

Empirical Study of Women and Their Contribution on Beef Cattle Farming in Rural Area, Yogyakarta, Indonesia

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Abstract: This research, were aimed to investigate level of participation and to analyze the social factors related to the level of women participation in raising beef cattle in the cattle farmers group in Yogyakarta. The study focused on Pandan Mulyo group, Poncosari village, Srandakan, Bantul. This research was a case study which gathered all women (wives) of farmer group as respondents. This research was done by interview and questionnaire methods. The data were tabulated and analyzed using Spearman's rank correlation, Chi-square phi test to analyze the relationship between social factors and level of participation. The results showed that social factors had significant correlation are respondents age ($r = 0.222$; $p < 0.01$), respondents education ($r = -0.173$; $p < 0.05$), cattle raising experience ($r = 0.352$; $p < 0.01$), number of their own beef ($r = 0.308$; $p < 0.01$) and perception of farmers group ($p < 0.05$) with level of participation. Chi-square analyze indicated that farmer's attitude had significant relationship ($p < 0.05$) with level of participation by strength of $\Phi = 0.679$.

Key words: Woman, beef cattle farming, participation, respondents, Indonesia

INTRODUCTION

Human resources, nature and capital are three main elements needed in each development. In effort to promote cattle farming in addition to capital, excellent quality breed are needed by strong cattle farmers who have high spirit in working and sensitive to newly introduced technology.

Now-a-days, development in farming sector is oriented to modern, efficient strong farming including cattle farming, development in order to increase farmers and cattle farmers' income and living standard, extend job and business opportunities expand domestic and foreign markets, a modern, efficient strong farming is expected able to improve quality of products processing support national development.

Along with growth and development of beef cattle farming business in effort to increase productivity and cattle farming inseparable from necessity of labor met by all family member, womens as housewife and mother participate within. Besides they work in land cultivation, women in rural area play a role in beef cattle farming, although in fact, small-scale beef cattle farming is still considered as a side job. Men as head of household can not spend full time in managing livestock, therefore the job also becomes part of women's responsibility as housewife who has more time to monitor livestock. In research entitled, Women's Role in Beef Cattle

Management in Eastern Central Java by Setyowati (2000) women participate in beef cattle business but in fact, the role does not receive sufficient recognition, yet. The fact women's involvement in elucidation and skill training programs held by related institutions is low. Women's role is only considered as helping role, therefore decision making is still on men's hand.

In Pandan Mulyo cattle farmers, group, women's participation in beef cattle farming, particularly in raising activities can be seen from duration to feed, clean the stables and maintain livestock's health. Their participation very help the business but unfortunately, their participation is still considered as a side job but actually they spend special time to raise livestock.

In that group, there is not a research on women's participation in beef cattle management yet, therefore this study is expected able to give motivation to women in increasing participation in beef cattle management. Besides that it is expected able to answer following questions:

- How is women's participation in beef cattle management in Pandan Mulyo cattle farmers group?
- What are sociodemographical and socio psychological factors relating to women's participation level in beef cattle management in Pandan Mulyo cattle farmers group?

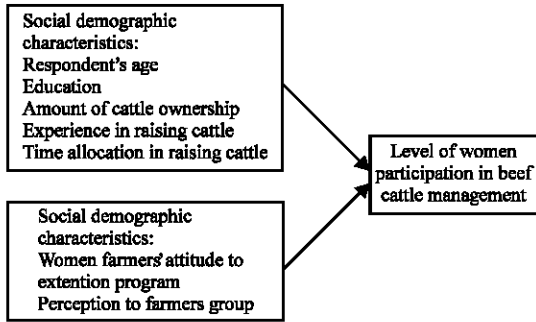


Fig. 1: Conception model of correlation among variables in study

Research objectives: Research objectives are to analyze women’s participation level in beef cattle management and to analyze factors relating to women’s participation level in beef cattle management in Pandan Mulyo cattle farmers group.

Conceptual framework: In this study, researcher analyzed women’s participation level in beef cattle management in Pandan Mulyo cattle farmers group and social factors relating to women’s participation level in beef cattle management in Pandan Mulyo cattle farmers group. Those factors are sociodemographical and sociopsychological factors. Socio demographical factors consist of: Respondents’ age, respondents’ education, amount of beef cattle ownership, experience in raising cattle time allocation in raising cattle. Socio psychological factors consist of woman farmers’ attitude to extension and their perception to farmers group. Conception model of correlation among variables in study is described in Fig. 1.

MATERIALS AND METHODS

Research was conducted in Pandan Mulyo cattle farmers group, involving women who are farmers’ wives, joining Pandan Mulyo cattle farmers group, as respondents by reason that women’s high participation level in beef cattle management was not appreciated by members or government yet women want to establish themselves cattle farmers group. Those are base for me to choose Pandan Mulyo cattle farmers group to be analyzed. Respondent is 137 individuals according to amount of its member. Device used to collect data is questionnaire.

Method used in primary data collection is survey with interview by using questionnaire guidance. Secondary data was obtained from monography of

Poncosari village, Srandakan Subdistrict, Bantul. Research design used case study design. Prior to research, questionnaire has been tested its validity and reliability in Anggayuh Rahayu cattle farmers group, Kaligondang Subvillage, Sumbermulyo, Bambanglipuro, Bantul to 26 members.

Data analysis used descriptive analysis giving description of respondents’ age, education, amount of beef cattle ownership, experience in raising cattle time allocation in raising cattle.

Women’s participation was stated as amount of respondent involving in beef cattle management activities for analyzing correlation between sociodemographical factors and perception to farmers group with women’s participation level in beef cattle management, I used Spearman correlation analysis.

Correlation between woman farmers’ attitude to elucidations and women’s participation level in beef cattle management was analyzed by using Chi-square (χ^2) if result is significant, then it is continued with phi (Φ) test.

RESULTS AND DISCUSSION

Research site condition: Pandan Mulyo cattle farmers group is located in Ngentak Subvillage, Poncosari village, Srandakan Subdistrict, Bantul in coastal area of Pandan Simo Beach, Southwest of Bantul Regency, Yogyakarta. It adjacents to Trimurti village (Srandakan Subdistrict) in North, Gadingsari village (Sanden Subdistrict) in East, Indian ocean in South Progo River in West. Poncosari village lies at altitude 2 m of mean sea level, its temperature is 30°C. Average rainfall is 2,000-3,000 mm year⁻¹ and area width is 1,186,122 ha. In 2006, its population is 3,679 heads of household or 13,269 person that is 6,539 men and 6,730 women.

Profile of Pandan Mulyo cattle farmers group: Pandan Mulyo cattle farmers group was founded on January 11, 1994. In 1st years, it had 68 members and now its member is 137 cattle farmers beef cattle population is about 420. The stables were built on land as 1.5 ha. Land which is used for stables is Sultan’s ground, cattle farmers have no proprietary right but they have concession right without paying rent money.

Loans that have been launched are from cattle farming project in rural area in fiscal year 2002, Bogasari production central area project. Loan is given by turns for even distribution reason. Existing beef cattle is Peranakan Ongole (PO) Limousin simmental. Problem includes difficulty in doing artificial insemination to rut cows because of inseminator or veterinarian assistant’s late cattle farmers’ late to detect period of heat.

Pandan Mulyo cattle farmers group had some achievement that is 1st winner of cattle farmers group competition in regencial level in 1997, 2nd winner of cattle farmers group competition in provincial level in 2004 7th winner of cattle farmers group competition in national level on August 3, 2005.

Socio-demographical conditions: In a cattle farming business, human factor has a significant role. Age, education level, amount of beef cattle ownership experience in raising cattle are elements that have close relation with cattle farmers' capability and skill level. Table 1 showed respondents' characteristics.

Socio-psychological conditions

Women's attitude to extension: Attitude is something learning tendency in giving response to an object or group of objects which is thought much of or not thought much of consistently (Sutisna, 2001). Statements in study measuring women's attitude to extension are:

- Extension ctivities will add responndents' knowledge in raising beef cattle
- Extension activities give opportunities to express opinion or ask a question
- Respondent favors extension, due to introduction of new technology
- Respondent wants ensionxt is intensified
- Respondent always presents at extension held by related agency

Table 2 showed that 83.94% respondent responds positively extension activies from related agency (favorable) while 16.06% states disapproval. This disapproval is due to change of approved schedule without notice from related party. Respondents' attitude can be improved by giving routine schedule about extension programs, therefore respondents can keep special time to follow activities.

Perception to farmers group: Perception is stimulus process which is selected, organized interpreted (Solomon, 1996 in Sutisna, 2001). According to Mardikanto (1993), farmers group is a group which consists of farmers, either adult farmers (men/women) or young farmers (boys/girls) which is bound informally in a group organization or area based on harmony and mutual necessities exists in power and leadeship environment of a farmer contact. Statements about perception to farmers group are:

Table 1: Range of women's age in Pandan Mulyo cattle farmers group

Sociodemographical characteristic	Amount of respondent (person) Percentage	
Range of age (years)		
20-29	40	29.20
30-39	42	30.66
40-49	14	10.22
50-59	36	26.28
>59	5	3.64
Education level		
Unfinished elementary school	49	35.76
Elementary school	47	34.31
Junior high school	15	10.96
High school	25	18.25
University	1	0.73
Cattle Unit (CU) population		
≤1.0	27	19.71
1.1-2.0	48	35.03
2.1-3.0	35	25.54
3.1-4.0	21	15.32
>4.0	7	4.40
Range of experience in raising cattle (years)		
1-5	50	36.50
6-10	51	37.22
11-15	15	10.95
16-20	12	8.76
21-25	1	0.73
26-30	2	1.46
31-35	1	0.73
≥35	5	3.65
Labor allocation (h day⁻¹)	Time allocation (HOK)	Amount of respondent (person) Percentage
<1	<0.14	2 1.48
1-3	0.14-0.43	108 78.83
4-6	0.57-0.86	25 18.25
>6	>0.86	2 1.46

Table 2: Women's attitude to extension activities

Attitude	Respondent population (person)	Percentage
Favorable	115	83.94
Unfavorable	22	16.06
Total	137	100.00

Table 3: Respondents' perception to farmers group

Perception level	Respondent population (person)	Percentage
High	112	81.75
Medium	18	13.14
Low	7	5.11
Total	137	100.00

- Cattle farmers group can help economy of Pandan Mulyo community
- By existence of cattle farmers group, respondent has an advantage because his cattle can be taken care of better
- By existence of cattle farmers group, respondent is more comfortable in raising cow
- Cattle farmers group is an organization to tighten cooperation among community with same purpose
- Cattle farmers group is a right place to share opinion each other about problems of beef cattle

Table 3 showed that 112 respondents (81.75%) show high perception level, 18 respondents (13.14%) show medium level 7 respondent (5.11%) show low level.

Women’s participation level in beef cattle management in Pandan Mulyo cattle farmers group:

Women’s participation in beef cattle management in Pandan Mulyo cattle farmers group consists of some steps that is: Planning, implementation, monitoring and evaluation sharing benefits. Each step of partisipation has score itself.

Planning: First step of participation is planning. Planning is a significant factor in each activity, then an activity won’t be well implemented or successful without planning, as Setyowati (2000) argued that women’s involvement in beef cattle management can indirectly influence farmers’ attitude to beef cattle business and social relevances, as well as women’s participation in planning of beef cattle management in Pandan Mulyo cattle farmers group has correlation with social factors relating to beef cattle business. Statements in step of planning are:

- Respondent participates in determining schedule of feeding and stables cleaning
- Respondent participates in expressing opinion in stables making activity
- Respondent participates in planning food that will be given to livestock
- Respondent participates in planning feeding system
- Respondent participates in planning total cow that will be raised

Table 4 showed that 17 (12.41%) respondents stated that involvement level in planning is high, 90 (65.69%) respondents stated medium 30 (21.90%) responded stated low. Each respondent has equal right with men in each step of participation, then women should be involved in each step of participation because they will indirectly give support to the husbands. In improving participation level, women should be involved in planning process of activities in group stables.

Ndraha (1990) argued that community’s participation will decrease if they do not play a role or play less role in decision making, therefore participation is essential in each activity that is participation in planning, in implementation, in accepting, in management, and in promoting development participation in accepting development.

Implementation: In step of implementation, respondents implement planned activities according to goals. Implementation of planned activities supported by discipline of each respondent will increase respondents’ participation level in beef cattle management, thus it will

Table 4: Women’s participation level in step of planning in Pandan Mulyo cattle farmers group

Planning level	Respondent population (person)	Percentage
High	17	12.41
Medium	90	65.69
Low	30	21.90
Total	137	100.00

Table 5: Women’s participation level in step of implementation in Pandan Mulyo cattle farmers group

Implementation level	Respondent population (person)	Percentage
High	114	83.21
Medium	19	13.87
Low	4	2.92
Total	137	100.00

bring expected success. Thus, success of a business is very determined by step of implementation. Statements assessing step of implementation are:

- Respondent is involved in livestock sale and purchase
- Respondent feds livestock everyday
- Respondent looks for or provides livestock feed everyday
- Respondent washes livestock and keeps them healthy
- Respondent cooperates in cleaning and repairing stables

Given result of study on step of implementation, 114 respondents (83.21%) have high participation level, 19 respondents (13.87%) have medium level only 4 respondents have low participation level (Table 5).

In general, women in rural area only spend time for household activities. They also participate in farming business activities (crops farming, cattle farming fishery) in the form of working time allocation and decision making by more modern cattle farming sector, woman labor is significant and essential (Lestari, 1986 cited by Setyowati, 2000).

Monitoring and evaluation: Widiati (2003) argued that evaluation means to valuate or asses job outcomes, if it leads to impression, recognition interest to do it. Statements in step of monitoring and evaluation are:

- Respondent is involved in monitoring activity in implementation of livestock weighing
- Respondent is involved in activity of livestock health monitoring
- Respondent always participates in monitoring and evaluating cash of group
- Respondent always monitors heat and mating period on livestock

Table 6 showed that 79 respondents (57.66%) have high participation level, 47 respondents (34.31%) have medium level 11 respondents (8.03%) have low level. Monitoring and evaluation activity have a close relation, as Soekartawi (1990) argued that monitoring must be able to give direction and recommendation, if that monitored activity run well can be followed by an evaluation orienting final outcome of a program. Then, it can be found out if the outcome has accorded with intention of program.

Sharing benefits: Sharing benefits has correlation with share right of each individual involving or participating in an activity. Statements are:

- By participating in raising cow in group stables, I can help my family's economy
- By raising livestock, I can utilize waste in farming land for feed availability for livestock
- By raising livestock in group stables, I can add my experience in raising cow
- I think I can tighten neighborhood relation with local community
- By raising livestock, I can be more trusted and respected by my husband and family

Table 7 showed that 111 respondents (81.02%) have high sharing benefits level, 24 respondents (17.52%) have medium level 2 respondents (1.46%) have low level. This indicated that respondents participate in getting benefits of beef cattle management in Pandan Mulyo cattle farmers group.

Total women's participation level in Pandan Mulyo cattle farmers group is shown in Table 8. Given in Table 8, high percentage is in step of implementation as 83.21% in step of sharing benefits as 81.02%. This means respondents have high participation level in steps of activities implementation and sharing benefits.

Information derived in research showed that high respondents' participation level in step of beef cattle management activities implementation is due to fully responsibility transfer of beef cattle management from husband to his wife. Men as head of household and member of farmers group at same time can not spend full-time to raise the cattle because they have to work in rice field as their main job. This is supported by Setyowati (2000)'s, argument that women play a significant role in cattle farming activities, particularly beef cattle management. In cases of feeding and cleaning stables, women's single role are greater than men's single role. Because of high participation in traditional cattle farming business as in rural area in general, women will influence

Table 6: Women's participation level in step of monitoring and evaluation in Pandan Mulyo cattle farmers group

Monitoring and evaluation level	Respondent population (person)	Percentage
High	79	57.66
Medium	47	34.31
Low	11	8.03
Total	137	100.00

Table 7: Women's participation level in step of sharing benefits in Pandan Mulyo cattle farmers group

Sharing benefits level	Respondent population (person)	Percentage
High	111	81.02
Medium	24	17.52
Low	2	1.46
Total	137	100.00

Processed primary data (2008)

Table 8: Total women's participation level in beef cattle management in Pandan Mulyo cattle farmers group

Steps of participation	Percentage (%)		
	Low	Medium	High
Planning	21.90	65.69	12.41
Implementation	2.92	13.87	83.21
Monitoring and evaluation	8.03	34.31	57.66
Sharing benefits	1.46	17.52	81.02
Total participation	0.00	45.26	54.74

Processed primary data (2008)

farmers' attitude to beef cattle business and social relevances. Husbands or other family labors have a chance to leave their side job to be endorsed to their wives they work in sector needing stronger power than women's power.

In step of sharing benefits, respondents have high participation level too because they have experienced benefits of beef cattle management in Pandan Mulyo cattle farmers group. After research, researchers found that respondents who have high participation level in step of sharing benefits are respondent who have realized or understood derived benefits when they participated in Pandan Mulyo cattle farmers group.

Step of planning as 21.90% has lowest percentage of total women's participation level in Pandan Mulyo cattle farmers group because respondents are not member of group but the husbands, hence respondents are less involved in planning. Although it's done indirectly, women often give good ideas or suggestions to their husband concerning planning in group. However, they are not given chance yet to phrase ideas or suggestions in forums or meetings. This caused respondents have low participation level in step of activities planning in Pandan Mulyo cattle farmers group.

Correlation between social factors and women's participation level in beef cattle management: Data on social demography and women's perception to farmers

Table 9: Result of Spearman's correlation between participation level and variables which is perceived have correlation

Variables	Probability (Sig.)	Spearman's correlation coefficient
Respondent's age	0.009	0.222**
Respondent's education	0.044	-0.173*
Experience in raising cattle	0.000	0.352**
Amount of beef cattle ownership	0.000	0.308**
Time allocation in raising cattle	0.247	0.100
Woman's perception to farmers group	0.046	0.171*

**Significant on $p < 0.01$ and $p < 0.05$; Processed primary data (2008)

group from research was processed using Spearman correlation (Table 9) data on woman farmers' attitude to elucidations was examined using Chi-square with SPSS for Windows version 12.00 (Table 9).

Result of statistic analysis (Table 9) showed that there is correlation of respondent's age ($p < 0.01$) respondent's education ($p < 0.05$) experience in raising cattle ($p < 0.01$) amount of beef cattle ownership ($p < 0.01$) variables and woman's perception to farmers group ($p < 0.05$) with participation, each has correlation coefficient, respectively is 0.222, -0.173, 0.352, 0.308 and 0.171.

Women's attitude: This attitude stated respondents' favorability and unfavorability on elucidation activities held by government. Chi-square (χ^2) test in Table 10, showed significant correlation (χ^2 : 63.131 on $p < 0.05$) between women's attitude variable and participation level with coefficient phi as 0.679, meaning there is strong correlation between cattle farmers' attitude and participation level ($\Phi > 0.50$) in this case coefficient phi showed correlation power level among 2 variables.

Women's attitude variable has positive correlation with participation level, this can be seen of women's favorable attitude percentage in Pandan Mulyo cattle farmers group is highest (46.71%) in high participation level too (Table 11).

According to research of Saptarini *et al.* (2007), in Pandan Mulyo cattle farmers group by selecting members of Pandan Mulyo cattle farmers group as respondent, result from Chi-square test and phi test, variable of cattle farmers' attitude to implementation of government's program (elucidation) has dependency/correlation with participation level ($p < 0.01$).

After research entitled correlation between social factors and women's participation level in beef cattle management in Pandan Mulyo cattle farmers group Srandakan, Bantul, it was proven that variables of respondent's age ($p < 0.01$), respondent's education ($p < 0.05$) experience in raising cattle ($p < 0.01$) amount of beef cattle ownership ($p < 0.01$) and women's perception to farmers group ($p < 0.05$) have significant correlation with

Table 10: Result of Chi-square (χ^2) and phi (Φ) test of participation level and women's attitude

Variables	Probability (Sig.)	Coefficient Chi-square	Coefficient phi
Women's attitude	0.000	63.131*	0.679

Table 11: Women's attitude percentage in Pandan Mulyo cattle farmers group

Participation level	Attitude (%)	
	Unfavorable	Favorable
High	7.30	46.710
Medium	8.76	37.230
χ^2		63.131*
Φ		0.679

participation level. Thus, not all variable used in this study, have significant correlation with participation level. Hence, it needs revision of conception model of correlation between variables prior to research is carried out.

CONCLUSION

After research was carried, it was proven that women's participation level in beef cattle management in cattle farmers group is in medium level. Steps of implementation, monitoring and evaluation sharing benefits have high participation level. It can be concluded that women's participation level in beef cattle management in cattle farmers group is categorized high.

Social factors that have significant correlation with participation level are age, education, experience in raising cattle, amount of beef cattle ownership, women's perception to farmers group women's attitude to elucidation.

RECOMMENDATIONS

Result of study can be consideration for government to pay attention to female labors in cattle farming sector. Meeting frequency in cattle farming extension activities needs to be increased as medium for women to add their insight and knowledge in raising beef cattle in particular. It is exactly, accompanied with introduction and training of new technology application in cattle farming sector.

Members of cattle farmers group should direct seriously women (wives) in beef cattle management because they have contribution in giving their energy in implementation of beef cattle management. Besides that women should be more involved in step of implementation, therefore women's participation level in beef cattle business will be more optimal.

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