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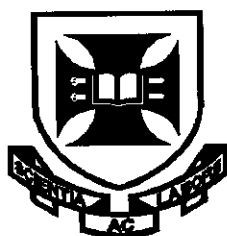
Working Paper No. 20

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* School of Economics, University of Queensland, Brisbane 4072 Australia.

Email: s805985@student.uq.edu.au

† School of Economics, University of Queensland, Brisbane 4072 Australia.

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For more information write to Professor Clem Tisdell, School of Economics, University of Queensland, Brisbane 4072, Australia. (e-mail: c.tisdell@economics.uq.edu.au)

FEMALE PARTICIPATION IN DECISION-MAKING IN AGRICULTURAL HOUSEHOLDS IN KENYA: EMPIRICAL FINDINGS

Tabitha Kiriti, Clem Tisdell and Kartik Roy
School of Economics
University of Queensland
Brisbane 4072 Australia

Abstract: *Survey data on which this paper is based were collected in a rural district in Kenya between December 2000 and January 2001. The main objective was to identify the factors that determine female participation in household decision-making. Our results suggest that bargaining models and resource theory cannot be applied in a society where customarily determined sex and social stratification systems place males higher than females and determines that only men make major decisions. Our results support the hypothesis that cultural theory is more significant than bargaining models or resource theories in determining women's participation in decision-making in Kenya.*

Key Words: resource theory, bargaining theory, cultural theory, unified household model, decision-making, empowerment, and entitlement.

1. INTRODUCTION

The main objective of this paper is to identify the factors that determine female participation in rural household decision-making in the Nyeri district of Kenya and to draw implications from this about agricultural resource-use and theories of the status of females relative to males. Blood and Wolfe, (1960) in their resource theory argue that culture is a poor predictor of the observed patterns of decision-making within the family. In place of cultural factors, they suggest that competence determines who makes decisions in the household. We argue that although competence and other bargaining models are important in explaining women's participation in decision-making, they may not be applicable in situations where customarily determined sex and social stratification systems place males higher than females and determine that only men will make major decisions and control valued resources. We therefore conclude that cultural theory more than the resource or bargaining models determines the participation of women in decision-making in the African setting.

2. OVERVIEW OF RELEVANT THEORIES

Various theories have been used to explain household decision-making.

Becker (1965, 1981) and Rosenzweig (1990) propose that a single joint utility function can adequately represent the dynamics of household decision-making. One of the assumptions of the model is that all household members agree to certain management rules about the distribution of income within the household and the allocation of household member's time. Fapohunda (1978) calls this concept into question by noting that household income is not always pooled, and also men and women often have separate, culturally designed obligations to meet different needs within and beyond the conjugal family. What the household decides to do with its resources is not the outcome of spontaneous utopian agreement but instead grows out of serious bargaining (covert and overt) among its individual members.

The model also assumes that all household members have equal bargaining power to enforce their own definition of utility and also that all members benefit equally from the way resources are actually allocated. In this model, all resources are pooled and reallocated to individuals.

Both Messer (1990) and Engle (1990) criticise the unified household model as a misrepresentation of reality by arguing that allocation rules are the result of conflict and conflict resolution based on different member's power and influence within the

household. The model does not address the interpersonal dynamics by which the household preference function emerges. It does, however, include individual level variables that have been identified as important determinants of household preferences provided they are measurable characteristics (such as power).

Bargaining models on the other hand emphasise conflict among family members and depict the household allocation of resources as the outcome of a bargaining process. Sen (1985) claims that the different tastes and preferences of men and women are resolved through a process of cooperative conflict while Whitehead (1981) says that the process of bargaining generates a conjugal contract which specifies the rights and obligations of both parties. In such models, a rise in assets owned or resources received by an individual from extra family resources increases that person's relative bargaining position or power.

Folbre (1984) posits that the household is a group of maximising individuals in which individual family members cooperate and bargain with one another primarily to further their own personal interest. Bargaining power is affected by the individual's contribution to the household income, by his/her potential earnings outside the household, and even support from extra-household coalitions struck by members of the same class, race or gender. Other social factors such as support from family of origin, freedom to divorce and remarry, polygamy, individual personality, structure of the economy, the socio-cultural definition of a particular role in the family and the personality of the individual fulfilling the role, affect women's bargaining power (Bennet, 1990).

Engle (1990) stresses the conflict resolution model rather than the unified model of intra-household allocation. The conflict resolution model says that members with power to enforce their preferences may coerce, but household members without authority can still exercise influence through their own special knowledge and expertise, by persuasion, or by quiet resistance.

Bargaining models have also been criticised since they fail to generate testable hypothesis. However, they solve the problem of preference aggregation and the approach is consistent with existing anthropological evidence (Appleton *et al.* 1992).

Sen's (1997) theory of endowments and entitlements originally used to explain the occurrence of famine was subsequently extended to explain the socio-economic status of women. But his entitlement approach, according to Tisdell *et al.* (2000) constitutes

more a framework than a theory and needs to be supplemented by more precise theories, such as bargaining theories or resource and cultural theories.

Blood and Wolfe (1960) offered one of the earliest explanations for the base of family power, in what has become known as resource theory. Their basic argument is that relative resources and competence controlled by each spouse is the most important basis of relative power in the family. They found that the husband in farm families, where a patriarchal tradition would be expected to operate, did not have substantially more power than in the average family. They argued that spouse's familial behaviour is greatly influenced and regulated by their relative resources – education, occupation, income and to a lesser extent, social participation. This was based on the evidence provided by Wolfe (1959) that supported the assumption that those husbands who are generally successful and prestigious will have more power and will therefore derive more authority in the home than husbands who are less successful. Centers *et al.* (1971) confirmed Blood and Wolfe's hypothesis. Safilios-Rothschild (1967) reported a significant negative correlation between the father's occupation and education or social status and the extent of his decision-making. Safilios-Rothschild (1970) found no significant variation in decision-making power by the husband's occupation or education.

Wolfe (1959) maintained that wives who are working or have worked outside the home have more power and will derive more authority than wives who have not worked. However, Safilios-Rothschild (1969) reported that wife's working status did not influence the decision-making pattern. In fact, she noted in her earlier study that while working wives think they have more say than non-working wives, husbands of working wives do not see any difference (Safilios-Rothschild, 1967). The role of ideology was important in this case.

Kim and Kim (1981) found that the woman's education, as a modernising agent, is the most influential factor affecting the role of the woman in household decision-making. Socio-economic status was not a significant influence except when derived from the woman's education. The woman's employment outside the home was not a significant factor in their empowerment in household decision-making. If anything it had a negative impact. They felt that statistically this result might have been influenced by the higher proportion of women of lower socio-economic status working in Korea than women having middle or upper socio-economic status.

Blood and Wolfe (1960) argued that culture is a poor predictor of the observed patterns of decision-making within the family. More practical predictors of who has the actual power of making decisions in the family turn out to be the pragmatic sources of powers within a marriage. These are: the occupational status of the husband, since the higher the occupational status of the husband, the more his resources; and age, for as couples approach middle age, the wife becomes relatively more powerful. Women emerged most powerful in families where the overall resources were lowest. Employment for the wife outside the household increases her resources and thus her power in decision-making, as does higher education for the wife. In short, resource theory states that the spouse that has the best resources to contribute to a marriage ends up with the balance of power within the marriage. However, this would apply only in a culture that stresses achievements (Rodman, 1972).

Conklin (1979) identifies cultural as well as resource factors as determinants of who has the actual power of making decisions in the household. He made an empirical study exploring power differences within the household in a district in India. Maximum power for women in his sample was associated with urban place of residence, high education for the wife as well as employment for the wife in the urban setting. Comparing his results with those of Blood and Wolfe (1960), he concludes that while competence determines who has power in both countries, in the Indian context there are in addition, cultural variables, which correlate highly with decision-making. Social research shows that women have no class status in India in their own right. The class position they obtain is derived from their fathers' and husbands'. But employed women occupy an additional independent status. This is based on criteria such as occupation and education that are used for classifying men, plus the stratifying dimension of sex, which has the effect of lowering the woman's independent status. So the employed woman is double-ranked, but her derived status is always more important than her independent status (Eichler, 1977).

Strauss (1975, 1977) studied power within the household empirically in several different settings in India and the United States. His results show that in the Indian context, unlike the United States, cultural variations do count in determining who makes decisions within the household.

According to Conklin (1979) rural women engaged in traditional occupations such as harvesting do not appear to have any increase in power from such work. The research

results of Tisdell, Roy and Regmi (2001) for India support this hypothesis. However, according to Conklin (1979), urban wives show an increase in power when gainfully employed outside the household.

3. MEASURING THE POWER OF DECISION-MAKING WITHIN THE HOUSEHOLD IN THE NYERI DISTRICT, KENYA.

The participation of women in decision making at the household level can be looked at using the household economic theories, bargaining theories, resource theories, entitlement theories, or cultural theories.

Household economic models have been criticised by various authors (Messer, 1983, 1990; Engle 1990), since they do violence to reality. The bargaining models have also been criticised since they fail to generate testable hypotheses. However, they solve the problem of preference aggregation and the approach is consistent with existing anthropological evidence (Appleton *et al.* 1992). The endowment or entitlement models have also been criticised as being more a framework than a theory (Tisdell *et al.* 2000).

However, it is unclear whether bargaining models can be used in explaining women's participation in household decision-making in Africa and in particular Kenya. Women lack bargaining power at the household level due to the customarily determined sex and social stratification system that places males higher than females and determines that only men will make major decisions and control valued resources.

Conklin (1979), and Kolenda (1967) in their studies of India contend that it is possible that gender relationships are mainly culturally determined. This would therefore mean that cultural theory more than the endowment or bargaining models determine the participation of women in decision-making.

3.1 Study Site and Data Collection Methodology

The study was conducted in Nyeri District in Central Kenya. Central Kenya is mainly inhabited by the Kikuyu who are Kenya's largest ethnic group. Nyeri district is bordered by Mount Kenya to the East and the Aberdare ranges to the West. The Western part is relatively flat while to the south and east the topography is characterised by steep ridges and valleys. Rainfall varies from 750 millimetres in the central – northern part of the district to 1750 millimetres in the south-western and

north-eastern parts of the district. The "long" rains normally begin in March and end in May, while the "short" rains begin in October and end in December.

Nyeri district has a very high population density with some areas of high agricultural potential, such as the Tetu division, having more than 400 persons per km², whereas new settlement areas such as Kieni West have 100 persons per km². The infrastructure in the district is better developed than in other rural districts of Kenya. Major agricultural products are coffee, tea, maize, pyrethrum, dairy, potatoes, beans, fruits yams and vegetables. The principal town is Nyeri with a population of about 50,000 persons and it is also the provincial headquarters.

Samples were drawn from the six divisions that make up Nyeri District. These are Mukurwe-ini, Othaya, Mathira, Nyeri, Tetu and Kieni divisions. These divisions were selected to capture differences in cropping patterns, ecological conditions, and the role of women in agricultural production. A random sample of 330 households was selected but due to death, migration and non-responses we ended up with 185 households with 235 respondents. These comprised of 98 male respondents, 63 wives staying with their husbands, 23 wives staying alone as their husbands were working in the city and 48 unmarried women who were heads of their households¹. The household questionnaire comprised several parts including a household roster and sections that asked questions about land, family and hired labour, fertiliser and agro-chemicals, contact with extension officers, use of credit, non farm employment, education, household decision-making and so on.

3.2 Overview of Methodology and Data Limitations

From our questionnaire, we had questions that were intended to gauge how much women were involved in household decision-making. We assume that those women who participate more in decision-making at the household level are more empowered and hence their socio-economic status is higher than those who participate less. Ten different variables indicating the socio-economic status of women are considered for analysis in our study as dependent variables. These are:

1. whether or not the women make decisions about use of uncultivated land,
2. whether or not they make decisions about the future of the children,

¹ We used the Kenya Central Bureau of Statistics Welfare Monitoring Sampling Frame to randomly select the 330 households. The survey was conducted during the month of December 2000 and part of January 2001. Most people travel to the urban areas to visit their relatives for the Christmas festivities.

3. whether or not they keep money after sale of crops,
4. whether or not they make decisions on acreage of cash crops,
5. whether or not they make decisions on acreage of food crops,
6. whether or not they make decisions on when to apply fertiliser or pesticides on food crops,
7. whether or not the women make decisions on when to apply fertiliser or pesticides on cash crops,
8. whether or not they make decisions on when to direct labour to cash crops,
9. whether or not they make decisions regarding how much to sell and consume at home and lastly,
10. whether or not they make decisions on household spending.

However, as Tisdell, Roy and Regmi (2001) have mentioned, it is very difficult to measure socio-economic status or empowerment in the family because not all components vary in the same direction. For example, we may find cases where the direction of variation is in opposite directions. For example, a woman who could be making decisions to do with uncultivated land may not be making decisions to do with fertiliser or pesticides. Also, it does not mean that those women who are making more decisions to do with farming and fewer decisions to do with the family are more empowered than those who are making more decisions to do with the family and less to do with farming.

The question is what qualities or attributes do women have who make the above decisions? What are the factors that influence a woman's decision-making in the household? In other words, what are the variables that give a woman bargaining power to be able to make the above decisions. Bargaining theories would suggest that if a wife has greater relative threat or bargaining power in the household, she is likely to be involved in major decision-making than one who has little or no bargaining power. But, as Tisdell, Roy and Regmi (2001) argue measuring bargaining or threat power in a family situation is complicated. However, we hypothesise that certain qualities or variables can be used as indicators of a woman's bargaining power. The determinants or independent variables assumed in this study to influence the women's power of decision-making are:

1. wife's age,
2. wife's education level,

3. perceived economic status of the household,
4. whether the couple is staying together or separated,
5. threat of divorce from the wife and lastly,
6. whether the wife is employed outside the households.

Older wives are hypothesised to be more powerful and would therefore participate more in decision-making than younger ones. This is in agreement with results from studies of American families. Blood and Wolfe, (1960) found that age increases the power of the wife. Conklin (1979) in his study on India, found that as a woman gets older and has children, she is given more power.

Education level of the wife is assumed to be positively related to her participation in decision-making since a highly educated woman is assumed to be more aggressive and aware of her rights and therefore more participatory in decision-making (Kim and Kim, 1981). Conklin (1979) also found that in India, increased education of the wife resulted in her increased power in decision-making.

We also consider the hypothesis that wife's employment outside the makes her more powerful in family decision-making (Conklin, 1979; Blood and Wolfe, 1960 and Engle, 1990). If women have income-earning opportunities outside the home, they may develop greater self-confidence and esteem which in turn may increase their ability and willingness to influence allocation decisions. Furthermore the degree of participation in the workforce is included as a positive term in the estimation of the Gender Development Index. Tisdell, Roy and Regmi (2001) also use wife's employment outside the household as a possible indicator of a woman's bargaining power in the household.

We consider the hypothesis that those wives who belong to households that are above average or average in their economic status have less decision-making power than those who are below average. We take the perceived economic status of the household as reflecting the economic status of the husband. Rich men and especially older ones in Africa and in particular Kenya frequently have more than one wife and this would obviously reduce the participation of the wives in family decision-making as the husband has to be assertive to maintain control of his wives.

We also posit that if the couple is staying together, the woman has less decision-making power. This is because for the separated (husband could be working in the city) couples, the wife is not answerable to the husband on a daily basis.

Threat of divorce is also tested to see if it is positively related to decision-making power. Tisdell, Roy and Regmi (2001) also used the possibility of divorce as an independent variable in their study of India. The degree of social acceptability of divorce, the probability of remarriage for women, and the viability of female-headed households, which in turn is determined by access to significant income-earning opportunities, influence the threat power of divorce as a bargaining tool in decision-making. Among the Kikuyu, it is very difficult for women to initiate divorce proceedings as in most cases, her own parents will not consent to it. Also, her chances of remarrying are almost nil, the property acquired with her husband remains with him, she cannot inherit property at her parent's home, as it is meant for the men and also she has to leave with her children. As a single parent she receives no support from her children's father. However, from our questionnaire, there were wives who indicated that they would initiate divorce and it is interesting to see whether this acted as a threat or put them in a weaker bargaining position in the household.

Control of cash after sale of crops is assumed to give a wife bargaining power. This is based on the fact that if a wife has to beg her husband for money on a daily basis, she would fear to be assertive because this would mean that the husband may refuse to give her money for the household upkeep. Controlling cash after sale of crops also means that the wife would feel motivated to work even harder because she stands to benefit from her toil.

It is important to note at this level that some of the most important aspects of the household decision-making process cannot be objectively quantified. It therefore means that most of the variables used are based on the perception of the respondents. A wife may think that she makes most decisions or she is not involved in making certain decisions while on the other hand, the husband may think that he allows her to make lots of decisions. Secondly, the measurement of decision-making power within the household poses serious problems. Genuine differences of opinion are likely to exist between husband and wife as to who makes what decisions. Also, couples may not reveal the true gender roles within their household. For example, the female contribution to household decision-making may be greater than either party will publicly acknowledge.

Two statistical methods are used in our study for our analysis. First we compare the proportion of responses of who makes certain decisions against the explanatory variables and then examine the significance of their differences using the Chi-square

technique. Secondly, we re-code the independent variables to make them binary and then use an ordered Probit model.

The ordered Probit model can be explained as follows. Assume a decision on uncultivated land can be made by the wife, her husband or either one of them can make the decision only after consultation. The ability of the wife to make the decision is dependent on a number of independent variables such as her age, education level, whether she is staying with her husband, her threat of divorce, employment outside the household, her perceived economic status of the household and also whether she controls cash after sale of crops. Let us assume that Y_i represents the decision on uncultivated land. If the wife makes it, we give the response a 1 and if made by the husband, we give it a 2. If they consult each other, we give it a 3. We can therefore write the ordered response model as follows:

$$\begin{aligned} Y^* &= x_i' B + E_i \\ Y_i &= 1 \text{ if } Y^*_i \leq 0, \\ &= 2 \text{ if } 0 < Y^*_i \leq Y, \\ &= 3 \text{ if } Y^*_i > Y \text{ or } Y_i = 3 \text{ if } Y_{j-1} < Y^*_i \leq Y_j \end{aligned}$$

Y^* can be interpreted as the ability of the wife to make the decision. There is need to normalise the scale of Y^*_i such that E_i has a fixed variance, hence $E_i \sim \text{NID}(0,1)$. B is a vector of coefficients.

The implied probabilities are obtained as:

$$\begin{aligned} P[Y_i = 1/X_i] &= P[Y^*_i \leq 0/X_i] = \Phi(-X_i' B), \\ P[Y_i = 3/X_i] &= P[Y^*_i > Y/X_i] = 1 - \Phi(Y - X_i' B) \text{ and} \\ P[Y_i = 2/X_i] &= \Phi(Y - X_i' B) - \Phi(-X_i' B). \end{aligned}$$

Y is an unknown parameter that is estimated jointly with B . Estimation is based upon maximum likelihood where the above probabilities enter the likelihood function. The interpretation of the B coefficients is in terms of the underlying latent variable model (for example, larger B means that the corresponding variable increases a wife's ability to make decisions). Suppose in the above model that the K^{th} coefficient, B^k is positive. This means that the latent variable Y^*_i increases if X_{ik} increases. Accordingly, the probability that $Y_i = 3$ will increase while the probability that $Y_i = 1$ will decrease. The effect on the intermediate categories however, is ambiguous; the probability that $Y_i = 2$ may increase or decrease.

We now present a summary of findings based on the survey raw data.

4. SUMMARY OF FINDINGS

Out of a total of 235 respondents there were 137 women. From these, there were a total of 89 wives and 48 unmarried women whom we selected as our sample for analysis². Each respondent was asked about a few alternatives: (1) if the wife alone made the decision; (2) if the husband alone made the decision; (3) if the husband made the decision after consulting the wife; (4) if the wife made the decision after consulting with the husband; and (5) if the decision was made by somebody else who could have been the father in law, father, mother, mother in law, brother, brother in law, sister, or sister in law etc.

The questions were scored with a 1 if the wife alone made the decision, a 2 if the husband alone made it, a 3 if the wife made the decision but consulted the husband, a 4 if the husband made the decision but consulted the wife, and a 5 if somebody else made the decision. Because the questions were administered orally, a more elaborate set of responses was not possible. However, most respondents had little trouble in quickly deciding which category to put themselves into. We also did some analysis on decision-making for the 48 unmarried women to see whether they make decisions alone or other people influence their decision-making.

Respondents were asked who had the final say in a number of decisions. These questions touched on decisions made about the future of the children, control of cash in the family, farming and expenditure decisions.

Out of 89 wives interviewed, only 16.9% made decisions on uncultivated land without consulting their husbands while 41.6% left these decisions to their husbands. Only 15.7% of the wives made the decisions after consulting their husbands and their husbands consulted 19.1% of the wives before they made the decision. **(Table 1)**. For the unmarried women 89.6% of the women made the decision on their own. **(Table 2)**.

Table 1: Frequency and relative frequency of responses for sample of married women in the Nyeri District of Kenya.

1.1 Decisions on uncultivated land

Decision made by:	Frequency	Percent	Valid Percent
Wife	15	16.9	17.9
Husband	37	41.6	44.0
Wife after consulting Husband	14	15.7	16.7
Husband after consulting wife	17	19.1	20.2
Others	1	1.1	1.2
Missing values	5	5.6	

1.2 Decision on the children's future

Wife	8	9	9.0
Husband	25	28.1	28.1
Wife after consulting husband	19	21.3	21.3
Husband after consulting wife	36	40.4	40.4
Others	1	1.1	1.1

1.3 Decision on acreage of cash crop

Wife	14	15.7	20.3
Husband	55	61.8	79.7
Total	69	77.5	100.0
Missing Values	20	22.5	

1.4 Decision on acreage of food crops

Wife	23	25.8	25.8
Husband	19	21.3	21.3
Wife after consulting husband	27	30.3	30.3
Husband after consulting wife	18	20.2	20.2
Others	2	2.2	2.2

1.5 Decision on how much fertiliser/pesticide to use on food crops

Wife	25	28.1	28.1
Husband	17	19.1	19.1
Wife after consulting husband	28	31.5	31.5
Husband after consulting wife	19	21.3	21.3

² We found it easier to interview the wives in the absence of their husbands as the husbands' presence could have easily intimidated them. We therefore consider their responses as honest. In another paper we shall consider the responses of both husbands and wives.

1.6 Decision on how much fertiliser/pesticide to use on cash crops

Decision made by:	Frequency	Percent	Valid Percent
Wife	13	14.6	18.8
Husband	16	18.0	13.2
Wife after consulting husband	20	22.5	29.0
Husband after consulting wife	19	21.3	27.5
Others	1	1.1	1.4
Missing values	20	22.5	

1.6 Decision on when to direct labour to cash crops.

Wife	18	20.2	26.1
Husband	18	20.2	26.1
Wife after consulting husband	19	21.3	27.5
Husband after consulting wife	13	14.6	18.8
Others	1	1.1	1.4
Missing values	20	22.5	

1.7 Decision on how much to use at home and how much to sell

Wife	25	28.1	32.9
Husband	16	18.0	21.1
Wife after consulting husband	23	25.8	30.3
Husband after consulting wife	11	12.4	14.5
Others	1	1.1	1.3
Missing values	13	14.6	

1.8 Who makes decision on household spending?

Wife	12	13.5	13.5
Husband	21	23.6	23.6
Wife after consulting husband	21	23.6	23.6
Husband after consulting wife	34	38.2	38.2
Others	1	1.1	1.1

1.9 Does the wife keep money after sale of crops?

Yes	13	14.6	16.5
No	66	74.2	83.5
Missing values	10	11.2	

1.10 Who actually keeps the money after sale of farm produce?

Husband banks it in his own account	39	43.8	60.0
Husband banks it in joint account	26	29.2	40.0
Missing values	24	27.0	

1.11 Age Distribution

Decision made by:	Frequency	Percent	Valid Percent
15-45 (Young)	67	75.3	75.3
46-80 (Old)	22	24.7	24.7

1.12 Education level

Never gone to school	9	10.1	10.1
Primary school	58	65.1	65.1
Secondary school	21	23.6	23.6
Tertiary	1	1.1	1.1

1.13 Can the woman read or write?

Yes	80	89.9	89.9
No	9	10.1	10.1

1.14 Employed outside the household

Yes	7	7.9	7.9
No	82	92.1	92.1

1.15 Women's Earnings per month

kSH1000 - 4000	3	3.3	42.9
kSH4001 - 6000	3	3.3	42.9
kSH6001 and over	1	1.1	14.3
Missing values	82	92.1	

1.16 Perceived economic status of household

Above average	2	2.2	2.2
About average	64	71.9	71.9
Below average	23	25.8	25.8

1.17 Couple staying together

Yes	63	70.8	70.8
No	26	29.2	29.2

1.18 Can wife ask for a divorce?

Yes	12	13.5	13.6
No	76	85.4	86.4
Missing values	1	1.1	

Table 2: Frequency and relative frequency of responses for unmarried women in the Nyeri District of Kenya.

2.1 Decision on uncultivated land

Decision made by:	Frequency	Percent	Valid percent
Woman	43	89.6	97.7
Others	1	2.1	2.3
Missing	4	8.3	

2.1 Decision on future of children

Woman	44	91.7	91.7
Others	4	8.3	8.3

2.3 Decision on acreage of cash crops

Woman	12	25.0	42.9
Others	16	33.3	57.1
Missing	20	41.7	
Total	48	100.0	

2.4 Decision on acreage of food crops

Decision made by:	Frequency	Percent	Valid percent
Woman	28	58.3	100.0
Missing	20	41.7	

2.5 Decision on Fertiliser and pesticides on cash crops

Woman	28	58.3	100.0
Missing	20	41.7	

2.6 Decision on fertiliser and pesticide on food crops

Woman	47	97.9	100.0
Missing	1	2.1	

2.7 Decision on how much to sell and how much to consume

Woman	39	81.3	97.5
Others	1	2.1	2.5
Missing	8	16.7	

2.8 Decision on household spending

Woman	46	95.8	95.8
Others	2	4.2	4.2

2.9 Decision on when to direct labour to cash crops

Woman	28	58.3	100.0
Missing	20	41.7	

2.10 Who keeps money after sale of crops

Woman	33	68.8	100.0
Missing	15	31.3	

2.11 Age distribution

Young	12	25.0	25.0
Old	36	75.0	75.0

2.12 Employed outside the household

Employed	4	8.3	8.3
Unemployed	44	91.7	91.7

2.13 Perceived economic situation of household

Average	27	56.3	56.3
Below average	21	43.8	43.8

2.14 Can read and write

Yes	27	56.3	56.3
No	21	43.8	43.8

2.15 Education level

Never gone to school	22	45.8	45.8
Primary	22	45.8	45.8
Secondary	4	8.3	8.3

2.16 Earnings

Ksh3000 - 4000	3	6.3	75.0
Ksh4001 – 7600	1	2.1	25.0
Missing	44	91.7	

It was also found that out of 89 wives interviewed 9% were the sole decision-makers about the future of their children while 28.1% left the decisions to be made by their husbands. Only 21.3% of the wives consulted their husbands before making such

decisions while their husbands consulted 40.4% of the wives before he made the decision. On the other hand 91.7% of the unmarried women made these decisions alone.

Only 15.7% of the married women made decisions related to the acreage of cash crops while 61.8% left the husbands to make the decision. This supports the widely held view that in Africa women have little control over decisions about cash crops (Whitehead, 1990). Most women get married to men who have already established themselves and planted a cash crop. As for the unmarried women, 25% said they had made the decision while 33.3% said that other people had made the decision. Most of the women in this group either had been given land by their parents or they had bought the land by themselves.

Only 25% of the married women made decisions to do with the acreage of food crops alone without consulting their husbands or anybody else. On the other hand, 30.3% had to consult their husbands before making such decisions. It is also interesting to note that 21.3% of the husbands solely made decisions on the acreage of food crops while in 20.2% of the cases the husbands consulted their wives before deciding. It seems that although married women have more power in deciding on the acreage of food crops and cash crops, their power is nevertheless circumscribed in most cases by their husbands. For the unmarried women, 97.9% reported that they made this decision alone.

On the decisions on how much fertiliser or pesticide to use and when to use them for food crops, 28.1% of the married women made the decision alone and did not consult their husbands. Only 19.1% of these women let the husbands make the decision on their own, while 31.5% consulted their husbands before deciding. Their husbands, on this particular decision, consulted 21.3% of the wives. For the unmarried women, 97.9% said they made this decision alone.

On the decision on when to use fertiliser or pesticides on cash crop 22.5% of the wives made the decision only after consulting the husbands while in 21.3% of the cases, the husbands consulted their wives. 14.6% of the wives made the decision alone while 18.0% reported that the husbands made the decision alone. On the other hand, 58.3% of the unmarried women made this decision alone while 41.7% were reported missing since they did not have cash crops.

Our results show that an equal number of wives and husbands made decisions alone on when to direct labour (both hired and household labour) to cash crops. On the other

hand, 21.3% of the wives reported making the decision but only after consulting their husbands. The husbands only consulted with wives in 14.6% of the cases. For the unmarried women, 58.3% made the decisions alone.

Our results show that 28.1% of the wives decide on how much farm produce to sell and how much to leave for home-consumption. Also 25.8% of the wives reported making the decision but only after consulting with their husbands. So in almost two-thirds of the cases, wives appeared to be the principal decision-makers. For the unmarried women, only 2.1% let other people make the decision while 81.3% made the decision alone.

Tisdell, Roy and Regmi (2001) found that whereas the wife has control over the food that she grows for the family, she has little or no control over cash. Our results show that only 13.5% of the wives said that they are the ones who make decisions on household spending. In 23.6% of the cases husbands control the spending of cash in their family. There was also a very high level of consultation between husband and wife. The consultation was tilted more to the husband consulting the wife (38.2%) than the wife consulting the husband (23.6%). Thus, in the Kenyan case, husbands appear dominant in decisions about spending the family cash. For the unmarried women, 95.8% made this decision alone while 4.2% let other people decide for them. Only 14.6% of the wives kept the money after the sale of crops while 74.2% said that their husbands kept the money. This supports Tisdell, Roy and Ghose (2001) that the women could earn money but it may not help them in their well being as the men control it. We would expect that for those women who control the cash after sale of farm produce are in a better bargaining position in making household decisions than those who do not. For the unmarried women, 68.8% kept all the money after sale of cash crops. On further questioning of the wives about who actually kept the money after sale of farm produce, 43.8% said that the husband banked it in his account while 29.2% said that the husband banked it in their joint account. This shows that even when the wives say that they keep the money, they may not be able to keep track of what happens to their money, as the husband is the one in control of such accounts. This can be attributed to the women's lack of education and lack of knowledge of banking procedures.

Bargaining theories would suggest that if a wife has greater relative threat or bargaining power in the household, she is likely to be involved in more major decision-making than one who has little or no bargaining power. But as Tisdell *et al.*

(2000) point out, it is difficult to measure bargaining or threat power in a family situation. However, we can hypothesise that certain qualities or variables can be used as indicators of a woman's bargaining power. We shall consider the following influences of a woman's bargaining power: age, education level, wife's employment, perceived economic status, whether the couple is staying together and threat of divorce.

Older women are hypothesised to be more powerful than younger women. This is in agreement with (Blood and Wolfe, 1960) and (Conklin, 1979). For easy analysis, we re-coded the age variable such that those wives whose ages fell between 15-45 years were classified as young (75.3%) while the 46-80 years were classified as old (24.7%). For the unmarried women, 25% were classified as young while 75% were classified as old.

Education level of the wife is believed to be positively related to a woman's participation in decision-making since a highly educated woman is considered to be more aggressive and aware of her rights and therefore more participatory in decision-making (Kim and Kim, 1981) and Conklin (1979).

It was found that 10.1% of the wives had never gone to school while 65.1% had only achieved primary school education. On the other hand, 45.8% of the women had not gone to school and an equal number had only achieved primary school. Only 8.3% of the women had gone to secondary school.

The majority (89.9%) said they could read and write but 10.1% were illiterate. For the unmarried ones only 56.3% could read and write while 43.8% were illiterate.

Wife's employment outside of the household is often believed to make her more powerful in decision-making (Conklin, 1979; Blood and Wolfe, 1960). Engle (1990) says that if women are given income-earning opportunities outside the home, they may develop greater self-confidence and esteem which in turn may increase their ability and willingness to influence allocation decisions. The degree of participation in the workforce is included as a positive term in the estimation of the Gender Development Index (GDI). Nevertheless Tisdell, Roy and Ghose (2001) raise doubts about how well rates of females in the workforce reflect their empowerment within the family. It is possible for females earning cash in some societies to have no control over that cash in the family and to be little involved in family decisions. This is because although a man may be very proud of his wife's abilities to hold a responsible job outside the home, he may at the same time resent her interference in decision-

making at home because he may perceive this as a threat to family stability. Out of a sample of 89 married women, only 7.9% were employed outside the household while for the unmarried ones, only 8.3% were employed.

For those women who worked outside the household the mean wage was only Ksh.4157 per month which is equivalent to US\$52 per month using Kshs80 = 1 US\$ as the exchange rate that was prevailing when the data were collected. This shows that they held low paying jobs. On the other hand the unmarried seemed to be earning slightly more than the married women as their mean wage was Ksh.4525 per month which is equivalent to US\$57 per month.

Among the Kikuyu, the higher the socio-economic status of a man, the more dictatorial he usually is and the more his chances of marrying a second wife. This can instil fear in his wife and make her less aggressive. Only 2.2% of the wives interviewed considered their economic status as above average. The majority of the wives (71.9%) considered their economic status as average. On the other hand 56.3% of the unmarried women classified themselves as average while 43.8% classified themselves as below average.

We hypothesise that if the couple is staying together, the woman has less decision-making power than if the couple is separated, for example, due to migration or other reasons. This is because the wife is not answerable to the husband on a daily basis as it would be if they were staying together.

Probability of divorce is a threat to the husband since in Kenya as mentioned earlier, the husband pays dowry (cash) to the wife's parents. If he finds that the wife is very aggressive and threatens divorce, he can either remarry or divorce her. Only 13% of the wives said that they would initiate divorce. We tested whether there was any relationship between the empowerment variables and decision-making.

5. CHI-SQUARE ANALYSIS

We might expect, as the literature suggests, that age, education, and employment outside the household and threat of divorce provide a woman with a great store of skills, experience, and knowledge or bargaining power, all of which enhance her ability to participate in decisions and to counteract her husbands power to forbid. These attributes or resources give a woman more bargaining power. The perceived economic status of a household is believed to be such in Kenya that the higher it is,

the lower the social economic status of the woman and vice versa, the reason being that a higher social economic status makes the man more powerful and dictatorial.

Using the Chi-square, we tested for the relationship between the socio-economic indicators of the status of women and decision-making. (**Table 3**). However, we should note that although the Chi-square checks whether there is a relationship between two variables, it does not show how one variable varies as a result of a change in the other and the direction of variation. We use the correlation matrix to show the direction of variation.

Table 3: Chi-square analysis of relationship between socio-economic indicators of the status of wives and decision-making, Nyeri sample, Kenya 2001.

DV IV	Uncultivated land	Future of children	Cash crop (cc)	Food crops (fc)	Fertiliser/ pesticide (cc)	Fertiliser/ pesticide (fc)	Labor (cc)	Sell/ consume	House hold/ spending	Control of cash
Age	Not significant	Significant*	Not significant	Not significant	Not significant	Not significant	Not significant	Not significant	Not significant	Not significant
Education	Not significant	Not significant	Not significant	Not significant	Not significant	Not significant	Not significant	Not significant	Not significant	Not significant
Economic Situation of household	Not significant	Not significant	Not significant	Not significant	Not significant	Not significant	Not significant	Not significant	Not significant	Not significant
Employed outside the household	Not significant	Not significant	Significant*	Not significant	Not significant	Not significant	Not significant	Not significant	Not significant	Not significant
Staying together with husband	Significant***	Significant***	Significant**	Significant***	Significant** *	Significant** *	Significant***	Significant***	Significant***	Significant** *
Can ask for a divorce	Significant**	Not significant	Not significant	Not significant	Not significant	Not significant	Not significant	Not significant	Significant*	Not significant

* significant at 10% level.

** significant at the 5% level.

*** significant at the 1% level.

IV = Independent Variable

DV = Dependent Variable

The results suggest that there is no statistically significant relationship between age and household decision-making except for the decision on the future of children, which is significant at the 10% level and had a positive correlation coefficient. This negates our earlier hypothesis that older wives are given more leeway in decision-making than younger wives. However, for the unmarried women, age was significant in most of the cases except for the decision on uncultivated land, on acreage of food crops and on decision on when to use fertiliser and pesticides on food crops. **(Table 4)**. On decision on acreage of cash crops, age was significant at the 5% level and significant at the 1% level for decisions on when to use fertiliser and pesticides on cash crops, decision on how much to sell and how much to consume at home, when to direct labour to cash crops and on control of cash.

Table 4: Chi-square analysis of relationship between socio-economic indicators of the status of sample of unmarried women and decision-making, Nyeri district, Kenya.

DV	►	Uncultivated land	Cash crop (cc)	Food crops (fc)	Fertiliser/pesticide (cc)	Fertiliser/pesticide (fc)	Sell/consume	Labor (cc)	Control of cash
IV	▼								
Age		Not significant	Significant**	Not significant	Significant***	Not significant	Significant***	Significant***	Significant***
Education		Significant***	Not significant	Not significant	Not significant	Not significant	Significant*	Not significant	Significant**
Economic Situation of household		Not significant	Significant*	Not significant	Significant*	Not significant	Not significant	Significant*	Not significant
Employed outside the household		Not significant	Significant**	Not significant	Significant	Not significant	Significant***	Significant**	Significant***

NB.

* significant at 10% level.

** significant at the 5% level.

*** significant at the 1% level.

IV = Independent Variable

DV = Dependent Variable

However, with respect to education, there was no relationship between education and any of the dependent variables for the married women. It therefore implies that in rural and agricultural households in Nyeri district, education of the wives does not seem to play any significant empowerment role. This goes against the popularly accepted view that the higher the education of a woman, the more she is involved in household decision-making and the more empowered she is. It seems education does not significantly empower women within their own households. There is in particular no significant relationship between this variable and household decision-making expenditure or even control of cash.

On the other hand for the unmarried women, education was significant in three of the decisions and insignificant in the others. For example, it was significant in the decision on uncultivated land (1% level), decision on how much to sell and how much to consume at home (10% level), and in control of cash (5% level).

If we take the perceived economic status of the household as a proxy for the status of the husband for the married women, we can consider whether the higher the economic status of the husband, the more dominating and dictatorial he becomes. However it was found that in Nyeri district, the perceived economic status of the household did not significantly empower the wives. For the unmarried women it was significant in decisions about the acreage of cash crops, when to apply fertiliser and pesticides to cash crops and on decisions on when to direct labour to cash crops but only at the 10% level of significance.

The results also suggest that employment of wives outside the household does not particularly empower them in household decision-making. There was no significant relationship between this variable and the dependent variables except for decision on acreage of cash crop, which was only significant at the 10% level and with a positive correlation coefficient (**Table 5**). Thus the relationship between this variable and decision-making is mixed. It was also mixed for the unmarried women where in three decisions, i.e. decision on acreage of cash crops and decision on when to apply fertiliser and pesticides on cash crops and when to direct labour to cash crops, it was significant at the 5% level. It was also significant on decisions on how much to sell and how much to consume at home and control of cash, where it was significant at the 1% level. However, in the first two cases, the correlation coefficients were negative. Tisdell, Roy and Regmi, (2001) found that women working for income in the fields of

others were not empowered to any considerable extent in their family. Here we also conclude that for this Kenyan case employment outside the household for women does not empower them to any considerable degree within their own families. Safilios-Rothschild, (1969) also reported that the wife's working status did not influence the decision-making pattern. Kim and Kim (1981) also found this pattern in Korea.

Table 5: Correlation matrix for the variables used in probit analysis for the sample of wives in Nyeri district, Kenya.

DV IV	Uncultivated land	Future of children	Cash crop (cc)	Food crops (fc)	Fertiliser/ pesticide (cc)	Fertiliser/ pesticide (fc)	Labor (cc)	Sell/ consume	House hold/ spending	Control of cash
Age	0.018	0.002	0.047	0.058	0.210	0.210	0.041	0.012	0.035	0.011
Education	0.168	0.871	0.601	0.199	-0.067	-0.067	0.135	0.031	0.138	0.001
Economic Situation of household	0.038	0.084	-0.042	-0.039	-0.044	-0.044	0.206	0.034	0.213	0.103
Employed outside the household	-0.034	0.103	0.038	0.045	-0.023	-0.023	0.031	-0.069	0.024	0.013
Staying together with husband	-0.857	-0.048	0.007	-0.901	-0.180	-0.180	-0.617	-0.051	-0.261	0.073
Can ask for a divorce	0.003	0.063	0.016	0.22	-0.016	-0.016	-0.022	-0.025	0.015	-0.050

As to whether the couple staying together significantly reduced a woman's capacity to participate in decision-making, it was found that this was true. Women who stay alone or whose husbands have migrated are significantly more empowered than those who stay with their spouses. This is because a woman staying with her husband will fear making unilateral decisions without consulting him unlike when he is away or absent all together. The relationship between this variable and all decisions was significant at the 1% level except for the decision on acreage of cash crops where there was significance at the 5% level. The correlation coefficients between this variable and the dependent variables were all positive.

It might be expected that the threat of divorce from the wife might give her more power to make decisions in the household. However, our findings were such that the threat of divorce does not significantly empower the woman in making decisions, as there was no statistical significance between this variable and most decisions except for decision on uncultivated land and on household spending.

The relationship between the threat of divorce and decisions on uncultivated land was significant at the 5% level while the relationship between threat of divorce and decisions on household spending was significant at the 10% level and had positive correlation coefficients in both cases.

6. PROBIT ANALYSIS

Ordered probit regressions were run to test determinants of the involvement of women in making household decisions. We only used the married female responses to the survey questions on who made the household decisions. The household decisions were those on uncultivated land, future of the children, acreage of both cash and food crops, fertiliser and pesticides on both cash and food crops, labour on cash crops, household spending and how much to sell and consume at home. The probit analysis results were also mixed. (**Table 6 – see Appendix**). The results indicate that as the age of the woman rises, she is more likely to make decisions on the use of uncultivated land. This relationship was significant at the 5% level. This level of significance also remained in the regression involving the decisions on the acreage of cash crops. As hypothesised earlier, when the husband stays at home, the wife is less likely to make decisions on the use of uncultivated land. This observation was only significant at the 10% level. However, this relationship was significant at the 1% level

in the regression on decisions about the acreage of cash crops. Another interesting result was that the employment variable of the woman took a negative sign in relation to decisions about how much of farm produce to sell or consume at home and it was also not significant. Education, divorce, perceived economic situation of the household had positive relationships had positive relationships to the wives' control of cash but none of these were statistically significant.

On decisions about the acreage of cash crops, all the variables, except the perceived economic situation of the household and the staying together of the husband and wife (both had negative signs), had positive signs but none was statistically significant except for the age variable.

When we regressed the decision on the children's future against the explanatory variables, the threat of divorce and the staying together of the couple took negative signs while all the other variables had positive signs. This shows that the more a woman threatens her husband with divorce, the less likely she is to make decisions on the future of her children. The age variable was also significant at the 5% level.

The same trend was seen in the regression on the decision on when to direct labour to cash crops and about the decision on how much to sell and how much of crops to consume at home, except that the employment variable took a negative sign implying that the more a woman works away from home, the less likely she is to make decisions on how much to sell and how much to consume at home.

On the decision about when to apply fertiliser and pesticides on food crops, the education and the staying together of the couple variables took negative signs. This implies that the more educated a woman is the less likely she is to make this decision. While this result was not significant the staying together variable was significant at the 1% level. However, on the decision about when to apply fertiliser and pesticides on cash crops all the explanatory variables took negative signs except the control of cash variable and it was also significant at the 1% level.

As for the decision about household spending, the age variable was very significant at the 1% level while the staying together of the couple was also significant at the 5% level. All the variables, except the staying together of the couple variable, had positive signs but they were not significant. Lastly, on the decision on the acreage of cash crops, the control of cash variable was the only variable that was significant at the 5% level. All the variables, except the perceived economic situation of the household variable, had positive signs. This implies that the higher the perceived economic

situation of the household, the less likely the woman is to make decisions on the acreage of cash crops.

These results imply that age is an important determinant in household decision-making as it has emerged as the most significant explanatory variable in the analysis. The other important determinant is whether the couple stays together and it has emerged that the wife is less likely to make household decisions when the husband is living with her. All the other explanatory variables, especially the bargaining variables like threat of divorce, employment outside the household and education, have shown mixed results even taking negative signs at times. This implies that it is only the older women and those who live away from their husbands who are empowered. It is found that those wives who live with their husbands, are young, educated, employed outside the household and threaten with divorce, are less likely to make household decisions.

7. MAIN FINDINGS

Although frequency tables show that women in Nyeri district participate to some extent in decision-making, they are not empowered. As the literature points out, women in Africa have increasingly taken over the roles previously performed by men (Kennedy and Oniang'o, 1990). They have become the subsistence food providers as well as cash crop farmers. However, men still make the major decisions and maintain control over the proceeds from sale of cash crops. Nevertheless there are also very high levels of consultation meaning that the power of the men may be declining. The results suggest that African men are not as dictatorial as they have been portrayed in some feminist literature. Nevertheless from the tests of significance, it seems as if Nyeri wives are not empowered.

Our findings demonstrate that variables generally accepted and expected to empower women may apply to some regions in the world but not to others. In our study, empowerment of women seems to be significant for older women, the unmarried ones, and those wives whose husbands are away from home. However, even when variables do help empower wives, the empowerment is limited. We would assume that this significance is because custom dictates that older women's opinions should be respected. It also seems that married women and those who stay with their husbands are expected to conform to traditional customs while it looks as if those customs are no longer in operation for the unmarried women.

Education, threat of divorce, perceived economic status of the household and employment outside the household were expected to empower women and allow them to participate more in family decision-making since their bargaining power would be increased according to some bargaining theories. However, this is not supported by the results of the survey in Nyeri district the results of which support the findings of Kim and Kim (1981); Tisdell, Roy and Regmi (2001) and Safilios-Rothschild (1969). These empowerment variables together with the variable on whether the woman lived together with her husband were significant in only a few cases. It therefore seems that in Nyeri district, customary conventions play a major role in determining the socio-economic status of women. Our results support the findings of Conklin (1979).

It is also important to note that the relationship between all the empowerment variables and decisions about the future of children was not significant in all the cases using the Chi-square while in the probit analysis, only the age variable was significant. This result supports Blood and Wolfe (1960). Customary conventions do not seem to be weakened by the education of the woman, her employment outside the household or her threat of divorce, her control of cash or even the perceived economic situation of the household. The threat of divorce is ineffective in explaining the socio-economic status of women in our study. Given the cultural context, the threat of divorce may just reinforce the lower status of the woman as there is doubt as to whether those women who mention that they would divorce their husbands could actually carry out their threats knowing exactly what awaits them after the divorce. Our results support those of Tisdell, Roy and Regmi (2001) for India.

Education of the wives does not empower them and neither does their employment. We can therefore conclude, since Nyeri district is typical of most of Kenya, that bargaining models have little explanatory power in Kenya as customary and cultural conventions seem to have more power in determining women's socio-economic status in the household. This may be because women (especially the married ones) have few bargaining possibilities, or do not realise their bargaining possibilities even when they do exist or are so surrounded by customary-based social pressures that they are unable to exercise their bargaining power because of the high social costs of doing so (cf. Tisdell, Roy and Regmi, 2001).

8. SOME IMPLICATIONS AND CONCLUDING COMMENTS

On the basis of our analysis, we have seen that although women participate to some extent in making household decisions, they are still not empowered. While women in Africa have taken over many of the roles that men used to perform men still mostly make the major household decisions and control the purse strings. The conventional empowerment variables do not seem to apply to the women in our sample, and their status is largely determined by the social and customary conventions that bind them.

Studies that have been done in mainly developed societies show that women who are educated, employed outside the household, can threaten with divorce and control cash are highly empowered. This is not the situation in Kenya. Women were found to be generally less educated than the men, and even those who were employed outside the household, usually have to get permission first from their husbands. We have even found evidence of negative influence of the education or employment variables of wives on their responsibilities for household decision-making. Threat of divorce also had a negative influence in some cases and it was ineffective in explaining the status of the women in our sample. Maybe those women who said that they can ask for a divorce did not really mean it and they actually cannot ask for it. Educated and working wives may not want to be aggressive, as they would not like their education or employment to be seen as an obstacle to the institution of marriage. This is due to the socialisation process that women undergo which portrays them both as wives and mothers. Many women do not exercise their rights because of psychological, social and cultural obstacles. From childhood, they are given a set of values by their mothers that narrows their horizons and tend to make them stick to the traditional roles they are expected to play. The whole socialisation process fits them for their predetermined role as wives and mothers. This means that bargaining models had little applicability in such a society in determining the status of women. There is therefore a need for greater sensitisation for married women and society at large to alter the social and cultural conventions that negatively affect women. Girls, from an early age need to be encouraged to strive on equal footing with the boys. They should be given examples of role models of those women who have succeeded in life through education and employment. Although this may take time, the process can be hastened by education both formal and informal. It is only through concerted efforts that the social, cultural and psychological obstacles to decision-making by women can be removed and hence, raise their socio-economic status.

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APPENDIX Table 6: Ordered probit results using responses of sample of wives, Nyeri District, Kenya

6.1 Dependent Variable: Decision on Uncultivated Land

Variable	Coefficient	Standard Error	ρ Values
Education	0.5422	1.2973	0.6760
Control of Cash	1.3474	0.8452	0.1109
Staying together	-2.3001	1.3028	0.0774*
Perceived econsihh	0.3855	0.8748	0.6594
Employed	-0.6097	1.2587	0.6281
Threat of Divorce	1.2345	1.2668	0.3298
Age	0.0661	0.0039	0.0326**
Constant	-2.7702	1.9151	0.1480

Log likelihood = -44.07

Chi-square = 49.39

Degrees of freedom = 14

Number of cases = 76

6.2 Dependent Variable: Decision on Acreage of Food Crops

Variable	Coefficient	Standard Error	ρ Values
Education	0.8285	0.9957	0.4054
Control of Cash	0.4015	0.8563	0.6391
Staying together	-2.6860	0.9636	0.0053***
Perceived econsihh	-0.0795	0.8466	0.9252
Employed	0.6017	1.2172	0.6211
Threat of Divorce	0.3770	1.1016	0.7322
Age	0.0651	0.0319	0.0419*
Constant	-1.8009	1.4754	0.2222

Log likelihood = -35.99

Chi-square = 46.33

Degrees of freedom = 14

Number of cases = 81

6.3 Decisions on Children's Future

Variable	Coefficient	Standard Error	ρ Values
Education	3.7762	4579743.2	1.0000
Control of Cash	2.7982	1.5363	0.0685*
Staying together	-86.99	4450877.1	1.0000
Perceived econsihh	1.4729	1.6661	0.3767
Employed	60.0706	4433095.4	1.0000
Threat of Divorce	-25.4524	2733115.9	1.0000
Age	0.1345	0.0641	0.0358**
Constant	-11.0826	457974.2	1.0000

Log likelihood = -7.76

Chi-square = 44.07

Degrees of freedom = 7

Number of cases = 32

6.4 Decisions on When to Direct Labour to Cash Crops

Variable	Coefficient	Standard Error	p Values
Education	0.5389	0.5107	0.2913
Control of Cash	1.5584	0.7063	0.0274**
Staying together	-31.4005	171891.5	1.0000
Perceived econsihh	0.1715	0.6975	0.8058
Employed	0.3102	1.2177	0.7989
Threat of Divorce	-1.8728	1.2990	0.1494
Age	0.0703	0.0297	0.0179**
Constant	-5.2961	2.6042	0.0420

Log likelihood = -73.05

Chi-square = 49.92

Degrees of freedom = 14

Number of cases = 81

6.5 Decisions on how much to Sell and how much to Consume at Home

Variable	Coefficient	Standard Error	p Values
Education	0.0978	0.5072	0.8471
Control of Cash	2.2387	0.8014	0.0052***
Staying together	-1.0039	0.9402	0.2856
Perceived econsihh	-0.2728	0.8044	0.5367
Employed	-0.2728	1.1575	0.8137
Threat of Divorce	-0.9464	1.0494	0.3672
Age	0.0731	0.0336	0.0294**
Constant	-3.4606	2.4925	0.1650

Log likelihood = -40.55

Chi-square = 57.46

Degrees of freedom = 14

Number of cases = 80

6.6 Decisions on Fertiliser and Pesticides on Food Crops

Variable	Coefficient	Standard Error	p Values
Education	-0.3040	0.6573	0.6437
Control of Cash	0.8967	0.9595	0.3500
Staying together	-3.6806	1.2086	0.0023***
Perceived econsihh	0.6792	0.9782	0.4875
Employed	0.6423	1.3708	0.6394
Threat of Divorce	0.3424	1.1417	0.7643
Age	0.0656	0.0401	0.1022
Constant	-0.6105	2.9467	0.8359

Log likelihood = -34.59

Chi-square = 54.53

Degrees of freedom = 14

Number of cases = 82

6.7 Decisions on Fertiliser and Pesticides on Cash Crops

Variable	Coefficient	Standard Error	p Values
Education	-0.0727	0.4751	0.8784
Control of Cash	2.2150	0.6975	0.0015***
Staying together	-1.2463	1.2841	0.3318
Perceived econsihh	-0.8267	0.7374	0.2623
Employed	-0.6552	1.3778	0.6344
Threat of Divorce	-0.7383	1.3044	0.5740
Age	0.0347	0.0277	0.2100
Constant	-2.4821	2.3302	0.2868

Log likelihood = -44.20

Chi-square = 52.59

Degrees of freedom = 14

Number of cases = 81

6.8 Decisions on Household Spending

Variable	Coefficient	Standard Error	p Values
Education	0.1926	0.6218	0.7567
Control of Cash	1.8594	1.0128	0.0664*
Staying together	-3.6118	1.6350	0.0272**
Perceived econsihh	0.6173	0.9529	0.5171
Employed	1.1585	1.3273	0.3827
Threat of Divorce	0.6581	1.1310	0.5606
Age	0.1331	0.0498	0.0076***
Constant	-5.9054	3.2636	0.0704

Log likelihood = -36.88

Chi-square = 67.79

Degrees of freedom = 14

Number of cases = 79

6.9 Decisions on Acreage of Cash Crop

Variable	Coefficient	Standard Error	p Values
Education	1.2283	1.2729	0.3346
Control of Cash	1.8328	0.8017	0.0222**
Staying together	1.2360	1.0727	0.2492
Perceived econsihh	-0.4217	0.6486	0.5156
Employed	1.6890	1.0689	0.1141
Threat of Divorce	0.7755	1.1152	0.4868
Age	0.0243	0.0209	0.2446
Constant	-4.8083	1.8572	0.0096

Log likelihood = -38.68

Chi-square = 13.74

Degrees of freedom = 7

Number of cases = 82

NB

Econsihh = Perceived Economic Situation of Household

* significant at 10% level

** Significant at 5% level

*** Significant at 1% level

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