



Analysis of *Sonok* Cattle Breeders and Livestock Business Activities

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Abstract | This study is to examine the effect of the demography of cattle breeders on livestock business activities. The demographic constructs discussed include age, education, long-time breeding experience, family dependents, and the number of livestock. Our data were drawn from local breeders in Pamekasan, Indonesia, known as a centre of *Sonok* cattle breeders. To examine the interaction effects, we used an IBM SPSS Statistics 25. Our study suggests that age, education, long-time breeding experience, family dependents are not related to cattle business activities. Moreover, we find that number of livestock is positively and significantly associated with cattle business activities. The theoretical and practical implications are discussed.

Keywords | Cattle breeders, *Sonok*, Livestock business activities, Demography of breeders, Pamekasan

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INTRODUCTION

Madura Island is a plateau without volcanoes. Geologically, Madura Island is a hot and dry area, with temperatures of 27-34 Celcius, rainfall of 1600 mm/year, the humidity of 80%, and dry soil conditions. Of course, these geographic and topographical characteristics affect the agroecosystem's state and affect the livestock capacity on Madura Island. It appears from 2010 to 2019 (Regional Animal Husbandry Service of East Java Province, 2019).

Nationally, the quality of cows in Madura is well known (Widi et al., 2014). Its uniqueness has a huge body and is resistant to various conditions. It has been suggested in Hastutiek et al. (2019) study that most cow in Madura quickly adapts well to different local environments. In addition, the characteristics of cows in Madura are identical with good meat quality, fast growth rate, high feed efficiency, and are accessible to market (Zali, 2018). It is very rationale for many local governments in Indonesia

to consider cows in Madura as one of the best cows for national cattle breeders (Nurgiartiningsih et al., 2016; Siswijono et al., 2020).

Geologically, Madura Island has four regencies (such as, Bangkalan, Sampang, Pamekasan, and Sumenep). However, the center of best cattle breeders is located in a Pamekasan regency. In short, Pamekasan is considered the best cattle breeder among other regencies because most cattle breeders adopt the traditional techniques by considering a traditional culture (*Sapi sonok*) (Zali, 2018). Therefore we believe that this paper brings important implications for a study on cattle breeding. We examine the characteristics of Madura cattle breeders in terms of their livestock businesses. The rationale is that they did not enter formal educations but could produce good cattle quality in practice. Then the problem of the number of cattle ownerships in Pamekasan can be said not aggressive. This study explicitly examines their demographic variables, such as age, education, long-time breeding experience, family dependents, and the number of livestock (Wardhani, 1994).

The data collection technique used in this research was by distributing questionnaires. The questionnaires were given directly to the respondents and the researchers on the same day took them. A survey took place from May to June 2020. The number of questionnaires was analysed in this study is 50 questionnaires. For the context of the current research, this number is reasonable because of two reasons. First, we limited our sample to people who keep maintaining traditional techniques by considering a conventional culture (*Sapi sonok*). Second, the number of cattle breeders concerning livestock businesses in Pamekasan is limited (Hartati et al., 2021). These situations might affect the number of questionnaires analysed in this study. For analysis data, we used an IBM SPSS Statistics 25. It is one of the most widely used application programs for statistical analysis in the social sciences, including in a study of veterinary and animal science (Petrie and Watson, 2013).

Table 1: Demographic information of respondents.

No	Parameter	Number of people	Presentase
1	Age		
	a. 31-40	8	16%
	b. 41-50	23	46%
	c. 51-60	12	24%
	d. 61-70	7	14%
2	Education		
	a. Primasry school	22	44%
	b. Junior Hight School	24	48%
	c. Senior Hight School	3	06%
	d. Bachelor	1	02%
3	Family dependents		
	a. 1-2 person	7	14%
	b. 3-4 person	27	54%
	c. 5-6 person	16	32%
4	Long-time breeding		
	a. 1 year	2	4%
	b. 2 year	8	16%
	c. 3 year	10	2%
	d. 4 year	16	32%
	e. 5 year	12	24%
	f. 6 year	2	4%
5	Number of livestock (LU)		
	a. 1	31	62%
	b. 2	12	24%
	c. 3	6	12%
	d. 4	1	2%

RESULTS AND DISCUSSION

RESPONDENT CHARACTERISTICS

Table 1 shows that, on average, the participants are in productive age, ranging from the age of 41-50 years with a percentage of 46%, and 48% respondents have graduated

from junior high school and 02% have graduated from college.

In terms of experience, respondents have an experience of 4 years, and only 4 percent have one-year experience, and six-year experience. In general, most participants in terms of experience have met the main criteria of this study. Then, the number of dependents of the respondent's family is moderate. It can be seen that 54% of the respondents have 3-4 dependents.

Suppose looking at the respondents' number of Sonok cattle ownership, it remains low. This can be seen from 31% of respondents who on average own 1 Sonok cattle. According to Riszqina et al. (2014), the number of livestock ownership for Indonesian smallholder farms to be known as a cattle business at least must have 1-3 heads of cattle. However, this is the uniqueness of raising Sonok cattle in Madura. They tend to focus on quality rather than quantity. If referring to Figure 1, the maintenance of Sonok cows is unique. The cows look different compared with other cows in other areas in Indonesia (Zali, 2019).



Figure 1: Display/ demonstration of sonok cattle.

Furthermore, the following section discusses the main results of the study. In short, the correlation analyses are provided in Table 2.

RELATIONSHIP BETWEEN AGE (X1) AND SONOK CATTLE BUSINESS

From Table 2, it can be seen that the significant value between business scale and age is 0.759. Because using a two-way test, the significant value is divided to produce 0.379. When compared with $\alpha = 0.05$, the sig. greater than α value ($0.379 > 0.05$), which means that age has no significant correlation to the business scale of Sonok cattle. This insignificant result is in line with the research of Sirajuddin and Kurniawan (2016), which states that

the age of the breeders does not affect the scale of the cattle business because farmers who are of productive age pay more attention to their farming business rather than livestock business. In Pamekasan rural areas, generally, when people aged 41-50 years, they prefer to be farmers, cattle breeders, or both. Then our result might be influenced by this traditional mindset.

Table 2: Regression results.

Characteristics	Scale enterprises	
	R	p value
Age (X1)	- 0,044	0,759
Education (X2)	0,058	0,689
Longtime Breeding (X3)	0,110	0,447
Family Dependents (X4)	-0,095	0,512
Number of Livestock (X5)	1,000	0.000

Soekartawi (1988) states that elderly farmers are usually passionate about local tradition. So, it is challenging to provide insights that can change their way of thinking and perspective to increase living standards. This farmer is often apathetic about the new technology. Soekartawi (1988) also notes the higher the age of a person, the less dependence on others. The younger the breeder age (productive age 20-45 years), the taste curiosity about something can be higher, and interest to adopt towards the introduction of technology is also getting stronger. How the traditional people look can be seen in Figure 2. From our short interview with those people, their occupations are both farmers and cattle breeders. As shown in Figure 2, they prefer to keep maintaining the traditional lifestyle.



Figure 2: Display of Sonok cattle culture farmer in Madura island.

RELATIONSHIP BETWEEN EDUCATION (X2) AND THE SONOK CATTLE BUSINESS

Table 2 shows that the significant value between the

scale of business and education is 0.689, meaning that education is not significantly correlated with the business scale of Sonok cattle. A traditional perception influences this result that primary or junior school is enough to raise Sonok cattle. As suggested in Table 1, the respondents' education is relatively the same, so it does affect our result in terms of education. This result indicates that breeders with a low level of education might influence how to raise the cattle. Madurese people tend to increase the cattle just to maintain traditional culture (Zali, 2018). This result is in accordance with Soekartawi (1988) opinion, which states that in practice, the relationship between the level of education and the level of agricultural science adoption should be indirect, except for those who learn specifically about these new innovations at school.

Moreover, this result has strong support from a study carried out by Hidayah (2015), which states that traditional cattle breeders' education level in Indonesia is still relatively low. And unfortunately, it negatively affects the speed to adopt new technology and knowledge. If referring to Hidayah (2015), the education level of traditional cattle breeders in Indonesia remains a serious concern. Figure 3 shows how the knowledge transfer about cattle breeders in Pamekasan are routinely conducted.



Figure 3: Display of Sonok cattle culture education in Pamekasan, Madura.

RELATIONSHIP BETWEEN LONG-TIME BREEDING (X3) AND THE SONOK CATTLE BUSINESS

Table 2 found an insignificant relationship between long-time breeding (X3) and the Sonok cattle business. This result seems to be consistent with the prior discussion that Sonok cattle in Pamekasan are not prioritised for business activities. Even though the breeders in Pamekasan have long been getting experience in cattle breeding, they are not interested in integrating it into commercial or business purposes. They prefer to share their knowledge only to keep the traditional culture (Zali, 2018). Figure 4 captures some

local breeders who have long-time breeding experience.

Most of those breeders believe that a business of livestock is important, but traditional culture preservation is more important than a business of livestock. This result might be affected by the level of education of the breeders. As previously stated, most of the present study participants are those who have lower formal education. This study has a different result from a study completed by Iskandar and Arfa'I (2007). The difference in research context causes this difference. Iskandar and Arfa'I (2007) are much more concerned with breeders with entrepreneurship orientation. Indeed, they argue that there is a strong relationship between breeding experience and business activities. The breeder is more likely to use their experience as guidelines for running livestock businesses.



Figure 4: The breeders with long-time breeding experience.



Figure 5: The dependents of the Sonok cattle breeder family in the contest of traditional culture.

THE RELATIONSHIP BETWEEN THE NUMBER OF DEPENDENTS (X4) AND THE SONOK CATTLE BUSINESS

This relationship, as suggested by Table 2, is not significant.

This result means no connection between the number of dependents of breeders and the Sonok Cattle Business. Family support for raising cattle is essential, but not for commercial purposes. The breeders' family members are so happy to see their cattle participate in the contest of traditional culture, see Figure 5. When arising Sonok cattle, the breeders have a high social status. As such, they are supportive.



Figure 6: Number of cattle in one cage for the Sonok cattle breeder.

This result has a different view of the role of dependents of breeders, as sounded by Anggraeny and Prita (2017) and Sari et al. (2019). In general, those people argue that many dependents of breeders have a negative relationship with livestock businesses. As explained, it can be a burden for cattle breeders, for instance, in terms of fund allocation between family and cattle breeding activities. In the context of the present study, we view this concern differently, as previously discussed. The support given by the dependents of breeders is essential, even though the activities are not prioritised for livestock businesses. Therefore, we take this result as a novel of this research.

THE RELATIONSHIP BETWEEN NUMBER OF LIVESTOCK (X5) AND THE SONOK CATTLE BUSINESS

In this relation, our study has empirical support. As suggested in Table 2, it shows a positive and significant relationship between the number of livestock and the Sonok cattle business. This result emphasises that when Sonok cattle breeders have good cattle, they prioritise it as a business. The problem in Pamekasan cattle breeding is that they do not have suitable animal cages, see Figure 6. Everything are made by poor and traditional ways.

In the context of the sonok cattle breeder, this result needs careful interpretation. The term cattle business is not interpreted conventionally, for example, livestock production for consumption (Lindawati et al., 2020;

Marisa and Sitepu, 2020). But it is understood as a future investment. Most Madurese Sonok cattle breeders believe that their cattle are important assets that cannot be exchanged by short-term commercial purposes.



Figure 7: Sonok cattle in Pamekasan.

CONCLUSIONS AND RECOMMENDATION

This study examines the effects of the demographic Sonok cattle breeders on cattle business activities. The examined demographic constructs include age, education, long-time breeding experience, family dependents, and the number of livestock. The study suggests that age, education, long-time breeding experience, family dependents are not related to cattle business activities. These results are mostly caused by the traditional assumptions of the local breeders that Sonok cattle are only prioritised for maintaining the traditional culture. Moreover, we find that the number of livestock is positively and significantly related to cattle business activities. This result is influenced by the breeders' mindset that Sonok cattle is assumed as a future investment.

Our results have theoretical and practical implications. For theoretical implications, our study enriches the literature of factors affecting cattle business activities (Rustinsyah, 2019; Marisa and Sitepu, 2020). We provide different perspectives on livestock farming and its impact on cattle business activities. For practical implications, our study offers early evidence for local government, especially Pamekasan, to enhance cattle business activities. Because Sonok cattle have district quality, see Figure 7, it seems essential if the government supports the breeders with adequate education and equipment, particularly for broadening their business orientation. Most of them inherently believe that Sonok cattle are only for maintaining traditional culture, so it would be beneficial if it is also directed to conventional cattle businesses.

NOVELTY STATEMENT

This study contributes to the literature examining the effect

of the demography of cattle breeders on livestock business activities. Most of prior study are just focused on economical and sociological aspects. Our study looks at livestock business activities from cattle breeders' characteristics.

AUTHOR'S CONTRIBUTION

Moh Zali formulated the original ideas, performed a filed study and drafted the manuscript. Nur Ihsan and Bambang Ali Nugroho conducted statistical analyses. Kuswati, Umi Wisaptiningsih Suwandi, and Suyadi provided critical comments and conducted additional analyses. Riszqina performed a filed study and prepared an article for publication.

CONFLICT OF INTEREST

The authors have declared no conflict of interest.

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