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THE MODELING OF BEEF-CATTLE BREEDING ACTIVITY BASED ON LABOR USAGE, INCOME, AND EXPENSE OF BREEDER HOUSEHOLD

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ABSTRACT:

Purpose of the study Beef-cattle breeding development model involves few labors, including Grass Collecting Labor (TKSPRMP) and On-Family Cattle Breeding Labor (TKSPDKL). Metodology make regression analysis and survei methode in Beefcattle in Jember . Result of partial test on research parameters indicates that only number of beef-cattle is with obvious effect on grass collecting labor, and it is indicated by Pr>|t|=0.004 (<0.10). Other result shows that some variables, such as number of household member, number of beef-cattle, household income, and cattle development pattern, have simultaneous effect on the use of on-family cattle breeding labor. Novelty/Originality of this study is the use of Outdoor Family Rice Farmers (TKUTLKL), together, the variable land area, income from rice fields, family income and cattle development patterns have a significant effect on the use of laborers outside the family's paddy fields. The coefficient of determination (R2) for this model is 0.56503, which means that 56.503% of the diversity of labor use in paddy fields outside the family can be explained by the variables of paddy yield, family income and cattle development patterns, while 43,497%.

KEYWORDS: Household, Beefcattle, Breeding

INTRODUCTION:

The management of people livestock enterprises in Jember Regency is greatly relying on several attributes, such as resource availability, environmental biophysic condition, and community culture. The lack of resource may put breeders into difficulties especially those who still apply traditional livestock production system. Resource scarcity is also enough reason to bring a complex problem into beef-cattle breeding development. Moreover, success level of of beef-cattle breeding development is always varying from one breeder to another. It signifies a fact that any resources in possession of breeders would influence their beef-cattle production. This research is aimed to create the model of beef-cattle breeding activity based on labor usage, income, and expense of breeder household.

LITERATURE REVIEW:

Elizabeth (2007) found in her research that from one maintenance cycle for fattening cows, farmers benefit about Rp. 1.25 million

per head, in addition to the acquisition of the sale of puppies (when raising more than one male and female cow). Fattening cattle in Gerokgak District for 300 days gave an increase in body weight from 250 kg / head to 400 kg / head or 1.33 kg / head / day by being fed 50 kg of forage / head / day and 26 kg / head / concentrate day, and using 45 HOK, the income from cattle is Rp.6,000,000 / head with the cost of fattening Rp.4,748,500 / head. In addition to income from selling cattle and pigs (adult and child / feeder), some farmers also receive additional income from selling livestock manure to other farmers who need it as pukan (manure). Cow dung can be sold for around Rp.50,000 / ton. During one maintenance cycle, an average adult cow can produce about 7 tons of manure.

METHODOLOGY:

Current research involves 33 equations consisting of 12 structural equations and 21 identity equations. All these equations are explained as follows:

(1) TKDKL = TKUTDKL + TKBUNDKL + TKSP;
(2) TKLKL = TKUTLKL + TKBUNLKL;
(3) TKSPRMP = A0 + A1*TKDKL + A2*JSP + A3*D ;
(4) TKSPDKL = B0 + B1*ARTP + B2*JSP + B3*INCKL + B4*D;
(5) TBSP = BKONSP + BOBTSP + BHMT + HABIT + BSPL;
(6) BKONSP = C0 + C1*JSP + C2*BHMT + C3*D ;
(7) BHMT = D0 + D1*JSP + D2*D ;
(8) RESP = E0 + E1*JSP + E2*JKON + E3*TKSPRMP + E4*D ;
(9) KSP = RESP - TBSP;
(10) KSPBLN = KSP/12;
(11) TKUT = TKUTDKL + TKUTLKL;
(12) TKUTLKL = F0 + F1*LHN + F2*KUT + F3*INCKL + F4*D ;
(13) TKUTDKL = G0 + G1*LHN + G2*KUT + G3*D ;
(14) TBUT = PESTUT + PPKUT + UPAHUT;
(15) PPKUT = H0 + H1*INCKL + H2*D ;
(16) REUT = I0 + I1*LHN + I2*TKUTLKL + I3*D ;
(17) KUT = REUT - TBUT ;
(18) KUTBLN = KUT/12 ;
(19) TKBUN = TKBUNDKL + TKBUNLKL;
(20) TKBUNLKL = J0 + J1*LHN + J2*TKUTLKL + J3*D ;
(21) TKBUNDKL = K0 + K1*LHN + K2*D ;
(22) TBBUN = PESTBUN + PPKBUN + UPAHBUN;
(23) REBUN = L1*LHN*TKBUN + L2*D;
(24) KBUN = REBUN - TBBUN;
(25) KBUNBLN = KBUN/12;
(26) KULN = BURUH + JASA + TUKANG + DAGANG + PDLAIN + REBUAH;
(27) KULNBLN = KULN/12;
(28) PEKL = KL + KMK + GULA + BERAS + KAIN + KOSMETIK + IPD + NYAMUK + LISTRIK + LAIN;
(29) PEPGN = KL + KMK + GULA + BERAS;
(30) PENPGN = KAIN + KOSMETIK + IPD + NYAMUK + LISTRIK + LAIN;
(31) REKL = KSP + KUT + KBUN + KULN;
(32) INCKL = REKL - PEKL;
(33) INCKLBLN = INCKL/12;

DISCUSSION / ANALYSIS:

Partially, of eight independent variables, three of them have obvious effect on number of beef-cattle. These variables are breeding income, concentrate cost, and non-feed expense. Breeding income has an obvious positive effect on number of beef-cattle as indicated by Pr>|t| = 0.000 (<0.10). It signifies a presumption that the raise of breeding income will increase number of beef-cattle. Concentrate cost has also an obvious positive effect on number of beef-cattle as shown by Pr>|t| = 0.008 (<0.10). In other words, the raise of concentrate cost would impact on increasing the number of beef-cattle. Moreover, non-feed expense is also giving an obvious positive effect on number of beef-cattle as referred by Pr> |t| = 0.006 (<0.10). It can be said that if non-feed expense is increasing, number of beef-cattle would grow.

The model of beef-cattle breeding development can be explained as following.

a) Partial test on research parameters is indicating that number of beef-cattle is the only variable with obvious effect on Grass Collecting Labor (TKSPRMP), and it is conditioned by Pr>|t|=0.004 (<0.10). This effect is positive, which confirms a condition that if number of beef-cattle is increasing, then greater usage of grass collecting labor would be needed. On-family labor is a variable with positive effect, but not obvious, on the use of grass collecting

labor as shown by Pr>|t|=0.358 (>0.10). Moreover, cattle development pattern is also influencing the use of grass collecting labor but this effect is not obvious and negative, as shown by Pr > |t|=0.547 (>0.10).

b) Some variables, such as number of household member, number of beef-cattle, household income, and cattle development pattern, have simultaneous effect on the use of On-Family Cattle Breeding Labor (TKSPDKL). Coefficient of determination for this relationship is 0.48805 which signifies presumption that 48.805% variances of on-family cattle breeding labor are explained by some variables, such as number of household member, number of beef-cattle, household income, and cattle development pattern. Meanwhile, the remaining of 51.195% variances seem explained by other variables out of model and also by error. From all independent variables observed, partially, it is only number of beef-cattle that has an obvious positive effect on on-family cattle breeding labor as indicated by Pr > |t| = 0.000 (<0.10). In other words, if number of beef-cattle increases, then the use of on-family cattle breeding labor would be greater. Other variables, such as number of household member, household income, and cattle development pattern, are positively influencing the use of on-family cattle breeding labor, but this effect is not obvious (not significant) because the value of Pr > |t| of these variables are more than α=0.10.

c) Land width, rice-field harvest income, household income, and cattle development pattern are variables with simultaneous obvious effect on the use of Off-Family Rice-Field Labor (TKUTLKL). Coefficient of determination (R^2) of this relationship is reaching 0.56503, which confirms an assumption that 56.503% variances in the use of off-family rice-field labor are explained by rice-field harvest income, household income, and cattle development pattern, whereas the remaining of 43.497% are clarified by other variables out of model and also by error.

Partial parameter test is then performed, and the result shows that rice-field harvest income has an obvious positive effect on the use of off-family rice-field labor as indicated by Pr>|t|=0.001 which produces a value less than α=0.10. It can be said that if rice-field harvest income increases, then the use of off-family rice-field labor would also increase. Household income has also an obvious positive effect on the use of off-family rice-field labor as shown by Pr>|t|=0.001 (<0.10). It can be stated that the increase of household income would be followed by greater usage of off-family rice-field labor. In the other hand, cattle development pattern has obvious effect, but negative, on the use of off-family rice-field labor, and it is explained by Pr>|t|=0.015. Based on this condition, it is asserted that off-family rice-field labor is used in greater proportion by breeders with cattle development pattern of calving rather than of fattening.

d) Three variables, including land width, rice-field harvest income, and cattle development pattern, have simultaneous obvious effect on the use of On-Family Rice-Field Labor (TKUTDKL). Coefficient of determination (R^2) of this relationship attains at 0.68127 which declares that 68.127% variances in the use of on-family rice-field labor are explained by land width, rice-field harvest income, and cattle development pattern, while 31.1873% remaining have been explained by other variables out of model and also by error.

If explained in partial manner, land width is obviously and positively influencing the use of on-family rice-field labor, and it is shown by Pr>|t|=0.079 (<0.10). It can be stated that the wider is the land, the more increasing is the use of on-family rice-field labor. Partial test has been conducted on research parameters, and it

has found that rice-field harvest income has an obvious positive effect on the use of on-family rice-field labor as indicated by Pr> |t|<0.0001 which is lower than 0.10. In other words, if rice-field harvest income increases, it would raise the need in the use of on-family rice-field labor.

The effect of cattle development pattern on the use of on-family rice-field labor is obvious, but negative, as shown by Pr>|t|=0.012. Based on this condition, it is stated that the use of on-family rice-field labor would be greater among breeders who emphasize their cattle development pattern on calving rather than on fattening.

e) Concerning with Off-Family Garden Land Labor (TKBUNLKL), the related effect is simultant with F-value = 8.03 and Pr>F = 0.0005. Some variables, such as land width, off-family rice-field labor, dan cattle development pattern, have simultaneous effect on the use of off-family garden land labor.

Coefficient of determination (R^2) of this effect situation would be 0.46246, which can be declared that 46.246% variances in the use of off-family garden land labor are clarified by land width, off-family rice-field labor, and cattle development pattern, while the remaining of 53.754% variances are described by other variables beyond the model and also by error.

Based on partial examination, land width has an obvious positive effect on the use of off-family garden land labor because it has Pr > |t| = 0.006 which is lower than 0.10. It signifies a condition that the wider is the land, the greater is the use of off-family garden land labor. Off-family rice-field labor has also an obvious positive effect on the use of off-family garden land labor as confirmed by Pr>|t| = 0.051 (>0.10), suggesting that the more is the use of off-family rice-field labor, the greater also is the use of off-family garden land labor.

f) In relation with On-Family Garden Land Labor (TKBUNLKL), the effect is also simultant with F-value = 4.95 and Pr > F = 0.0141. Two variables, respectively land width dan cattle development pattern, have simultaneous effect on the use of on-family garden land labor. Coefficient of determination (R^2) of the above condition is 0.25463 suggesting that 25.463% variances in the use of on-family garden land labor are explained by land width and cattle development pattern, whereas the remaining 74.537% are clarified by other variables outside the model and also by error.

Partially, of two independent variables observed, only land width has an obvious positive on the use of on-family garden land labor as indicated by Pr>|t| = 0.004 (<0.10). It supports assumption that the larger is the land width, the greater is the use of on-family garden land labor.

CONCLUSION:

The Use of Outdoor Family Rice Farmers (TKUTLKL), together, the variable land area, income from rice fields, family income and cattle development patterns have a significant effect on the use of laborers outside the family's paddy fields. The coefficient of determination (R2) for this model is 0.56503, which means that 56.503% of the diversity of labor use in paddy fields outside the family can be explained by the variables of paddy yield, family income and cattle development patterns, while 43,497%

LIMITATION AND STUDY FORWARD:

1. The government, which consists of assistance for farmers, can consider in a timely manner what is required, as requested, and according to needs, according to the funds provided and in accordance with the target.
2. Costs in farming are quite large while farmers find it difficult to obtain these funds, so the government needs to provide venture capital assistance provided to farmers without grants and complicated relationships with very

low interest loans and can be accessed by farmers.

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