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Do farming practices determine women's status in South Africa?

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INTRODUCTION

Several writers have claimed women's autonomy is determined (by a large extent) on how far her family depend on her work outside the household for survival (note that most cooking, cleaning, etc are done by women in all societies, but this seems to have little effect on women's power).

In South Africa, the type of farming practised locally is largely determined by the amount of rainfall: "The most important factor limiting agricultural production is the availability of water" (Department of agriculture, 2004: p. 7). In areas where there is too little rain for crops, cattle farming is often practised (Department of Agriculture, 2004: p. 10).

RAINFALL

Rain is not evenly distributed across the country: "In total, 65% of the country has an annual rainfall less than 500 mm – usually regarded as the absolute minimum for successful dry-land farming" (Government of South Africa, 2004: p. 9). There is generally more rain in western parts of South Africa (Department of agriculture, 2004: p. 7). The east/west divide may be partly due to ocean currents: the warm Agulhas current along the east coast could have different effects to the cold Benguela current along the west coast (Government of South Africa, 2004: p. 9). Another possible influence on east/west differences in rainfall is the height of the mountains, such as the Drakensberg range. Rainfall data are reported in Table 1. Table 1 reports also the extent to which farmland is used for grazing (which, in South Africa, may indicate insufficient rain for growing crops): grazing data from Department of Agriculture (2003: table 5). Table 1 includes data on irrigation, from National Department of Agriculture (2004: table 6).

TABLE 1: rainfall and land use by province

Province	Rainfall (mm/ year)	Population density (people/Km^2)	Arable land not utilized (% of potential arable land)	Grazing land (% of farmland)	Irrigated land (% of farmland)
Northern Cape	202	3	52%	80%	1%
Western Cape	348	34	13%	70%	2%
North West	481	31	4%	37%	1%
Northern province	527	47	44%	50%	2%
Free State	532	22	5%	57%	1%
Eastern Cape	552	39	7%	60%	2%
Gauteng	668	385	7%	21%	4%
Mpumalanga	736	38	-9%	35%	3%
KwaZulu-Natal	845	100	1%	28%	4%

Sources: see text

Provinces in Table 1 are sorted in ascending order of rainfall (Dept of Environmental Affairs & Tourism, 2004). The right-hand column of Table 1 indicates that irrigation was limited; other sources confirm that only about 1% of land in South Africa is irrigated (IWRMS, 2004). Table 2 also tells us that the little irrigation in use tended to be in wet provinces, rather than in dry provinces (we assume this reflects the cost of transporting water over long distances). In the foreseeable future, we do not expect irrigation to remove differences between wet & dry provinces: if anything, irrigation may intensify such differences.

Table 2 reports another set of variables that differ markedly between provinces, which may be inter-related. I include average income per capita; hours of paid work per week (by men & women); and a measure of urbanisation in 2001, from National Treasury (2003: Table H1). Table 2 also includes a measure of the proportion of the population who were farm workers in 1996 (Statistics South Africa, 2000: table 9.1); and rainfall (source as for Table 1).

Table 2: link between farming and income

Province	GDP per Capita (Rand)	Farm income: % of GDP	Paid work (hours/week)		Rural (%)	Farmers (% of population)	Rain (mm)
			Men	Women			
W. Cape	27,411	27%	34	18	10%	5%	348
Gauteng	34,935	7%	35	19	3%	1%	668
N. Cape	18,656	8%	32	13	30%	7%	202
Free State	16,036	27%	34	17	28%	5%	532
North West	15,736	19%	31	13	62%	3%	481
Mpumalanga	19,146	21%	33	14	58%	4%	736
KwaZulu Natal	14,006	32%	26	12	52%	1%	845
E. Cape	9,514	21%	19	9	65%	1%	552
Northern province	9,136	43%	21	10	86%	2%	527

Source: see text

In Table 2, rows are sorted in a different order to Table 1: Table 2 is sorted by the proportion of the LSMS sample who are farmers. Table 2 illustrates a number of complications, which make it difficult to isolate cause from effect. As we go from the top to the bottom of Table 2,

- the average income tends to fall;
- men & women do less paid work;
- literacy rates tend to fall;
- the population tends to be more rural.

Perhaps surprisingly, the two right-hand columns of Table 2 suggest there is little connection between (% of population engaged in) farming, and rainfall. I think rainfall is important, as shown in Table 1; but it's clearly not the whole story. I interpret Table 2 as evidence that there are many influences on how people earn their living: I suspect farm work is not the job most South Africans want.

GENDER OF HOUSEHOLD VARIES BETWEEN AREAS OF SOUTH AFRICA

This next part of this paper uses data from the 1994 'Living Standards Management Study', from the World Bank. Fieldwork for this survey was co-ordinated by SALDRU at the University of Cape Town. The following Table 3 shows the nine standard regions of South Africa, arranged in descending order of the proportion of households which are female-headed (the central column

shows this proportion). Table 3 also shows the fraction of respondents who earn money from farming (right-hand column).

TABLE 3: female-headed households, and farming, by province

PROVINCE	Female headed household	Farmers
E. Cape	40%	54%
Northern Province	37%	55%
KwaZulu Natal	32%	48%
North West	29%	23%
Free State	29%	9%
N. Cape	28%	6%
Gauteng	26%	2%
W. Cape	25%	1%
Mpumalanga	25%	28%
Total	**31%**	**33%**

Source: LSMS.

The above table 3 suggests a link of some sort, between female-headed households and farming. The rows near the top of Table 3 represent people more likely to rely on farming as a source of income, and the likelihood of a woman being described as 'head of household'. The exception to this is Mpumalanga (as yet, I cannot explain this exception). This pattern in Table 3 may be related to urbanisation: for example, perhaps people unable to survive in rural areas have migrated to urban areas.

TABLE 4: female-headed households, and farming, by province and urban/rural

Area where respondent lives	PROV_FEM	Female headed household (%)	Farmers (%)
Urban	E. Cape	39	2
	Northern Province	32	8
	KwaZulu Natal	29	3
	North West	29	8
	Free State	33	4
	N. Cape	33	0
	Gauteng	27	2
	W. Cape	28	1
	Mpumalanga	25	4
	Total	**30**	**2**
rural	E. Cape	42	69
	Northern Province	39	59
	KwaZulu Natal	35	70
	North West	29	25
	Free State	19	18
	N. Cape	17	63
	Gauteng	16	67
	W. Cape	13	5
	Mpumalanga	25	36
	Total	**32**	**55**

Source: LSMS

The effects of farming are not restricted to urban areas, as Table 4 indicates. Table 4 suggests the behaviour of rural households also affects urban households, although to a diminished extent: there is a tendency for female-headed households to be female-headed near the top of Table 4 (left-hand

numeric column), despite the fact that there is never more than 8% of urban households which farm (right-hand column of Table 4). I interpret this as evidence of local culture, and that roles of women somehow become 'built in' to a person's expectations (possibly in childhood); and I hypothesise that this expectation partly survives migration to an urban area. However, the differences between the highest and lowest fractions which are female-headed is more clear in rural than in urban households (in Table 4); perhaps (the possibility of) a woman's employment in non-agricultural jobs weakens the effects of farming on her status.

TABLE 5: paid employment (by husband & wife) versus farming

PROV_FEM	Hours of paid work (per week): Husband	Hours of paid work (per week): Wife	farmers (%)
E. Cape	19	9	54
Northern Province	21	10	55
KwaZulu Natal	26	12	48
North West	31	13	23
Free State	34	17	9
N. Cape	32	13	6
Gauteng	35	19	2
W. Cape	34	18	1
Mpumalanga	33	14	28
Total	**29**	**14**	**33**

Source: LSMS.

Table 5 indicates a clear link between employment (as expressed in hours per week by men and women), and farming (as shown by % of respondents who earn a living from farming). The general pattern as we go from top to bottom of Table 5 is that we see more farming, and fewer hours of paid employment.

TABLE 6: paid work by farmers & non-farmers.

farming	Hours of paid work (per week): husband	Hours of paid work (per week): wife
Non-farmer	29	15
Farmer	9	6
Total	22	12

Source: LSMS.

Table 6 indicates that respondents reporting themselves as farmers indicated they do few hours per week of paid work. I interpret Table 6 as evidence that households generally do not include farm work as 'paid employment' – and hence that farm work, for most South Africans, is subsistence farming rather than working as an employee on a state farm. Note, however, that LSMS evidence from data (not reported here) provides evidence that a small proportion of LSMS respondents hire employees to work on farmland.

So far, the evidence that women's farming gives women higher status is not persuasive: which is cause, and which effect? Table 5 offers more information.

TABLE 7: female-headed household by type of farming

Land use	Female headed households (%)	Number of cases
crops	30	5152
Mostly crops	31	514
half of each	30	1468
mostly grazing	21	1312
grazing	17	692
Non-farmer, or missing data	29	15568
Total	**29**	**24706**

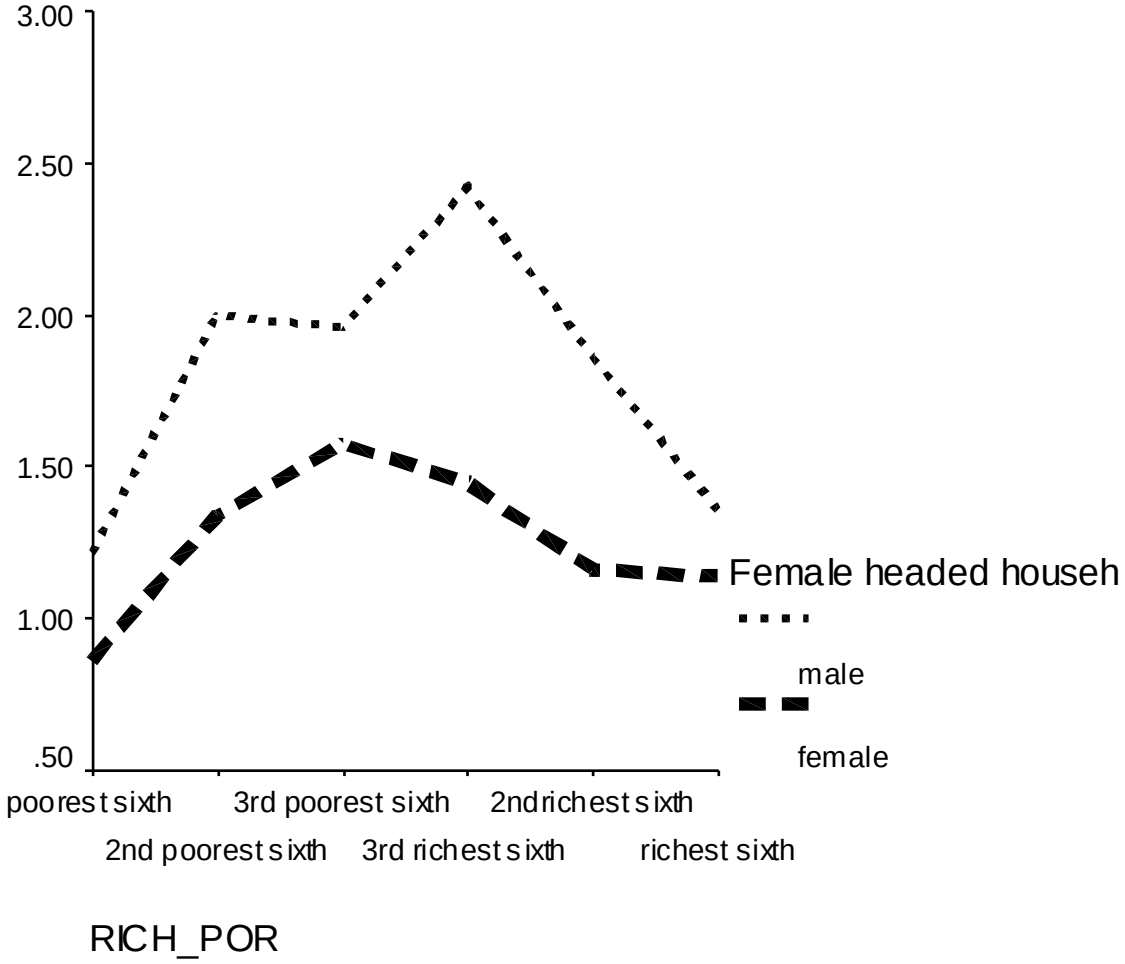
Source: LSMS (rural households only)

Table 7 is limited to rural households only, because few urban households are farmers. The picture we learn from the first five numeric rows of Table 7 is that where farming is grazing, there is much less likelihood of female headship. No doubt complicated factors are at work, as regards the effects of types of farming on gender of household head. Perhaps the high proportion of female-headed households in crop-growing households is evidence of the importance of women's work in growing crops. Alternatively, we could consider the effects of grazing on households: Table 7 suggests grazing is mainly men's work. The 'non-farmer, or missing data' row in Table 7 is a mixture of various types of respondents: some of them financially dependent on their spouse, and others in non-agricultural jobs (such as commuting to a factory in a nearby town).

DOES GENDER OF HOUSEHOLD HEAD MATTER?

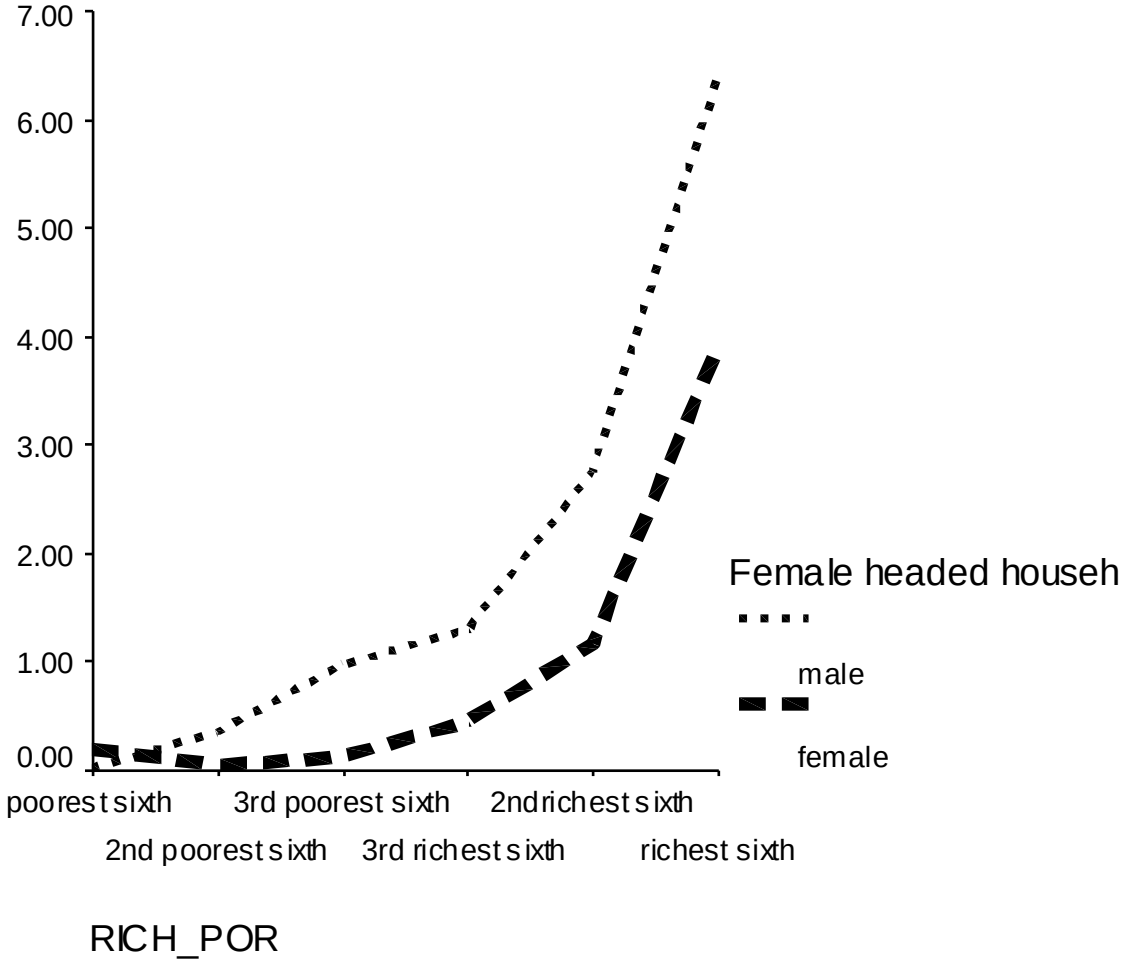
I think gender of head-of-household is a guide to how powerful husband and wife are, as regards household decisions (such as spending). Many writers report children in female-headed households fare better than those in male-headed. If children tend to be better-fed in female-headed households, then what types of spending do male-headed households prioritise instead of food? Chart 1 indicates that as a percentage of total spending, male-headed households tend to spend more (than female-headed households) on alcoholic drink.

CHART 1: spend on alcohol (% of total spending) by income, by head-of-household gender



Source: LSMS.

CHART 2: spend on cars (% of total spending) by income, by head-of-household gender



Source: LSMS.

Chart 2 indicates that as a percentage of total spending, male-headed households tend to spend more (than female-headed households) on cars. Cars are a luxury, and spending money on buying & running a car may cause children in the household to go hungry.

Another way a household could spend money is on alcohol. In order to shed more light on alcohol consumption, I now consider the possibility that some South Africans drink more alcohol because they are thirsty (we might expect this to apply especially to agricultural labourers, and others employed outdoors). There are climatic variations within South Africa, which might affect thirst; alternatively, alcohol may be a way to deal with heat stress. Heat stress depends on humidity, but "None feels comfortable when the temperature is more than 97^{o}F, however low the relative humidity is" (Subbaramayya & Surya Rao, 1976: p. 436). Edgar (1999, and related articles for other areas) reports a range of summer temperatures for each province of South Africa, and the higher end of the temperature range for each province are shown in Table 8.

TABLE 8: Summer temperature by province

Province	Upper end of temperature range (^{o}C)
Northern Transvaal	27
Eastern Cape	27
KwaZulu-Natal	28
Mpumalanga	29
Free State	31
North West Province	31
Western Cape	32
Northern Cape	32
Gauteng	32

Source: Edgar (1999) and related Encarta encyclopaedia articles

To assess regional variations in alcohol consumption and unemployment (in Tables 8 and 9), I classify the above temperatures in three groups: 27o, 28 to 29^{o}, and 31 to 32^{o}. These typical summer temperatures are a poor guide to extreme temperatures sometimes experienced - for example, NOAO (1991: p. 21) report average January daily maximum temperature for Port Nolloth as 67^{o}F, but the "extreme maximum" as 107^{o}F.

TABLE 9: REGIONAL VARIATIONS IN ALCOHOL CONSUMPTION

	Fraction of families who are 'heavy drinkers' (over 5% of spending is on alcohol)			
	LSMS, 1993/4		***WAS,*** 2000	
Maximum summer temperature	**RURAL**	**URBAN**	**RURAL**	**URBAN**
27^{o}	11% (1,321 cases)	7 % (396 cases)	*not available*	19 % (176 cases)
28^{o} to 29^{o}	14% (1,162 cases)	9 % (787 cases)	*not available*	17 % (322 cases)
31^{o} to 32^{o}	19% (861 cases)	12 % (2,994 cases)	*not available*	27 % (1,236 cases)

Differences between rows are statistically significant in both LSMS and WAS (based on ANOVA)

Table 9 reports data on alcohol consumption and local summer temperatures, and suggests a link between alcohol consumption and climate: households tend to spend a higher fraction (of total spending) on alcohol. People may drink more alcohol in hot areas because of thirst, but I think this interpretation unlikely: most South African households are poor, and alcoholic drinks are much more expensive than soft drinks such as water.

Table 9 implies we cannot fully understand heavy drinking without considering urbanisation, because alcohol consumption is higher in rural areas (for *LSMS*: spending data are not available in the rural sample of *WAS*). Looking at the number of cases in the two *LSMS* columns, it is clear that most people in cooler areas (27^o C) live in rural areas, whereas people in the hotter parts of South Africa (31^o to 32^o: the bottom row of Table 9) are almost all in urban areas. I interpret this as evidence that farming is not a good source of employment in the hottest parts of South Africa, so people have to live in cities - for example, Philips (2000: p. 24) classifies the north-western part of South Africa as 'desert'.

Table 10: REGIONAL VARIATIONS IN UNEMPLOYMENT

	Fraction of adults who seek but cannot find work			
	***LSMS*, 1993/4**		***WAS*, 2000**	
maximum summer temperature	RURAL	URBAN	RURAL	URBAN
27^o	46% (1,577 cases)	24% (585 cases)	49 % (230 cases)	50 % (113 cases)
28^o to 29^o	34% (2,017 cases)	20% (1,283 cases)	54 % (284 cases)	41 % (237 cases)
31^o to 32^o	27% (1,460 cases)	12% (4,421 cases)	37 % (369 cases)	35 % (940 cases)

Differences between rows are statistically significant in both LSMS and WAS (chi-square test)

Table 10 reports the fraction of adults who described themselves as unable to find work; it excludes people in formal education, ill or retired people, housewives, and other people not seeking employment. Table 10 shows a clear pattern – unemployment was lower in hotter areas, for both urban and rural locations. Table 10 combines data on both genders, but the pattern of lower unemployment in hot areas applies to both men and women. I find it difficult to interpret Table 10; but it illustrates the complexities of behaviour in South Africa. Looking at Table 10 suggests a possible reinterpretation of Table 9: households in hot areas spend may more on alcohol because unemployment is lower (and can afford more alcohol). Other possible explanations could explain regional patterns, such as cultural differences. *LSMS* and *WAS* both asked about the respondent's home language, but there are so many answers (English, Afrikaans, Zulu, Xhosa, N. Sotho, S. Sotho, Tswana, Tsonga/Shangaan, Venda, Swazi, Ndebele, and other) that a very large sample would be needed to analyse each language group.

CONCLUSION

Several writers have claimed male & female roles in farming affect the status of women. For example, Lessinger's (1989) analysis of India claims that the relative freedom of women in southern India results from rice-growing, which depends heavily on female labour (the labour-intensive task of transplanting rice).

In an African context, Kent (1995: p. 520) used the phrase "man the hunter and woman the gatherer", implying that this is a traditional division of labour (while acknowledging that this division is not clear-cut in the central Kalahari people she studied). If so, perhaps we should interpret growing crops as a modern version of women's traditional role, and grazing as related to

men's traditional roles. It seems difficult to test such a hypothesis, because we do not have time-use data from ancient times (to compare with modern data).

This paper suggests the following sequence of causality:

Women's work is essential to arable farming;
In areas where arable farming predominates, women's status is relatively high;
Where women's status is high, women have more control of household finances;
Children tend to be better-fed where women have a relatively strong influence.

We can use gender of head of household as a crude measure of how powerful women and men are, as regards household decisions, such as how to spend household money.

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