

# Comparative Analysis of Beef Cattle Farms Performance Before and After the Existence of Microfinance Institutions

*by A Asnawi*

---

FILE	BEFORE_AND_AFTER_THE_EXISTENCE_OF_MICROFINANCE_INSTITUTIONS.PDF (348.25K)		
TIME SUBMITTED	14-OCT-2020 07:35AM (UTC+0700)	WORD COUNT	3048
SUBMISSION ID	1414467052	CHARACTER COUNT	16229

PAPER • OPEN ACCESS

## Comparative Analysis of Beef Cattle Farms Performance Before and After the Existence of Microfinance Institutions

To cite this article: Aslina Asnawi *et al* 2020 *IOP Conf. Ser.: Earth Environ. Sci.* **518** 012036

View the [article online](#) for updates and enhancements.

**ECS**  
Joint International Meeting  
**PRiME 2020**  
October 4-9, 2020  
Attendees register at **NO COST!**  
**PRIME**  
PACIFIC RIM MEETING  
ON ELECTROCHEMICAL  
AND SOLID STATE SCIENCE  
**2020**  
**REGISTER NOW**

## Comparative Analysis of Beef Cattle Farms Performance Before and After the Existence of Microfinance Institutions

Aslina Asnawi<sup>1</sup>, Andi Amidah Amrawaty<sup>1</sup>, and Nirwana<sup>2</sup>

<sup>1</sup>Faculty of Animal Husbandry, Hasanuddin University, Makassar, South Sulawesi, Indonesia

<sup>2</sup>Faculty of Economics and Business, Hasanuddin University, Makassar, South Sulawesi, Indonesia


E-mail: [aslinaasnawi@yahoo.com](mailto:aslinaasnawi@yahoo.com)/[aslinaasnawi@unhas.ac.id](mailto:aslinaasnawi@unhas.ac.id)

**Abstract.** The existence of Microfinance Institutions (MFIs) in rural areas is one solution for farmers in general, including beef cattle farmers. The limitation of capital ownership in farmers is one of the factors that cause the number of livestock ownership is also relatively small and low feed quality. The existence of MFIs expected can encourage the motivation of farmers in running their livestock business, increase income-generating and cattle ownership. This study aimed to examine the differences in revenue and cattle owned between before and after the farmer joined in the MFIs. Data collection using a questionnaire. This research was explanatory research and uses comparative test analysis. The results of the study showed that there were differences in farmers' revenue and the number of cattle ownerships before and after joining the MFIs. This was due to the presence of capital or funds that can be accessed from informal funding institutions, generally, farmers used these funds to buy better breed, improve feed quality hence, it affected the performance of cattle production. This condition can affect the amount of cattle ownership and revenue obtained by farmers. Therefore, the role of MFIs was very large for the development of livestock businesses in rural areas.

### 1. Introduction

Limited ownership of capital is one of the obstacles in agriculture sectors besides the technical problems of production and relatively low access to information. The amount of capital owned by farmers is generally only sufficient to finance livestock business. However, the farm size is relatively small. The lack of capital was strongly felt when farmers will increase the business scale. Therefore, the alternative was to find sources of financing from both formal and informal institutions.



 Content from this work may be used under the terms of the [Creative Commons Attribution 3.0 licence](https://creativecommons.org/licenses/by/3.0/). Any further distribution of this work must maintain attribution to the author(s) and the title of the work, journal citation and DOI.

Formal financing such as banking has been provided enough credit to develop agricultural business in general. However, farmers were still face obstacles in accessing these funds. This was due to several factors including the unavailability of collateral, the procedure for proposing credit is considered time consuming, and the lack of information [1], [2]. The farmers generally did not have collateral monthly payments were not in accordance with the farms they run and small farmers were generally not familiar with complicated administrative procedures [8]. In addition, the cooperation between farmers and financial institutions was still relatively low [3]. Therefore, the role of Microfinance Institutions in rural areas was needed to overcome some of these obstacles in order to alleviate poverty and encourage rural economic growth.

According to Law of the Republic of Indonesia Number 1 of 2013 concerning Microfinance Institutions, microfinance Institutions (MFIs) were financial institutions specifically established to provide business development services and community empowerment, through loans or financing in micro-scale businesses, savings management, or providing business development consultancy [5]. The existence of the MFIs is expected become an intermediary way to improve economic activity.

One form of MFIs in Indonesia was the Agribusiness Microfinance Institution. It was a financial institution that has been used by farmers to save and borrow funds even in small platforms. The Farmers Group Association who coordinates Agribusiness Microfinance Institution was a financial institution at the farmer level. This program was based on government policy through the Ministry of Agriculture in 2008 concerning Rural Agribusiness Development. It have been implemented refers to the basic pattern stipulated in Minister of Agriculture Regulation No. 16/regulation of the minister of agriculture/OT.40/3/2009 and it was revised through Regulation of the Minister of Agriculture No. 06/Regulation of the minister of agriculture/OT.140/2/2015 concerning General Guidelines for Rural Agribusiness Development. The guideline consisted of education and training for business development, assistance and provision of venture capital assistance facilities to farmers. The program was coordinated by the Farmers Group Association.

Several farmer groups that have established by the Agribusiness Microfinance Institution continuing their activities in raising funds among the farmers. There was one microfinance institution in Sinjai District namely the Sipakainga MFIs. This was supported by the commitment of the farmer group to create a culture of saving and mutual help among group members. This condition was the strength of the joining farmers group to develop MFIs in their regions. In addition, farmers were aware that their MFIs was able to increase the scale of business, financing operational activities and other needs related to the livestock business. It is not only an increase in the number of cattle but also an increase in the income. The aimed of the research was to examine the differences in revenue and cattle owned between before and after the farmer joined in the MFIs.

## 2. Materials and Methods

This research was conducted in Sinjai Regency, South Sulawesi, Indonesia. In this area, there were MFIs which are the pioneers of the Agribusiness Microfinance Institution. It has remained concentrated in collecting funds through giving loan among members and returned it back to members who need funds

The number of respondents in this study were 32 people who were members of the Farmers Group Association. This research begins by conducting a preliminary survey, identifying The Farmers Group Association that has MFIs. Data collection using a questionnaire instrument. Secondary data were collected from the two related agencies to determine the Farmers Group

Association that would be the object of this study. In addition, primary data from Farmers Group Association members and administrators were related to respondent' characteristics, loan amounts, developments in MFIs, distribution of the fund and other data needed in this study.

Then the data were analysis using descriptive statistical analysis. The impact of microfinance institutions was tested using the average difference test for two paired samples (paired sample t-test). This different test model was used to analyze the pre-post test research model. The different test is used to evaluate specific treatments in the same sample at two different observation periods [6] In this research, the data was analyzed the difference in the number of livestock ownership and income before and after the farmers joining the MFI. T test with formula from [7]:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2} - 2r\left(\frac{S_1}{n_1}\right)\left(\frac{S_2}{n_2}\right)}}$$

$\bar{X}_1$  = sample average 1

$\bar{X}_2$  = sample average 2

$S_1^2$  = sample variant 1

$S_2^2$  = sample variant 2

r = correlation between two samples

$S_1$  = standard deviation 1

$S_2$  = standard deviation 2

### 3. Results and Discussion

#### 3.1. Characteristics of Beef Cattle Farmers

Respondent characteristics were collected through a questionnaire with several MFIs members. Data was analysed using descriptive statistics as in Table 1.

Most of the respondents were male 93.75%. This was related to the beef cattle business in the area which is dominated by men. The average age of farmers belonging to in the productive age category and most of them were aged 38-44 years and 31-37 years, respectively 25% and 21.88%. This shows that the age of respondents was generally in the productive age category. There is greatly affects the performance of farmers in raising their livestock. Farmers who have a young age generally have a high curiosity and interest to adopt the introduction of technology will also be higher [4]. This was very supportive in running their livestock business.

The highest level of education of LKM members was high school graduated by 37.5% while the others were elementary and junior high schools respectively by 31.25%. This shows that the level of education of MFI members in the study area is high enough. It indirectly influences the knowledge and awareness of farmers to be incorporated in both the MFIs and farmer groups. This is in line with [9], that a person's mindset can change because of level of education.

**Table 1.** Characteristics of Beef Cattle Farmers

Characteristics	Attribute	Percentage (%)
Sex	Male	93.75
	Female	6.25
Age (years)	31 – 37	21.88
	38 – 44	25.00
	45 – 51	15.62
	52 – 58	18.75
	59 – 65	15.62
	62 - 71	3.13
Education	Elementary school	31.25
	Junior high school	31.25
	Senior high school	37.50
Farm experience (years)	4 – 10	37.50
	11 – 17	46.88
	18 – 24	9.38
	25 – 31	0.00
	32 – 38	3.12
	39 - 45	3.12

The experience of farmers in running their cattle farms were varies, but most of them have been raising for more than ten years, namely 11-17 years (46.88%). Some of respondent were raising 32-38 years and 39-45 years, respectively 3.12%. The length of time for raising cattle was due to the fact that they generally had experience since childhood and have been taught from generation to generation from their families. The experience of raising livestock had greatly influences to the way they care for their beef cattle's and in handling symptoms of diseases. The longer they run a business, the more experience they were.

### 3.2. Characteristics of Beef Cattle Farms

Beef cattle farms characteristics were collected through a questionnaire which was a research instrument and direct interviews with several MFIs members. Then analyzed using descriptive statistics as in Table 2.

**Table 2.** Characteristics of Beef Cattle Farms

Characteristics	Frequency	Percentage (%)
Number of Cattle (head)	2 – 3	31.25
	4 – 5	18.75
	6 – 7	28.12
	8 – 9	15.62
	10 – 11	3.13
	12 – 13	3.13
Revenue (IDR/head) (000)	8.750 – 9.250	28.12
	9.265 – 9.755	43.75
	9.760 – 10.260	8.00

The number of livestock raised by farmers who are members of the MFIs were 2-3 head/cattle 31.25% followed by livestock ownership of 6-7 head and 4-5 head/cattle, respectively 28.12% and 18.75%. The low number of cattle raised by farmers was influenced by several things, namely the relatively low number of capital ownership, the ability of farmers to take care of their livestock and the time allocation providing forage every day.

Revenues obtained by farmers were mostly in the range of 9,265,000- 9,755,000 IDR, 43.75%. The income was related to the price per head/cattle. While the price of cattle is largely determined by the body weight of the beef cattle. Beef cattle that have large body weight were very much influenced by the quality of the feed provided, good maintenance management and good breed of cattle. Therefore, to produce higher income, the technical aspects of production and good maintenance management are needed to be considered by farmers.

### 3.3. Comparison of Beef Cattle Business Performance Before and After the Existence of Microfinance Institutions

Beef cattle business performance in this study includes the number of cattle and the amount of revenue obtained by farmers. The description is presented in Table 3.

**Table 3.** Number of Livestock and Receipts Before and After Joining MFIs

	Before		After	
	Total	Percentage (%)	Total	Percentage (%)
Number of Cattle (head)	1-2	59.38	2-4	40.62
	3-4	34.37	5-7	37.50
	5-6	6.25	8-10	18.75
			11-13	3.13
Total of	9000-17083	15.62	11000-23500	21.875
Revenue	17084-25167	43.75	23501-36001	18.750
(IDR) (000)	25168-33251	25.00	36002-48502	21.875
	33252-41335	9.37	48503-61003	18.750
	41336-49419	3.13	61004-73504	12.500
	49420-57500	3.13	73505-86005	6.250

The number of beef cattle owned by farmers before joining the MFIs was mostly 1-2 head/cattle (59.38%) and 5-6 head/cattle (6.25%). The average number of cattle was 3 head/cattle (32 farmers). However, after joining the MFI the number of beef cattle ownership increased, a majority of 2-4 head/cattle (40.62%), even the largest number of beef cattle were up to 11-13 head/cattle (3.13%). This shows that after farmers join the MFI's they can get additional capital used to buy cattle. In can be said that the MFI has an impact on increasing the scale of the farmer's business.

Similarly, the total revenue obtained has been increased. The revenue data is presented in Table 3. The amount of revenue was determined by a large number of cattle raised. Th higher cattle ownership, the more potential income.

If calculated in detail, the average revenue increase before joining the MFIs and after joining the MFIs. The farmers' revenue was 9,126,000–9,887,000 IDR/head/cattle before joining the MFIs. In addition, after joining the MFIs, the farmers' revenue was increase up to 9,145,0,00-10,581,000 IDR/head/cattle.

**Table 4.** Paired Samples Test for Number of Beef Cattle

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Number of Cattle Before and After MFIs	3.0625	2.2424	.3964	-3.8710	2.2540	7.726	31	.000

P =  $\alpha$  5%.**Table 5.** Paired Samples Test for Farmers Revenue

Pair		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
1	Revenue before and after the MFI	-19000000	17823507.49	3150780.753	-25426059.7	-12573940.3			
			t	df	Sig. (2-tailed)				
			-6.030	31	.000				

Paired Sample Test results for the number of cattle (Table 4.) show that the significance value was 0.01 ( $P < 0.05$ ) so that the results of the number of cattle between before and after the presence of MFIs experienced significant changes. Based on descriptive statistics, the number of animals before and after the MFIs is proven that the number of beef cattle after the MFIs is higher. So, it can be concluded that MFIs can increase the number of cattle owned by farmers.

For the farmers' revenue, the results of the Paired Sample Test show that the significance value was 0.001 ( $P < 0.05$ ) so that the revenue of farmers between before and after the presence of the MFIs experienced a significant change as well. Descriptive statistical results also show that the total of revenue before and after the presence of MFIs has increased. This means that by joining to an MFIs it can increase the income received by the farmer, both potential and average revenue per animal.

#### Acknowledgment

Thank you to the Directorate of Research and Community Service, the Directorate General of Research and Technology Strengthening and Development of the Ministry of Research, Technology and Higher Education of the Republic of Indonesia as a source of funding from the University's Leading Applied Research (Peningkatan Terapan Unggulan Perguruan Tinggi/PTUPT). Acknowledgments to the Sinjai District Animal Husbandry and Animal Health Office

of South Sulawesi Province, the Food Crops, Horticulture and Plantation Office of Sinjai District, the Farmers Group and the Sipakainga Farmers Group and all of their members who have assisted in the implementation of this research.

#### 4. Conclusion

The existence of microfinance institutions in rural areas has been an impact on increasing the number of beef cattle and the total of revenue received by farmers. This was because the management of microfinance institutions is very committed to provide the funds needed by their members even though the amount is relatively small. Moreover, the farmers were able to manage their farm it can produce better cattle performance.

#### References

- [1] Ashari 2006. Potential of Microfinance Institutions in Rural Economic Development and Development Policies. Vol. 4 No. 2. Pp 146-164.
- [2] Asnawi.A. 2013. Determinant of Funding Accessibility and its Impacts to The Performance of Beef Cattle Breeding Enterprises in South Sulawesi Province, Indonesia. *European Journal of Business and Management*. Vol.5, No.29. Pp 77-83.
- [3] Asnawi A, Sirajuddin, S. N, Lestari, V.S. 2014. How do Lending Relationship Affect to Credit Accessibility in Cattle Farm in Indonesia? *European Journal of Sustainable Development*, 3, 4. Pp 359-364.
- [4] Chamdi, AN 2005. Characteristics of Bali Cattle Genetic Resources and Alternative Conservation Patterns. *Biodiversity* 6(1): 70-75.
- [5] Directorate of Agricultural Finance. Directorate General of Agricultural Infrastructure and Facilities. Ministry of Agriculture. 2014. the Agribusiness Microfinance Institution Development Guidelines on Rural Agribusiness Developmentthe Farmers Group Association.
- [6] Pramana. 2012. Law of the Republic of Indonesia Number 1 of 2013concerning Microfinance Institutions. House of Representative of Indonesia Republic.
- [7] Riduwan and Sunarto, H. 2014. *Introduction to Education, Social, Economic, Communication, and Statistics Business*. Bandung. Alfabeta. p. 125.
- [8] Supriatna, A. 2012. Accessibility of Small Farmers in Credit Sources Agriculture in Village Levels: Case Study of Rice Farmers in West Nusa Tenggara. *Soca. Agricultural Social Economic Journal*.
- [9] Saridewi. TR and Siregar AN, 2010. The Relationship Between the Role of Extension Workers and Technology Adoption by Farmers on Rice Production in Tasikmalaya Regency. *Journal of Agricultural Counseling*. Vol.5 No.1: May 2010. p. 55-61.

# Comparative Analysis of Beef Cattle Farms Performance Before and After the Existence of Microfinance Institutions

## ORIGINALITY REPORT

% **13**  
SIMILARITY INDEX

% **6**  
INTERNET SOURCES

% **4**  
PUBLICATIONS

% **11**  
STUDENT PAPERS

## PRIMARY SOURCES

**1** Submitted to University of Edinburgh  
Student Paper % **3**

**2** Submitted to Universitas Brawijaya  
Student Paper % **2**

**3** [research.aalto.fi](https://research.aalto.fi)  
Internet Source % **2**

**4** Submitted to Universitas Sultan Ageng  
Tirtayasa  
Student Paper % **1**

**5** [irphouse.com](https://irphouse.com)  
Internet Source % **1**

**6** Submitted to Universitas Negeri Semarang  
Student Paper % **1**

**7** Submitted to HELP UNIVERSITY  
Student Paper % **1**

**8** [repository.unhas.ac.id](https://repository.unhas.ac.id)  
Internet Source % **1**

9

Submitted to Universitas Samudra

Student Paper

% 1

10

Karina Kasztelnik. "Innovative Empirical Model for Predicting National Banks' Financial Failure with Artificial Intelligence Subset Data Analysis in the United States", Open Economics, 2020

Publication

<% 1

11

pt.scribd.com

Internet Source

<% 1

12

www.jagstour.com

Internet Source

<% 1

13

Yeti Sumiati, Tatty A. Ramli, Jejen Hendar, Hilmi Ayu, M. Dwivo Rahayu, Rais M. Shidiq.

"OBTAINING HALAL CERTIFICATE FOR PROCESSED ANIMAL FOOD IN GARUT REGENCY IS CONNECTED WITH THE REQUIREMENTS OF HALAL ABATTOIR ACCORDING TO THE REGULATION OF THE MINISTER OF AGRICULTURE OF THE REPUBLIC OF INDONESIA", International Journal of Research -GRANTHAALAYAH, 2019

Publication

<% 1

EXCLUDE QUOTES ON

EXCLUDE ON

EXCLUDE MATCHES < 5

WORDS

## BIBLIOGRAPHY