

ASSESSING THE USE OF COMMUNAL FEEDLOT IN EMPOWERING WOMEN FARMERS: A CASE OF MOUNT FRERE CATTLE CUSTOM FEEDING SCHEME

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Abstract

Prior to the democratic dispensation in South Africa in 1994, women were not actively involved in the economic activities of both household and the country. These patriarchal customs have resulted in the limited influence of women in various sectors of the economy. These customs appear to be more prevalent in the poverty stricken rural areas where women do have limited rights and privileges to challenge and own businesses as compared to the male individuals. On the other hand, the customized feedlot model provides an effective tool for mainstreaming the communal livestock farmers. This can be attributed to the net monetary value of the direct benefits from using the model. The customized feedlot model is capable of making communal livestock farmers to adapt to changing consumer taste and preference as far as beef is concerned. The aim of the study was to find out whether or not gender differences accounted for different economic outcomes in women and men beneficiaries in the customized feedlot model developed and supported by South African government and its partners. The Participatory Action Research method (involving a sample of 80 communal farmers) was used to collect the data. Both qualitative and quantitative data were collected. These data sets were analyzed using SPSS software and focus sessions. A univariate analysis of variance was conducted. The results revealed that women derive more (R5 395.6 ± 514.88) profit in communal feedlots relative to (R3730.59 ± 1491.97) the male counterpart. The gender variable was found to be statistically significant (F= 6.098, 0.016, p<0.05). The difference in profit in these businesses attributed by gender was found to be 7.3%. The model used represented 6.1% of the outcome. Levene's test was violated due to its significant difference at 95% confident interval. In addition, women appear to participate less in this type of

farming due traditional practices of livestock ownership in these rural areas. The study seems to suggest that participation of women in farming activities attracts more profit than the counterparts. Therefore, an effort to increase the women participation may be beneficial to women empowerment in poor rural areas of South Africa.

Keywords: Customized, Communal, women, customs, feedlot

Introduction

The South African agricultural sector is dualistic in nature (Aliber & Hart, 2009). Due to the legacy of past discriminatory policies, this dualism has a clear racial character. According to Vink & Kirsten (2003), May & Carter (2009), the dualistic nature is constituted by a vibrant, well integrated and highly capitalized, mostly white commercial sector on the one hand and a resource-poor, small-scale, largely subsistence, black-dominated sector on the other hand. The subsistence component of this dualistic structure is complex, non-homogenous, and has many facets, which, among others, include communal farming and traditional land tenure. Pauw (2007) reported that the dualistic nature of the South African economy manifests itself to a large extent in the ownership and access to land. Dualism has also contributed to the significant disparities in the income levels of black and white agricultural households. The poverty of land ownership (by black people) in rural areas led to the development and institutionalization of communal practices, where rural households share grazing land and cultivation plots. This type of farming was not designed for commercial enterprise but rather for basic subsistence of the rural households. It is estimated that livestock in the communal and emerging farming systems of South Africa accounts for 40 percent (DAFF, 2011). Livestock is the largest

agricultural sub-sector in these communal areas particularly in the former homelands. In Eastern Cape alone, the number of households owning cattle only accounted for 29 403 (Stats SA, 2011). Furthermore, Nqeno (2008) argued that cattle production has always formed part of communal farming in this province. Mngomezulu (2010) notes that communal livestock practices in Southern Africa are not understood well due to little research, leading to them being poorly or wrongly theorised. In this regard, government (and many professionals) believe that the communal herd is an underutilised resource for beef production, in spite of its potential to reduce beef imports (certain cuts), which are counted for 6 million kilograms at estimated value of R87 million in 2010 and 10.5 million kilograms at 200 million in 2011 (DAFF, 2011 and DAFF, 2012).

Added to these challenges are embedded disparities that exist between male and female farmers in this communal setting. These are manifested through different gender roles during the production cycle of livestock in the communal areas, and the differentiated share of wealth created through this communal model. Hitherto, very little research has been conducted on gender implications, and more specifically women empowerment, in livestock farming in communal areas. This study aims at finding out whether women have an equal chance of benefiting in the communal feedlot model developed by South African government and its partners. One of the objectives of this initiative was to promote equal participation of gender in agri-business development initiatives such as customized feedlot.

Literature review

In general literature evidence acknowledges that women are largely marginalized from decision making processes that affect their lives, particularly in agriculture (Grown et al., 2003, UN, 2010 and Ngcaba, 2012). This restricts their opportunities and potential to contribute to the country's economy (Shackleton et al., 2011). The livestock sector of South African Agricultural is no exception. Stroebel (2004) reported that men and women's participation in animal husbandry varies. This was later confirmed by Montshwe (2006) stating that the livestock sector in South Africa commands the largest contribution to the gross domestic product (GDP) to the country's economy yet the women are marginalized from the participation in the redmeat subsector. This can be attributed to the era of political dispensation and traditions custom and beliefs held by communal farming sector in terms of livestock ownership

particularly in the former homelands. Nonetheless, it appears that gender mainstreaming is crucial to transformation of livestock sector in South Africa. In a nutshell, women empowerment is crucial in agriculture. The concept of empowerment is personal, subjective, and is based on one's life experiences, personality and aspirations (Alkire, et al 2012). Alsop & Heinsohn (2005) define empowerment as (the process of, or an outcome associated with) "enhancing an individual's or group's capacity to make choices and transform those choices into desired actions and outcomes". Despite growing interest and increased investments in empowerment, the development of instruments and indicators with which to monitor and evaluate empowerment processes and outcomes is still at an early stage (Alsop & Heinsohn, 2005). As Malhotra *et al.* (2002) also point out, conducting rigorous impact assessment on women's empowerment is demanding since empowerment can have very different meanings and normative values in different socio-cultural contexts. Since its recognition in the World Development Report (World Bank, 2001) as one of the three pillars of poverty reduction, empowerment has been prominent in many project and programme evaluation literature resources. The World Bank in particular has been influential in mainstreaming the discourse on empowerment (Alsop & Heinsohn, 2005). Malhotra *et al* (2002) indicate that the World Bank has also made gender mainstreaming a priority in development assistance. A more recent World Development Report (World Bank, 2012) focuses on gender equality and development. An increasing body of literature focuses on the relationship between women empowerment and economic development. According to Duflo (2012) this relationship can be seen in two ways. On the one hand development alone could play a major role in driving down gender inequality, while on the other, women empowerment may benefit development. This paper focuses on the latter side of the argument, i.e. women empowerment can cause economic development. Duflo (2012) highlights two rationales for supporting women empowerment. First, gender inequality in itself is undesirable from a human rights perspective. Second, women are considered to play a significant role in development, and therefore their empowerment will result in broader societal outcomes. Economic policies worldwide are increasingly shaped on the latter rationale. A central argument made in this paper is that if women empowerment can lead to economic development it needs to be shown that pro-women policies can be justified on the basis that women's participation in

economic activities result in positive economic outcomes. Sabarwal & Terrell (2008) undertake an extensive review of literature on measurement of relative performance of men and women in economic activities. They point out that the evidence on the effect of gender on firm performance is mixed. Some studies providing evidence of female underperformance, others find no gender-based differentials, while others show that female-owned enterprises are at least as productive as male-owned ones. Various explanations are offered in cases where gender differences are found. These range from psychological, social to institutional reason.

Objectives, study area and methodology

This study aims at answering the question of whether government-supported programmes, gender-targeted or not, result in better economic outcomes for women, and therefore women empowerment. Following on Hallward_Driemeier (2013)'s findings that Sub-Saharan Africa has considerable hidden growth potential in its women, this study uses a profitability measure to determine whether profitability differences among participants in a government-supported customised feedlot programme were linked to gender differences. The geographical location of the study was Lugangeni village near the town of Mount Frere in Eastern Cape Province of South Africa. Stats SA (2011) indicates that Mount Frere occupies 3.53 km² (1.36 sq mi) and it has 5.252 populations with a density of 1.500/km² (3.900/sq mi). In Mount Frère, there are several villages. In this study a village refers to a clustered human settlement or community larger than hamlet but smaller than a town. Lugangeni village was selected because of its close proximity to town (where there is high density markets). In addition, Lugangeni village was also selected based on centrality and its royal capital. Its agricultural prominence had influenced its choice as a pilot for this project. Very little information has been reported about Lugangeni village and thus, the study could not report its geographical and population size. In South Africa, there are three (n=3) communal feedlots operating till to date (Lugangeni, Fort Cox and Ncora). All these feedlots are based in Eastern Cape Province and, they are situated in rural areas. A custom feeding is a business that specializes in feeding and caring for people's cattle on a fee for service basis (Frederickson, undated). Mkhabela (2007) states that, one of the aims of custom feeding is to improve the body condition of the cattle thus attracting a better price. This author mentioned that

these feedlots are set up to fatten cattle before selling them. These communal feedlots are tools for unlocking the potential of the communal farming sector which can have a huge contribution in solving the problems of food security, poverty and unemployment. The complementarities of quantitative and qualitative research methodologies were exploited to advance the quality of the research output. A non-probability sample (which used a purposive sampling frame) was used, resulting in non-representative sample size (n=80). Qualitative data were collected through a combination of literature review, interviews, and observations. The literature review included published articles and government reports. The analyses of results were conducted through descriptive and inferential procedures using the SPSS statistical software package. A descriptive analysis focused on the demographic representation was generated (by the means and standard deviation of the sample population). This demographic profile of the participants provided the distribution of the respondents of the sample.

Model Specification

In the case of General Linear Model where the Univariate statistical technique is used, the regression models are limited to a single criterion, response, dependent, or outcome variable. Univariate regression models can be expressed mathematically as a regression function:

$$Y = \beta_0 + \beta_1 X_1 + \epsilon$$

Y = dependent variable

β_0 = constant (intercept) term in the regression equation

β_1 = slope of coefficient. It measures the amount Y will change when X changes by 1 unit.

ϵ = error term (represents all variation in Y that cannot be explained by explanatory variables included in the model).

In this study: Y = Profit without subsidy and X_1 = gender of farmers

Results and discussion

This section deals with the results and discussion of the analyses of communal farmers in custom feeding program (pilot). These results are presented out of descriptive and inferential statistical outputs. The presentation of the results was coupled by their discussion. In presenting the results and discussions, descriptive analyses were presented first followed by the inferential one.

Table 1: The sample population of communal farmers in Mount Frere custom feeding scheme

	Value Label	N
Communal feedlot farmers	1.00 Male	75
	2.00 Female	5

Table 2a: The means and standard deviation of the communal feedlot farmers per gender distribution

Communal feedlot farmers	Mean	Std. Deviation	N
Male	3730.5867	1493.97474	75
Female	5395.6000	514.87940	5
Total	3834.6500	1506.19184	80

Table 2b: Estimates for communal feedlot farmers

Dependent Variable: Profit without subsidy

Communal feedlot farmers	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Male	3730.587	168.566	3394.997	4066.176
Female	5395.600	652.855	4095.866	6695.334

Table 3: Levene's Test of Equality of Error Variances^a

Dependent Variable: Profit without subsidy

F	df1	df2	Sig.
5.536	1	78	.021

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Gender

Descriptive analysis

In this study, the null hypothesis (H_0) formulated was that female communal farmers do not demonstrate better financial performance than their male counterparts (as measured in net profit terms in rand value) in the absence of government subsidisation. A

Table 2a shows the means and standard deviations of the net profit generated by communal farmers under consideration. These profits were derived from the operation without any government subsidy. According to the results both genders were able to

sample population of 80 communal farmers who are involved in the pilot project of custom feeding program were all surveyed (Table 1). According to the results in table 1, males are the majority ($n=75$) participants in this project relative to their female counterpart ($n=5$).

generate an average net profit of R3 834, $65 \pm 1506, 192$ per sale. These results also reveal that female farmers tend to generate better (R5 395, $60 \pm 514,879$) net profit per sale compared to their male (R3 730, $59 \pm 1493, 975$) counterparts. It appears that gender has an effect on the communal farming results

Table 4: The test for profits between gender distribution

Dependent Variable: Profit without subsidy

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	12995012.813 ^a	1	12995012.813	6.098	.016	.073
Intercept	390409139.413	1	390409139.413	183.196	.000	.701
Gender	12995012.813	1	12995012.813	6.098	.016	.073
Error	166225481.387	78	2131095.915			
Total	1355583744.000	80				
Corrected Total	179220494.200	79				

a. R Squared = .073 (Adjusted R Squared = .061)

associated with the custom feeding programs in the Eastern Cape. In addition, the standard deviation as presented in table 2a appears to be relatively heterogeneous.

Table 2b indicates the profits of communal feedlot farmers within the range of 95% confidence intervals. It is clear from the results in the aforesaid table that the confidence intervals of the profits are different based on gender distribution.

Table 3 presents the Levene's Test of Equality of Error Variances. This test attempts to test the null hypothesis that the variance of the error term is constant across the cells defined by the combination of factor levels (Diamantopoulos and Schlegelmilch, 2005). In a nutshell, it tests whether the standard deviation is homogeneous (the same). According to the results, ($F = 5.536$, $df_1/df_2=1/78$, $p < 0.05$, where $p = 0.021$) the F value of the test is 0.021 which is smaller than 0.05, indicating that there is a significant difference in the mean and standard deviation. This implies that the equal variances assumption is violated.

Table 4 reflects the test for profits between gender distributions. This test seeks to investigate the null hypothesis (H_0) that male and female communal farmers have equal chance of making profit without being subsidised by statutory institutions. On the contrast, the alternative hypothesis (H_a) was that male and female communal farmers have no equal chance of making profit without subsidy. According to the results in table 4, it is clear that the profit per gender was found to be significant different at $F (1,78) = 6.098$, $P < 0.05$ where $p=0.016$. This implies that we reject the null hypothesis and accept the alternative one. In a nutshell, both genders have unequal chances of making profit in an environment where subsidy is

not provided by statutory institutions. The question now is who makes more profit in that environment? In order to answer this question, a subsequent analysis was performed and presented in table 5.

According to the results in table 5, it is clear that male famers compared to female ones are less likely to make profit without subsidy from statutory institutions. In addition, the results revealed that males compared to females are 2.469 times less likely to make profit and these findings were significant at $p\text{-value} = 0.016$. These predictions were found at 95% confident intervals. Furthermore, it was found that the difference attributed by gender distribution on profit making in this study was 7.3%. These results appear to imply that female can do farming at a difficult financial environment and they are more likely to be better farmers relative to their male counterpart. The results may also reflect on the resilience of female farmers to withstand harsh farming conditions. The question is can the same resilience be shown by these farmers should they get government support in a form of subsidy? These results may also be influenced by the sample population of the female farmers since; they were relatively small as compared to their male counterparts. Assuming that the sample size of the female farmers was randomly selected, the results may give us a good picture of their resilience in agribusiness entrepreneurship. Hence forth, it may be inferred that investing in women farmers relative to male farmers may be value for investment.

Figure 1 shows the results of the observed, predicted and residual estimates of gender profit making when there is no subsidy. According to the results, there are unequal counts on all the observed, predicted and residual estimates.

Table 5: Parameter Estimates of communal feedlot farmers profits

Parameter	B	Std. Error	T	Sig.	95% Confidence Interval		Partial Eta Squared
					Lower Bound	Upper Bound	
Intercept	5395.600	652.855	8.265	.000	4095.866	6695.334	.467
[Gender=1.00]	-1665.013	674.265	-2.469	.016	-3007.373	-322.654	.073
[Gender=2.00]	0 ^a

a. This parameter is set to zero because it is redundant.

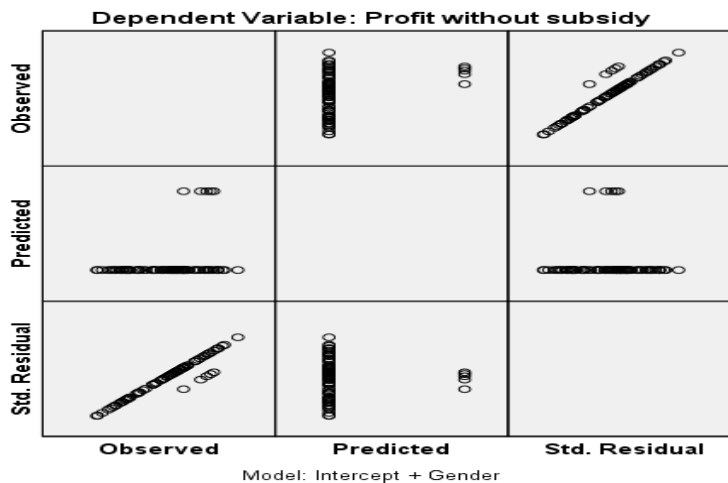


Figure 1: The illustration of observed, predicted and residual results

Conclusion and recommendations

The aim of the study was to find out whether or not gender differences accounted for different economic outcomes in women and men beneficiaries in the customized feedlot model developed and supported by South African government and its partners. At the initiation of the project the beneficiaries (farmers) made financial contribution amounting to R800 each without subsidy. The results revealed that women derived more ($R5\ 395.6 \pm 514.88$) profit in communal feedlots relative to ($R3730.59 \pm 1491.97$) the male counterpart. The gender variable was found to be statistically significant ($F= 6.098$, 0.016 , $p<0.05$). The difference in profit in these businesses attributed by gender was found to be 7.3%. The model used represented 6.1% of the outcome.

Levene's test was violated due to its significant difference. In addition, women appear to participate less in this type of farming due traditional practices of livestock ownership in these rural areas. Hence their sample size in the study is small ($n=5$). The study seems to suggest that an increase in the participation of women in farming activities may attract 2.469 times more profit than the male counterparts. Therefore, an effort to increase the women participation may be beneficial to women empowerment in poor rural areas of Mount Frere community. It can also be inferred that women are more resilient in farming at the environment where financial support is lacking. This resilience appears to suggest that women are better farmers as compared to male counterpart, assuming that limitations such as

customs (that inhibit women to be farmers), patriarchal factors, lack of access to production resources and land ownership in Mount Frere are equal. In general, women are in majority Southern African rural communities (FAO, 2011) and empowering women in the agricultural sector in Southern African region can go a long way in resolving the socio-economic challenges in the poverty stricken rural areas. A well designed pre and post agricultural support mechanism focused in women empowerment may change the agricultural land scape which may be proportional to the resolve of food insecurity.

Future studies may focus on expanding the empowerment measurement framework and to focus on other non-financial measures.

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