

## The Effect Of Breeders' Capability Deprivation And Capability On Their Freedom Of Choice

**L.V. Ratna Devi S.**

Department Extension Development /Community Empowerment Study Program  
Postgraduate Program of Sebelas Maret University, Surakarta, Indonesia.

**Darsono**

Department Extension Development /Community Empowerment Study Program  
Postgraduate Program of Sebelas Maret University, Surakarta, Indonesia.

**Drajat Trikartono**

Department Extension Development /Community Empowerment Study Program  
Postgraduate Program of Sebelas Maret University, Surakarta, Indonesia.

**Yulius Slamet**

Department Extension Development /Community Empowerment Study Program  
Postgraduate Program of Sebelas Maret University, Surakarta, Indonesia.

### ABSTRACT

This research aimed to evaluate the freedom of choosing opportunity by breeders in Getasan, Semarang Regency, Central Java Province, Indonesia. The preceding issue is that the breeders do not have capability of selling their product (milk) themselves to the collector cooperatives, and IPS (Dairying Industry). Breeders encounter capability deprivation because as producer, they should determine the selling price. The breeders do not have freedom of choice in the term of milk marketing chance. This research used survey method and the population was milk cow breeders. The sample of village was taken using cluster sampling and that of breeder respondents using stratified random sampling techniques to determine the number of breeders for each selected villages. The village sample consisted of 3 villages and the respondent consisted of 375 breeders. There were 3 (three) variables in this research: breeders' capability deprivation, capability, and freedom of choice. The data was analyzed using Path Analysis with SEM ordinary least square method. The result of research showed that there were a direct effect of breeders' capability deprivation on the freedom of choice and an indirect effect through breeders' capability.

**Keywords:** Capability Deprivation, Capability, Freedom of Choice, Breeders.

### INTRODUCTION

Cow milk selling is a job the breeders do daily. The result of selling is determined with the volume of cow milk produced and the selling price. The volume of milk is determined by the number of productive milk cows and their productivity (Rusdiana, 2009). Selling price is determined by milk price at international market. When there is an increase in the world's milk price, the breeders would enjoy better milk price increase corresponding to quality, and vice versa (Boediyana, 2009).

The condition of breeders in Getasan sub district shows that the mean of cow ownership here is 1-4 cows. Green land available is narrow. The mean production is 10-15 liter milk/day (Triharyanto *et al.*, 2014). It is consistent with the standard business feasibility; according to

Yunasaf (2008), to achieve business feasibility, the cow ownership scale is 10-15 cows or on average 7-8 lactating cows. To sell milk, the breeders use “*loper* (delivery man)” service rather than sell it directly to cooperatives or Dairying Industry (thereafter called IPS). “*Loper*” is the milk collector seller taking milk from houses to be brought into the milk collector cooperatives. The breeders do not sell it directly to cooperatives and IPS due to too small volume of milk, while *loper* can buy from the breeders in any volume. It means that the breeders do not have an opportunity of selling milk other than to “*loper*”. In Sen’s (1999) term, the breeders do not have capability of selling their product (milk) themselves to collector cooperatives and to IPS.

*Loper* determines the selling price of milk/liter. The selling price refers to the milk selling price to cooperatives and IPS (Devi, 2010). Breeders do not determine it. Borrowing Sen’s (1999) term, the breeders experience capability deprivation, because as producer, breeders should determine the selling price.

*Loper* pays once in ten days and at that time interval, the breeders owe feed to the *loper*. The payment of feed is done by reducing the result of milk selling. In addition to feed, *loper* also gives loan for buying cow medicines. Marketing channel pattern through *loper* conducted by breeders makes them dependent on *loper*. Breeders do not sell their product through other marketing channel pattern. In Sen’s (1999) term, the breeders do not have freedom of choice in relation to milk marketing chance.

Considering the condition of research location, it can be seen that the breeders encounter capability deprivation, have no capability and have no freedom of choice opportunity. Based on the elaboration on this issue of milk cow breeding, a question results “Is there an effect of breeders’ capability deprivation and capability on their freedom of choice?”

This research employed capability deprivation concept resulting in minimum capability within individual (Sen, 1992, 1999). Capability concept reflects on an individual’s real opportunity (Sen, 1985, 1992, 1999). Clark (2006) states that capability reflects individual’s ability of doing something. Freedom of choice is the activity of choosing freely the opportunity available to the actor (Sen, 1999).

The theory used was Sen’s theory stating that capability deprivation leads an individual to have less capability, so that he cannot choose the opportunity freely (have no freedom of choice). Meanwhile, human is dependent on the opportunity obtained in his lifetime (Sen, 1983, 1984, 1985, 1992, 1993, 1999, 2004, 2005). Sen (1985, 2002) states that the presence of freedom of choice is valuable to be an alternative choice out of the opportunity available, referring to capability conceived as the real opportunity. If an individual have no freedom of choice, it is because of deprivation aspect (Sen 1984, 1985, 1992).

### **HYPOTHESIS TESTING**

1. There is a direct effect of breeders’ capability deprivation on their freedom of choice.
2. There is an indirect effect of breeders’ capability deprivation on their freedom of choice through breeders’ capability.

### **RESEARCH METHOD**

The research was taken place in Ngrawan, Polobogo, and Sumogawe Villages, constituting 3 (three) out of 13 (thirteen) villages in Getasan, Semarang Regency, Central Java Province. This study employed survey method with 375 respondents taken from the population consisting of 5,922 milk cow breeders. The sampling technique used was *Multi Stage Random Sampling* one beginning with cluster sampling to obtain the village selected randomly by area and cattle

number. Furthermore, stratified random sampling was used to determine the number of cattle for every selected village. Technique of collecting data used was questionnaire.

This research employed 3 (three) variables, consisting of exogenous variable: breeders' capability deprivation ( $X_1$ ) and breeders' capability ( $X_2$ ), and endogenous variable: breeders' freedom of choice ( $Y$ ). The data was analyzed using Path analysis. The estimated path coefficient can be found from the regression calculation with SPSS (*Statistical Product and Service Solution*) program. The value was taken from "beta" in Standardized Coefficients presented in the table of regression calculation coefficient. The  $\beta$  parameter was estimated using SEM ordinary least square (OLS) method.

Because of statistical regression was used, classical assumption test was conducted, including data normality, heteroskedasticity, autocorrelation, and multicollinearity tests.

Based on hypothesis 1, the path coefficient equation developed for breeders' freedom of choice, according to Knoke (2002), is:

$$Y = P_{yx1} X_1 + P_{yx2} X_2 + P_{y\epsilon1} \epsilon_1$$

Estimated path coefficient:

$$P_{yx1} = B^*_{yx1}$$

$$P_{yx2} = B^*_{yx2}$$

$$P_{y\epsilon1} = \sqrt{1 - R^2_{y.x1x2}}$$

Based on hypothesis 2, the path coefficient equation between breeders' capability deprivation and freedom of choice through capability or due to direct effect and correlated effect, according to Knoke (2002), is:

$$r'_{yx1} = P_{yx1} + P_{yx2} r_{x1x2}$$

Where:

$r'_{yx1}$  = indirect path coefficient for breeders' *capability deprivation* and their *freedom of choice*.

$P_{yx1}$  = estimated path coefficient between breeders' *capability deprivation* and their *freedom of choice*.

$P_{yx2}$  = estimated path coefficient between breeders' *capability* and their *freedom of choice*.

$r_{x1x2}$  = correlation between breeders' *capability deprivation* and their *capability*.

## RESULT AND DISCUSSION

### Profile of Respondent

Most respondents are adult or in middle age, with the mean age of 46 years. It means that they are still in productive group. Formal education of respondents belongs to low category, as most of them have Elementary School education. Most respondents are vegetables farmers and milk cow breeders all at once. The mean length of cow breeding is 19 years. In relation to the respondents' age, the cow breeding job has begun since they are  $\pm$  27 years old. However, viewed from respondent education, it can be seen that education has not been able to generate the business opportunities for respondents. It can be seen from the ownership of 3 milk cows. The business condition is very small (micro). The mean green land width possessed is 2,992.5 m<sup>2</sup>. In rainy season, it can suffice the green feed for 2-3 cows only. In dry season, the breeders should buy additional green feed.

### Condition of respondents related to the research variables

The condition of breeders' capability (65.6%) belongs to high category. Breeders' capability belongs to low category (49.1%). The breeders' freedom of choice belongs to low category (52.5%).

### Factors affecting the breeders' freedom of choice

Regression model is considered as feasible to predict the breeders' freedom of choice variable as indicated with ANOVA calculation. F statistic value = 427.605 with  $p = 0.000$ . F table = 3.02. at  $p = 0.05$  with  $df_1 = 2$  and  $df_2 = 373$ ; therefore F statistic > F table,  $427.605 > 3.02$ . p statistic < p table,  $0.000 < 0.05$ . It can be found that the regression model is feasible and can be used to predict the breeders' freedom of choice.

The estimated path in path analysis can be found from regression calculation, so that result of regression using classical assumption test shows that regression model: 1) is free of multicollinearity (has VIF value about 1, exactly 1.108, with tolerance number of 0.858 (close to 1) and correlation between exogenous variable is -0.613 (not close to 1). 2) heteroskedasticity does not occur (the convergence point of predicted Y and residual Y spreads above and below 0 (zero) on Y axis), 3) is free of autocorrelation (Durbin - Watson value between -2 and +2, 1.874). 4) has nearly normal distribution (data is distributed around diagonal line and follow the diagonal line direction). The result of regression using classical assumption test shows that linear regression model can be said as the good model.

Research variables were tested individually using t-test. T statistic value of breeders' capability deprivation to their freedom of choice = 13.840,  $p \text{ Sig} = 0.000$ . T table = 1.966,  $p \text{ table} = 0.05$ . t statistic > t table,  $13.840 > 1.966$ .  $p \text{ Sig} < p \text{ table}$ ,  $0.000 < 0.05$ . It can be concluded that the two variables partially affect negatively with significance level of 95%. It means that when the breeders' capability deprivation increases, their freedom of choice will decrease, and vice versa.

T statistic value of breeders' capability to their freedom of choice = 11.872,  $p \text{ Sig} = 0.000$ . t table =  $\pm 1.966$ ,  $p \text{ table} = 0.05$ . t statistic > t table,  $11.872 > -1.966$ .  $p \text{ Sig} < p \text{ table}$ ,  $0.000 < 0.05$ . It can be concluded that both variables affect positively and partially with significance level of 95%. It means that the breeders' capability increases, their freedom of choice increases as well.

The result of path analysis using regression test with SPSS 18 program help is as follows:

- Estimated path coefficient of breeders' capability deprivation to their freedom of choice ( $P_{yx1}$ ) = -0.500
- Estimated path coefficient of breeders' capability to their freedom of choice ( $P_{yx2}$ ) = 0.429
- Correlation between breeders' *capability deprivation* their *capability* ( $r_{x1x2}$ ) = -0.613
- Simultaneous effect of breeders' *capability deprivation* and *capability* on their *freedom of choice* ( $R^2_{y.x1x2}$ ) = 0.697.

So the path coefficient equation for breeders' *freedom of choice* is:

$$Y = -0,500 X_1 + 0,429 X_2 + 0,550 \epsilon_1$$

- Every one unit increase in breeders' *capability deprivation* variable, there is an increase of 0.500 unit in the breeders' freedom of choice. It indicates that there is a direct effect of the breeders' capability deprivation on their freedom of choice.

Every one unit increase in breeders' *capability* variable, there is an increase of 0.429 unit in the breeders' freedom of choice. It indicates that there is a direct effect of the breeders' capability on their freedom of choice.

There is 0.550 unit value or 30.3% in the breeders' freedom of choice explained by variables other than exogenous variable used.

- Path coefficient between breeders' *capability deprivation* and their freedom of choice through capability or due to direct effect and correlated effect ( $r'_{yx1}$ ) is -0.763 (having a strong effect). Therefore, hypothesis stating that "there is an indirect effect of breeders' *capability deprivation* on their freedom of choice through capability" is supported.

The result of research showed that the breeders are still far from the standard feasibility of business. The mean length of cow breeding do not increase the size of business viewed from the mean milk cow ownership and green land. Viewed from education level belonging to low category, it is difficult to build business opportunity, as actually there is internal factor of breeders inhibiting them, called capability deprivation by Amartya Sen.

The result of research also shows that the breeders' capability deprivation is still high, particularly in the term of making business decision. This condition affects the breeders' capability of building business supporting opportunity, as their capability is low. The breeders have not been able to build opportunity using their openness to experience, interaction ability, cooperation, mutual trust, contacting each other, supporting each other, caring about each other and animal husbandry medium. As a result, the breeders cannot have freedom of choice to achieve valuable life, as the breeders' freedom of choice is low, particularly in the term of making business decision.

Referring to the theory suggested by Amartya Sen, the breeders having no freedom of choice is due to deprivation aspect, as indicated with the result of research showing that there is an effect of breeders' capability deprivation on their freedom of choice. Amartya Sen also suggests that the presence of freedom of choice is valuable to be an alternative choice out of the opportunity available, referring to capability conceived as the real opportunity. This theory is in line with the result of research showing that there is an effect of breeders' capability on their freedom choice. This finding supports hypothesis 1.

In addition, Amartya Sen states that capability deprivation leads an individual to have no much capability, thereby having no freedom of choice. Meanwhile, human is dependent on the opportunity obtained in his lifetime. The effect of three variables mentioned in the theory can be seen from the result of research showing that there is an indirect effect of breeders' capability deprivation on their freedom of choice through their capability or due to direct effect and correlated effect. Meanwhile the simultaneous effect of breeders' capability deprivation and their capability on their freedom of choice was 69.7%. This finding supports hypothesis 2.

## CONCLUSION

There is an effect of breeders' capability deprivation on their freedom of choice. The direct effect is smaller than the indirect one ( $-0,500 < -0.763$ ), indicating that the breeders' capability has strong effect on the correlation between breeders' capability deprivation and their freedom of choice.

## References

- Boediyana, T. 2009. *Memperbaiki Nasib Peternak Sapi Perah*. [www. agribisnisnews.com/agribis-persusuan/13-memperbaiki-nasib-peternak-sapi-perah.html](http://www.agribisnisnews.com/agribis-persusuan/13-memperbaiki-nasib-peternak-sapi-perah.html).
- Clark, D. A. 2006. *The Capability Approach: Its Development, Critiques and Recent Advance*. Global Peverty Group, Institute for Development Policy and Management. University of Manchester, UK.
- Devi, L.V.R. 2011. *Manajemen Perubahan Perilaku Dalam Pendampingan Komunitas Peternak Sapi Perah : Penerapan Inovasi – Probiotik Herbal Dalam Budidaya Sapi Perah, Di Desa Nogosaren, Kecamatan Getasan, Kabupaten Semarang*. Surakarta: Hasil penelitian bersama PPKwu, LPPM UNS.
- Knocke, D., George W.B., Alisa P.M. 2002. *Statistics For Social Data Analysis*. Illinois: F.E. Peacock Publishers Itasca.
- Rusdiana, S., Wahyuning K.S. 2009. Upaya Pengembangan Agribisnis Sapi Perah dan Peningkatan Produksi Susu Melalui Pemberdayaan Koperasi Susu. *Forum Penelitian Agro Ekonomi*, 27 (1): 43 – 5. Bogor.
- Sen, A. 2005. Human rights and capabilities. *Journal of Human Development*, 6(2): 151 – 166.
- \_\_\_\_\_. 2004. *Development As Capability Expansion*. New York: Oxford University Press.
- \_\_\_\_\_. 2002. *Rationality and Freedom*. Cambridge, MA: Harvard University Press.
- \_\_\_\_\_. 1999. *Development as Freedom*. New York: Knopf.
- \_\_\_\_\_. 1993. Capability and Well Being. In Nussbaum and Sen (eds). *The Quality of Life*. Oxford: Clarendon Press.
- \_\_\_\_\_. 1992. *Inequality Reexamined*. Cambridge, MA : Havard University Press.
- \_\_\_\_\_. 1985. *Commodities and Capabilities*. Amsterdam : North-Holland.
- \_\_\_\_\_. 1984. *Resources, Value and development*. Oxford: Blackwell; Cambridge, MA : Havard University Press.
- \_\_\_\_\_. 1983. Poor, Relatively Speaking. *Oxford Economic Papers*, 35: 153–169.
- Triharyanto, E., Devi, L.V.R. dan Susantiningrum. 2014. *Model Pendampingan UMKM Berbasis “Integrated Farming System”*. Surakarta: LPPM Pusat Pengembangan Kewirausahaan (PPKwu Universitas Sebelas Maret Surakarta).
- Yunasaf. 2008. Peran Kelompok Peternak Dalam Mengembangkan Keberdayaan Peternak Sapi Perah (Kasus Kabupaten Bandung). *Jurnal Penyuluhan*, September 2008, 4 (2): 109 - 115