and financial recording. This affects their ability to make effective financial decisions, such as setting a business budget and

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Vol 9 (2): 368-384, June 2025

choosing the right financial products. As a result, they are more prone to experiencing difficulties in paying installments or utilizing credit services wisely.

In the characteristics of the length of farming owned by farmers, it cannot be determined which range has an advantage in the financial literacy component, because there is no significant difference in the score of the financial literacy component in each range of farming length (Table 9). This suggests that the length of time farmers have been farming does not necessarily reflect their level of financial literacy, as old and new farmers may have the same level of financial literacy. This means that experience does not automatically improve their ability to manage cash flow, save, or utilize credit wisely. This finding proves that both old and new farmers are at risk of facing the same financial problems, such as difficulty paying back credit or lack of cash flow recording.

Table 9. Average condition of financial literacy components based on respondent characteristics

Characteristic	Description	Knowledge score	Behavior score	Attitude score
Age	<40	5,75	21,45	30,95
	40-60	5,40	18,22	29,18
	>60	4,67	18,00	28,33
Gender	Male	5,54	17,36	29,78
	Female	4,54	19,31	28,09
Education	SD / Equivalent	5,02	17,34	28,65
	SMP / Equivalent	5,31	19,89	30,10
	SMA / Equivalent	5,44	21,78	31,11
	Diploma / S1 / S2	7,00	34,00	33,00
Length of business	0 - 10	5,63	19,81	29,72
	11 - 20	5,42	19,89	30,05
	>20	5,34	18,51	29,29

Factors Affecting the Financial Literacy Level of Farmers

The level of financial literacy of dairy farmers is influenced by several factors. Factors that can affect the level of financial literacy of farmers were formulated and tested using the Ordinary Least Square (OLS) method through the Stata application. The test results produced an R-Squared value of 0.529 or 52.9% which shows that the variation in the factors tested can explain the level of financial literacy of farmers, the remaining 47.1% is explained by other variables. The test results also produced a probability value of 0.000 (very small) which indicates that the regression model tested as a whole is statistically significant.

Factors that can significantly influence the level of financial literacy index of farmers include income, age, latest level of education, dummy for other job ownership, distance to the nearest financial institution, and risk preference. While the dummy factors of gender and length of farming business have no significant effect (Table 10).

From Table 10, it can be seen that there is a positive coefficient on the farmer income level variable at a real level of 1 percent of 0.150 which indicates that every increase in farmer income level by 1 million, the financial literacy index will increase by 0.150, ceteris paribus because an increase in income will increase individual awareness in managing their finances better and can also

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Vol 9 (2): 368-384, June 2025

increase interaction with financial institutions. Based on the findings in the field, farmers who have greater income will think more about managing their finances more effectively, and consciously they tend to prefer to save their income in financial institutions. This is consistent with the findings of Ravikumar et al. (2013) and Definit et al. (2013) which also prove that individuals who have a high level of income will have higher financial literacy and vice versa for individuals who have a lower level of income.

Table 10. Estimation results of factors affecting the level of financial literacy of dairy farmers in Pangalengan sub-district.

Variable	*Coef.*	*Std. Err*	P>|t|
Income (million rupiah/month)	0,150***	0,031	0,000
Age (years)	-0,049**	0,020	0,018
Gender *dummy*	0,687	0,558	0,223
Last Education Level	0,902***	0,270	0,001
Other Occupation dummy	0,623*	0,372	0,098
Distance to Nearest Financial Institution (km)	-0,222***	0,071	0,003
Length of Farming Business (years)	0,016	0,020	0,428
R-Squared			0,529
Prob (F-Statistik)			0,000

Description: *) significant at the real level α=10%
**) significant at the real level α=5%
***) significant at the real level α=1%

Age variable negatively affects the level of financial literacy of farmers at a real level of 5 percent with a coefficient of 0.049, meaning that the financial literacy index will decrease by 0.049 every one-year increase in the age of farmers. In this case it can be concluded that the level of financial literacy of farmers decreases with age even though a good level of financial literacy is needed both at young and old age, this is because farmers in the younger generation have a superior ability to adapt to technological and educational developments, making it possible that farmers in the younger generation will have more ability in terms of financial management that is more up-to-date than farmers in the older generation (Santoso et al. 2020). In accordance with the findings in the field, older farmers tend to be more lazy in learning something new including related to managing finances, they prefer to do things according to the experience they have. However, the results in this study contradict the research hypothesis and findings of Afriza and Priminingtyas (2017) which state that age has a positive effect on the level of financial literacy because individuals with older age have more life experience and tend to have a better understanding of financial matters, so their level of financial knowledge can be positively correlated with their age. The findings in this study contradict the hypothesis because younger farmers are better able to understand and adapt to information related to the evolving financial management system compared to older farmers who apply the financial management system only based on experience.

The gender dummy variable has no significant effect on the level of financial literacy. Seen in Table 10, the probability value of the gender dummy variable is greater than the 10 percent real level. These results indicate that differences in the gender of the farmers studied do not have a

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Vol 9 (2): 368-384, June 2025

significant impact on their level of financial literacy. Pesudo (2013) also shows that gender does not have a significant impact on the level of financial literacy because gender differences of respondents do not guarantee a better level of financial literacy. However, based on SNLKI OJK 2016, it shows the influence of gender differences on the level of financial literacy because it is shown that men have a higher financial literacy index of 39.94 and women of 36.13.

The variable of the last education level of the breeder has a positive and significant effect on the level of financial literacy index at a coefficient of 0.902 with a real level of 1 percent. These results indicate that the higher the level of the last education taken by farmers will increase their financial literacy index by 0.902.

This shows that the higher the last education of farmers will have a level of financial literacy of farmers because the higher the level of education taken by individuals will increase their understanding of the components of financial literacy. Researchers found that highly educated farmers will be more adaptive to new knowledge that can facilitate their work, so that when they receive education about financial literacy it will be easier to understand it. This result is different from the results of Nurhidayanti and Anwar's research (2018) which found that the level of education did not have a significant effect on the level of financial literacy because it found the fact that not all respondents with low education had a low level of financial literacy.

The other job dummy variable shows a coefficient of 0.623 at a real level of 10 percent. Other work dummy variables have a significant effect on the level of financial literacy of farmers, where every farmer who has a job other than farming will have a higher financial literacy index of 0.623 compared to farmers who only rely on their livestock business. Based on the researcher's findings, farmers who have other jobs will be able to increase their income other than those generated from the livestock business and will increase the total income of the farmer's household which must be used in daily life so as to enable farmers to have good financial management skills. Research by Cahyono et al. (2006), Shalahudin and Susanti (2014) also found that the variable of side job ownership will increase income and improve financial literacy.

The distance to the nearest financial institution (km) variable has a negative and significant coefficient on financial literacy. The test results produced a coefficient of 0.222 at a real level of 1 percent, which means that every increase in the distance of farmers to the nearest financial institution by 1 kilometer will reduce the level of financial literacy by 0.222. This shows that the greater the distance of farmers to financial institutions will reduce their level of financial literacy and vice versa because the greater the distance of farmers to financial institutions will reduce their interaction with products and services provided by financial institutions because financial literacy also assesses the extent to which individuals use and interact with available financial products and services, especially from PT BPR Bandung Kidul which is a bank owned by all farmers in KPBS. Yarasevika (2016) and Ravikumar et at. (2013) also proved that the level of individual financial literacy is influenced by the distance to the nearest financial institution.

The variable farming duration (years) does not have a significant effect on the level of financial literacy of farmers, as the probability value is above the 10 percent significance level (Table 8). This suggests that longer farming experience does not directly improve farmers' financial literacy. We found that both farmers who are just starting out and those who have been farming for a long time have similar business and financial management patterns. This condition occurs because the livestock

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Vol 9 (2): 368-384, June 2025

business they run is hereditary, so there is no significant difference in the financial literacy index between farmers with long experience and farmers who have just started a business. This result is not in line with Aziz (2021) who said that the level of individual financial literacy is influenced by the length of business or experience he has gone through. There is no significant difference in the financial literacy index of farmers whose farming businesses are new and old, because the average farmer encountered is low in the financial behavior section because it is rare to find those who keep records and save in banks.

CONCLUSION AND SUGGESTION

Conclusion

1. Mayoritas peternak sapi perah di Kecamatan Pangalengan yang diteliti, yaitu 77%, berada dalam kategori kurang melek. Rata-rata indeks literasi keuangan yang dimiliki oleh peternak TPK Pangalengan adalah 20,67, TPK Cipanas 17,82, dan TPK Wates 16,90. Rendahnya literasi keuangan dapat menghambat akses layanan keuangan seperti kredit dan investasi. Koperasi dan lembaga keuangan seperti KPBS dan PT BPR Bandung Kidul perlu fokus pada program edukasi keuangan terarah untuk meningkatkan pemahaman peternak, terutama di wilayah dengan literasi rendah seperti Cipanas dan Wates.
2. The financial behavior component is in a condition that needs more attention because 74% of the farmers studied are in the low category caused by the low concern of farmers to the habit of saving/investment, preparation and recording of financial statements, and rarely separate personal finances and farm businesses. In the financial knowledge and attitude component, the average farmer is in the medium category (>50%). There needs to be strengthening of farmers' financial behavior such as recording and saving discipline to encourage changes in farmers' daily habits.
3. The results of the analysis of factors that influence the level of literacy are the variables of income, age, the latest level of education, dummy ownership of other jobs, and distance to the nearest financial institution. Meanwhile, the variables of length of farming business and gender dummy have no effect on the level of financial literacy of farmers. Literacy programs should be tailored to the age and education of farmers, with a focus on those with low incomes and far from financial institutions. In addition, financial services should be made accessible so that farmers can more freely utilize them without depending on length of experience or gender.

Suggestion

1. KPBS can organize regular training and mentoring programs to improve farmers' financial literacy, especially related to recording cash flow and preparing financial statements. The first step is to conduct a needs survey to determine the financial aspects that need the most attention. After that, KPBS can work with financial consultants or educational institutions to develop simple and easy-to-understand training modules.
2. Cooperation between the government, KPBS, and PT BPR Bandung Kidul is essential to improve access and financial services for farmers in Pangalengan District. One concrete step

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Vol 9 (2): 368-384, June 2025

that can be taken is to place PT BPR Bandung Kidul ATM machines in each village so that farmers can more easily conduct financial transactions. In addition, KPBS and BPR can jointly organize regular socialization to introduce savings and credit products to farmers. The moment of milk deposit can be utilized as a strategic time for BPR to provide direct education related to financial products and the importance of saving. With active interaction and easy access, farmers are expected to be more interested and aware of the financial services available.

3. Further research on farmers' financial literacy should be more exploratory by considering new variables that may influence literacy, such as farmers' motivation, family support, or local economic conditions. In addition, the use of a qualitative approach can provide a deeper understanding of farmers' perceptions and constraints in utilizing financial services. Research involving cross-disciplinary collaboration, for example with economists, psychologists or sociologists, could also provide a more holistic perspective. Thus, further research will not only enrich insights, but also produce more appropriate and relevant recommendations for the development of farmers' financial literacy.

REFERENCES

Adjid RM. 2020. *Foot and mouth disease: an exotic animal disease that must be alert of entry into Indonesia*. Wartazoa. 30(2):61–70. doi.org/10.14334/wartazoa.v30i2.2490

Afriza UF, Priminingtyas DN. 2017. Pengaruh Sosiodemografi Dan Kemampuan Kognitif Terhadap Literasi Keuangan Dalam Pengelolaan Keuangan Usaha tani Padi Pada Anggota Kelompok Tani Sri Mulyo 01 Dusun Mojorejo, Desa Pendem, Kecamatan Junrejo, Kota Batu. Prosiding : 128-133.

Anwar AI, Putri R, Sabir S. 2020. Analisis Faktor-Faktor yang Mempengaruhi Literasi Keuangan pada Petani Tanaman Pangan dan Holtikultura di Kabupaten Maros Sulawesi Selatan. *e-Journal* Ekonomi Bisnis dan Akuntansi. 7(2) : 125-130

Atkinson A, Messy FA. 2012. *Measuring Financial Literacy: Results of the* OECD. OECD *Working Papers on Finance, Insurance and Private Pensions*. No.15. https://doi.org/10.1787/5k9csfs90fr4-en.

Atkinson A, Messy FA. 2012. *Promoting Financial Inclusion Through Financial Education. OECD Working Papers on Finance, Insurance and Private Pensions*. 34(1). https://doi.org/10.1787/5k9csfs90fr4-en.

Aziz MA. 2021. Pengaruh Faktor Usia, Tingkat Pendidikan dan Lama Usaha terhadap Literasi Keuangan (Studi Kasus pada Pelaku UMKM di Kota Malang). Fakultas Ekonomi dan Bisnis, Universitas Brawijaya: Malang.

Budiraharjo K, Raharjo B, Solikhin S. 2021. "ANALYSIS OF FACTORS AFFECTING THE IMPORT OF DAIRY MILK (CASE STUDY: THE IMPORT OF DAIRY MILK IN INDONESIA)," Agrisocionomics: Jurnal Sosial Ekonomi Pertanian, vol. 5, no. 1, pp. 27-33, Jun. 2021.

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Vol 9 (2): 368-384, June 2025

Cahyono SA, Jariyah NA, Indrajaya Y. 2006. Karakteristik Sosial Ekonomi Yang Mempengaruhi Pendapatan Rumah Tangga Penyadap Getah Pinus Di Desa Somagede, Kebumen, Jawa Tengah. *E-Journal* Penelitian Sosial dan Ekonomi Kehutanan. Indonesia. Tersedia pada https://doi.org/10.20886/jpsek.2006.3.2.147-159

Chen H, Volpe RP. 1998. *An Analysis of Personal Financial Literacy among College Students. Financial Service Review*. 7(2):107-128, 6.

Definit, OJK, USAID. 2013. *Developing Indonesian Financial Literacy Index*. Jakarta: USAID.

[DISTAN] Dinas Pertanian. 2022. Jumlah Populasi Ternak (ekor) [Internet]. [diunduh 09 November 2023]. Tersedia pada https://satudata.bandungkab.go.id/dataset/jumlah-populasi-ternak-%28ekor%29.

Gulbahar MY, Davis WC, Guvenc T, Yarim M, Parlak U, Kabak Y B. 2007. *Myocarditis Associated with Foot-and-Mouth Disease Virus Type O in Lambs*. Veterinary Pathology 44: 589–99.

Kahneman D, Tversky A. 1979. *Prospect theory: An analysis of decision under risk. Econometrica*. 47(2), 263-291.

[KEMENTAN] Kementerian Pertanian. 2022. Outlook Komoditas Peternakan Susu. [internet]. [diunduh 20 Oktober 2023]. Tersedia pada https://satudata.pertanian.go.id/assets/docs/publikasi/FINAL_OUTLOOK_SUSU_2022.pdf

[KPBS] Koperasi Peternakan Bandung Selatan. 2020. Laporan Tahunan KPBS Pangalengan 2019. Bandung (ID) : KPBS

[KPBS] Koperasi Peternakan Bandung Selatan. 2021. Laporan Tahunan KPBS Pangalengan 2020. Bandung (ID) : KPBS

[KPBS] Koperasi Peternakan Bandung Selatan. 2022. Laporan Tahunan KPBS Pangalengan 2021. Bandung (ID) : KPBS

[KPBS] Koperasi Peternakan Bandung Selatan. 2023. Laporan Tahunan KPBS Pangalengan 2022. Bandung (ID) : KPBS

Malhotra NK. 2006. Riset Pemasaran, Pendekatan Terapan. Edisi Keempat. Jilid 2. PT Indeks. Jakarta.

Mohamad A, Shaari NF, Universiti Teknologi MARA. 2022. *Foot and mouth disease on cattle in peninsular Malaysia: towards a sustainable livestock. Journal of Sustainability Science and Management.* 17(5):149–156.doi:10.46754/jssm.2022.05.012.

Muljono P. 2012. Metodologi Penelitian Sosial. Bogor (ID): IPB Press.

[OJK] Otoritas Jasa Keuangan. 2022. Survei Nasional Literasi dan Inklusi Keuangan 2022. Jakarta (ID): OJK.

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Vol 9 (2): 368-384, June 2025

[OJK] Otoritas Jasa Keuangan. 2021. Strategi Nasional Literasi Keuangan Indonesia 2021-2025. Jakarta (ID): OJK.

Pesudo BCA, Rita MR. Apakah Mahasiswa Sudah Melek Keuangan. Dinamika Akuntansi Keuangan dan Perbankan, 3(1). Available at: https://www.unisbank.ac.id/ojs/index.php/fe9/article/view/2878

Santoso WI, Mukson M, Setiadi A. 2022. ANALYSIS OF POTENTIAL DEVELOPMENT OF DAIRY CATTLE AGRIBUSSINESS AND RELATED PRODUCTION FACTOR WITH MILK PRODUCTION IN SEMARANG. Agrisocionomics: Jurnal Sosial Ekonomi Pertanian, vol. 6, no. 1, pp. 71-82, May. 2022. https://doi.org/10.14710/agrisocionomics.v6i1.7863

Solikin N, Andaruisworo S, Yuniati E, Tanjungsari A, Ningrum A, Yusuf M, Yasin H. 2023. GELIAT USAHA PETERNAKAN SAPI RAKYAT PASCA WABAH PENYAKIT MULUT DAN KUKU DI KABUPATEN KEDIRI. AMMER : JOURNAL OF ACADEMIC & MULTIDICIPLINE RESEARCH, 2(03), 59 - 64. doi:10.32503/ammer.v2i03.3442

Sugiyono. 2006. Metode Penelitian Kuantitatif, Kualitatif dan R&D. Bandung: Alfabeta.

Sugiyono. 2017. Metode Penelitian Kuantitatif, Kualitatif dan R&D. Bandung: Alfabeta.

Yamane T. 1967. Elementary Sampling Theory. Englewood Cliffs. New Jersey: Prentice-Hall, Inc

Yarasevika S. 2016. Evaluasi Tingkat Literasi Keuangan Petani Padi dan Hortikultura di Kabupaten Tasikmalaya dan Garut. Bogor: Institut Pertanian Bogor.