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Full Length Research Paper

Land ownership security in Malawi

Greenwell Matchaya

Leeds University Business School, Leeds, LS2 9JT, UK. Leeds University Business School, Leeds, LS2 9JT, UK.
E-mail: greenwellmatchaya@yahoo.com. Tel: +44(0)7810202942.

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This study examines factors that determine land ownership security among households in the rural areas (customary tenure sector) in Malawi. A framework for understanding land ownership security in the customary sector is proposed and using empirical data from different parts of Malawi, logistic regression analysis shows that the developed framework helps to explain land ownership security in practice. Though land ownership insecurity is almost negligible in the studied areas, this study has found that households that are categorized by the framework as non- indigenous (the weakest category of the four) are associated with a higher likelihood of feeling land tenure insecurity than the other categories (indigenous, weakly indigenous, absolutely indigenous). The modes of land acquisition, years that one resides in a community and gender of the household head also do determine land tenure security and women are found to be relatively land tenure secure than men. This study argues that outcomes from studies seeking to examine the link between land tenure security and land use efficiency in Malawi may become clearer if the developed framework or its variants are used to model the influence of customary land access systems on land ownership security because titling/no titling dummy variables do not say much about land ownership security in areas where customary systems dominate. Since women have a higher probability of feeling land tenure secure in matrilineal systems, development projects should endeavour to empower them as well so that they may equally participate in household level decision making as this would help them effectively use their land even in cases where their husbands feel land tenure insecure and hence withdraw their expertise from production. Again, the traditional system of land transfer is found to be resilient and this leads to questions about whether land titling could be an urgent need for people in the studied areas.

Key words: Customary systems, Land tenure, matrilineal systems, Malawi, land ownership security.

INTRODUCTION

Land ownership security has been marked as one of the factors that could explain the poor agricultural performance in developing countries (Dorner, 1964; Feder and Onchon, 1987). In this study land tenure refers to the manner in which land is held or transferred and land tenure (ownership) security refers to whether the land holder perceives that his/her land could be expropriated or not (see Godoy et al., 1998).

Customary land transfer processes have been of interest to several researchers in several societies in Africa (Besley, 1995; Hayes et al., 1997; Place and Otsuka, 2001). Some studies have argued that moving across countries in Africa, one does not expect to witness a wholesale unvarying pattern, but the unifying dimension in most of the Sub Saharan Africa (SSA) is that cultural specific norms play an important role (Hayes et al., 1997).

The writings of Dorner (1964) do suggest that these traditional land transfer processes are not very dynamic and might not do their job well in the midst of growing population pressure and changing factor prices. According to Dorner, in the absence of clearly defined land ownership, a society where land pressure is intense would be characterized by land ownership conflicts because renting out land may become risky as some people would not easily return their rented in land. Some people would stage conflicts in a bid to get access to land in the absence of market-based solutions.

Place and Otsuka (2001) concluded that the matrilineal consistent way of land transfer negatively affected the rate of technology adoption in Malawi due to the risks associated with it, partially backing the claim that somehow some inheritance systems are not pro-efficiency.

In Malawi, three major categories for controlling land

can be distinguished namely customary land, public land, and private land. The customary system of land tenure has the traditional concept of considering land in a village as belonging to the community although the individual in the community has the right to cultivate it and sometimes uses the land as though he was the owner (Nothale, 1982). Malawi has operated without a comprehensive policy on land matters for a long time. The present land holding system is a product of colonial history and settlement patterns, agricultural policies of the one- party era, and recent demographic trends. All these have contributed to the problems that currently affect land tenure and utilisation (MLPPS, 2002). This lack of explicit private ownership has motivated some researchers to argue that it is insecure.

Furthermore, public land refers to land occupied, used, or acquired by the Government or any other land, which is neither customary nor private. Private land refers to land owned, held, used, or occupied under a freehold title, a leasehold title, or a certificate of claim, which is registered as private land. Customary land is by far the most common form of tenure in Malawi and accounts for 69 per cent of the country's total land and this is where most of the smallholder farmers are located (Government of Malawi, 2001).

The inheritance of customary land in Malawi is not catered for under statutory law but follows the customary law. Land is transferred predominantly through inheritance from relatives and marriage is one of the means to land access (Kishindo, 2004). Two customary systems of inheritance, the matrilineal and the patrilineal systems can be distinguished in Malawi. Under a matrilineal system, chieftaincy is handed down through the female line and so is land. Under this system, women's rights to customary land tend to be primary. Under the matrilineal system of marriage, a man's rightful heirs to his land are his sister's children (Pachai, 1978). This system characterises land transfers within the central and southern regions (Ng'ong'ola, 1982; Pachai, 1978). Under the patrilineal system, land is transferred from fathers to sons. It is in a way a mirror image of the matrilineal one where the powerful figure is the man other than the woman.

Studies that endeavour to establish links between land tenure and agricultural performance must initially establish that the systems of land tenure under study are problematic or they must assume ownership insecurity to finally attribute any inefficiency in agricultural production to land tenure. Difficulties in land tenure and efficiency studies therefore partly emanate from the fact that modeling context-specific land tenure systems is nontrivial. This difficulty betrays robustness of results and policy briefs that ensue from land tenure studies (Roth et al., 1989). In some situations land tenure regimes may easily be modelled but where customary rules drive land tenure processes, an understanding of context specific traditions is paramount.

Indeed in settings where it has been thought that customary systems were ignorable in farming decisions (Feder and Onchon, 1987), security on the decision maker's side has been comprehended in terms of the absence or presence of a title. The argument is that all farms which operate without a title should be expected to be less efficient because the farm manager or the household head feels insecure. By this definition the implication is that all untitled fields in Africa are insecure and hence the customary systems confer insecurity.

However, it is trivial to notice that many societies in Africa have passed on their land through systems that do not have the formal land title and their systems have survived a test of time. It seems therefore that to restrict oneself to the debate on presence or absence of a title might not be very helpful in the African context. As many have argued, in Africa it is probably the customary setting which influences a great deal of farmers' decisions (Broegaard, 2005; Roth and Unruh, 1994). The fact that these systems have survived a test of time points to the resilience and probably dynamism inherent in them and it may be premature to call all of them inefficient. Indeed, despite a century of purposeful penetration by non customary tenure ideology and legal provision, unregistered, customary land tenure is still by far the main form of tenure in Eastern and Southern Africa (Alden Wily, 2000). So, what would probably be helpful would be to devise ways of testing specific land transfer systems to establish whether and how they threaten farm managers (how they convey security or lack thereof) and then proceed with any arguments about whether the implied security/insecurity is transferred to production, investment or conservation decisions.

More importantly also, it is quite risky to alter the basic principles of tenure in the absence of a careful examination of the existing customary systems that govern land transfer (Uchendu, 1969). This again implies that the absence of an understanding of the sources of insecurity in customary systems is a serious problem for corrective policy. To successfully alter tenure systems, or to coin policies that directly help those badly affected by the customary land transfer systems, policy makers need to have sufficient knowledge of the systems otherwise such changes would have far reaching consequences (Parsons, 1971). While land tenure reforms in other countries might have been associated with low costs, early writings on land reform issues in Malawi (Ng'ong'ola, 1982; Pachai, 1973) categorically suggest that reforms that came soon after colonialism proved too expensive without any tangible gains at all as they were attempted without full understanding of the dynamics of the existing systems.

Furthermore, modelling land tenure systems incorrectly in productivity and investment studies for example may yield incorrect conclusions owing to the statistical bias and inconsistency that comes with poor variable definition.

In many of the studies mentioned land ownership security has been defined in terms of whether a land holder has a title to it or not (Feder and Onchan, 1987) . In this regard, all land that is registered and has a title is considered secure land while that which does not have a title is insecure. This definition however assumes that a land title is analogous to security and studies that embrace it, quite often ignore the fact that context specific customary laws and institutions are also important in determining land ownership security. Indeed, land tenure is described in terms of bundles of rights that a holder has towards the piece of land (Bruce, 1993) and such rights derive from land statutory and customary law, institutions of marriage as well as inheritance (Maxwell and Wiebe, 1998). The breadth, horizon and assuredness of the rights together comprise an important index that could be of importance in decision making. The title definition assumes that, even in rural areas of the developing countries, farms with titles automatically possess bundles of rights that are broad, long-term and more assured. This may not necessarily be the case in contexts where traditional rules of land holding may be stronger than a mere possession of a title.

Whether land ownership security is defined as mere possession of a land registration certificate or not (as in Feder and Ochan, 1987), or whether it is defined as the extent to which a household's rights are assured, broad and long- term (Bruce, 1993; Maxwell and Wiebe, 1999), empirical studies have found it useful to obtain an indicator variable to proxy the index (latent variable) whose ingredients are the broadness, duration and assuredness of an individual's rights towards pieces of land. In so doing studies typically obtain people's perception of how secure their land is. In such cases household heads have generally been asked to state whether they felt that one or more of their pieces of land would potentially be expropriated by another person (Holden and Yohannes, 2002; Godoy et al., 1998). This measure of perception is subjective and suffers from the same weaknesses inherent in questions about people's opinions on issues, however if the questioning is well executed, such an indicator variable could be more useful in explaining the actual land ownership security than the incidence of land registration or titling.

Indeed, in many societies in the developing world, especially in rural settings, registration of a piece of land may not necessarily confer more security, rather, the context specific traditions may actually help predict whether a household would feel land tenure insecure or not.

Despite the importance of land tenure security on investment, land markets and productivity of agriculture, there are no known major studies that have explicitly examined factors that may explain land tenure security in the Sub Saharan Africa and in the matrilineal systems of Malawi in particular. For instance, while Feder and Onchan (1987) and Place and Otsuka (2001) and many other have tackled the effects of land tenure security on production, the question of security determinants has been overlooked. Furthermore, the approach adopted in most studies has been that of considering untitled land as insecure and titled land as secure. The following section discusses the manner in which land tenure security may be viewed in the societies dominated by matrilineal culture in Malawi.

The objective of this study is therefore to examine the factors that determine land ownership security in Malawi using a framework that is also developed herein. Furthermore, this study purports to document the recent dominant modes of land acquisition. In so doing the present research is geared toward contributing to the current debate on land tenure by introducing the framework for understanding land ownership security in Malawi. This study is also important as there are no similar studies that the authors know of which have sought to examine the factors influencing land tenure security in the Southern African Development Community (SADC) and Malawi. A good understanding of context specific determinants of land ownership security is important in ending such insecurity, as well as in further analyses of land ownership security and other factors such as credit acquisition, investments and land productivity among others.

The rest of this paper is organised as follows: the next section presents the methodology where the framework for understanding land ownership security is developed and the data collection procedures and the empirical model are discussed, while results and discussion are reported immediately after the next section, and the paper closes with a section on conclusions and implications.

MATERIALS AND METHODS

Land transfer in matrilineal societies of Malawi

The nature of actual land transactions in Malawi is complex and such complexity implies that carelessly simplified views of land tenure systems and inheritance rules based on a matrilineal/patrilineal dichotomy alone may be insufficient and those pressing sole emphasis on land titling maybe misleading. This section purports to come up with a matrilineal system consistent categorization of household heads that could also be adapted to explain insecure households even in patrilineal settings. The categories should be viewed as lying on a security continuum and some households may be associated with security or insecurity conditional on where they fall on the continuum.

As a point of departure, notice that a cross section of men and women in a village could yield children (men and women) who could be classified generally as (*apao*) meaning indigenous or (*obwera*) meaning non-indigenous in the Malawian traditional societies. Whether the progeny of the first generation of the said men and women would be indigenous or non-indigenous in their village of residence depends on the statuses of their immediate ancestors (parents). Indigenous heads refer to members of a local kinship and non-indigenous points to those who are partial women in a village could yield children (men and women) who could be classified generally as (*apao*) meaning indigenous or (*obwera*) meaning non-indigenous in the Malawian traditional societies.

Whether the progeny of the first generation of the said men and

Table 1. Determination of land tenure security categories in matrilineal systems.

	Father		
Mother		*Apao (α_f)*	*Obwera(α_o)*
	Apao(α_m)	*Apao*apao(1)*	*Apao*obwera(1)*
	Obwera(α_o)	*Obwera*apao(0<S<1)*	*Obwera*obwera(0)*

Where S is security and is between 0 and 1 where 1 is most secure and 0 most insecure.

Table 2. Land tenure security categories in symbols.

	Father		
Mother		*Apao (α_f)*	*Obwera(α_o)*
	Apao(α_m)	$\alpha_m \alpha_f$	$\alpha_m \alpha_o$
	Obwera(α_o)	$\alpha_o \alpha_f$	$\alpha_o \alpha_o$

women would be indigenous or non-indigenous in their village of residence depends on the statuses of their immediate ancestors (parents). Indigenous heads refer to members of a local kinship and non-indigenous points to those who are partial members of the core lineage. So, the final categorization of an individu depends on the categories of his parents and more importantly his or her mother. In turn his/her category will affect his/her children's category. These categories may impact on security through directly or indirectly through land access.

The question whether one is more indigenous or not is often known by individuals themselves as well as village elders. To the extent that priority of lineage or village land is given to indigenous individuals, categories should be correlated with security perception towards land. Subsequently, a household's tenure security status may depend on whether the household head is indigenous or not and whether most of their land is sourced from traditionally legitimate sources. The Table 1 above shows the evolution of the continuum on which every household head would exist as far as land ownership security is concerned.

The table above shows the categories of land ownership security that would unfold among children from any marriage in a matrilineal society in Malawi, and the table below presents the same information in symbols. Depending on whether the parents agreeing to bear children in a particular village are *apao (indigenous)* or *obwera (nonindigenous)*, they would give birth to children who automatically falls into any of the categories *apaoapao* meaning *absolutely indigenous apaoobwera* meaning *indigenous*, *obwer-aapao* meaning *weakly indigenous* or *obweraobwera* meaning *non indigenous*. Table 2 presents a symbolic presentation of Table 1

Where α_i represents *apao (indigenous parent)* or *obwera (non indigenous parent)* and these are in turn related to length, breadth or assurance of rights possessed by respective individuals. Matrilineal systems will dictate that a man born of a woman from a core lineage (lineage of indigenous individuals) should feel some safety towards land allotted to him but that comparatively such safety is less than that of a woman from a core lineage. Following the lettering in the table, then $\alpha_m > \alpha_f > \alpha_o$ and it follows that $\alpha_m \alpha_f > \alpha_m \alpha_o > \alpha_o \alpha_f > \alpha_o \alpha_o$ where $\alpha_i \alpha_j$ are the security categories of the progeny of the first generation.

Apaoapao ($\alpha_m \alpha_f$), hereafter referred to as *absolutely indigenous,* represents all household heads whose parents (both father and mother) are indigenous in their village of resident. Because both of their parents are indigenous in the village they are also fully indigenous in the village and they are eligible to inherit land. This definition can also be inferred from Customary Land Utilization Study (CLUS), (1998) and Nankumba and Machiku (1988). In this case, the *apao* are like 'owners' of the land.

Apaoobwera ($\alpha_m \alpha_o$), hereafter referred to as *indigenous*, represents household heads whose mothers are indigenous in the village but their fathers are non-indigenous. They can still inherit land according to matrilineal traditions and may be weaker than the *absolutely indigenous* group due to the fact that unlike *absolutely indigenous* groups, *indigenous* groups are fathered by non-indigenous men.

Obweraapao ($\alpha_o \alpha_f$) hereafter referred to as *weakly indigenous*, represents household heads whose mothers are non-indigenous in the village of resident but their fathers are. According to the traditions of matrilineal culture, much as these are born of indigenous fathers, since their mothers are non-indigenous, they cannot inherit land legitimately. Any land they inherit from their father can be up for challenge.

Obweraobwera ($\alpha_o \alpha_o$) hereafter referred to as *non indigenous*, represents household heads whose parents are non-indigenous in the village of resident. They cannot inherit land legitimately from this village. These are non-indigenous' people who may not enjoy much security of land holding. This variable therefore includes households that do not belong to the village lineage and are not supposed to inherit land from owners who are in this case the legitimate lineage.

The continuum developed in the preceding section relates to the definition of land ownership security implicit in Maxwell and Wiebe (1999), Bruce (1993) and Roth and Haase (1998) where security is related to the kind of rights (that is, their breadth), their duration, and their degree of assurance (that is,degree of enforcement). The breadth of rights refers to a different dimension, specifically rights of use, of transfer, and of exclusion, all of which contribute to define the bundle of rights attached to a specific unit of land that can be claimed by a given individual. Rights of use regulate the type of economic activities that can be undertaken and more generally are the basis on which the residual claimant to profits generated by the use of land is identified. In general, the more assured, the longer, the duration and the broader the rights to land, the greater are the incentives for investment.

In the context of the continuum presented in this paper, individuals falling under *absolutely indigenous* group possess rights with the most assurance, largest breadth and longest time horizon. On the other hand, those categorized as *indigenou*s are more secure than *weakly indigenous* groups while the *non indigenous*

groups comprise individuals whose rights towards pieces of land have shortest duration, are narrow and are the least assured. This then means that any correctly measured self-reported perception of land ownership security is likely to be influenced more positively by the *absolutely indigenous* status and negatively by the *non indigenous* status on the other extreme. In other words, the reported land ownership security perception depends on the perceived duration, assuredness and breadth of one's rights towards land.

Data analysis

To test the framework developed above, this study is based on data collected on 229 farm parcels from 103 farmers drawn from Traditional Authority (T/A) Chulu in Kasungu district, T/A Maliri of Lilongwe district and Nkula T/A in Machinga district. The data were collected and processed between August and November 2007 by the authors in collaboration with two other experts from the Agricultural Policy and Research Unit (APRU).

The data collection were preceded by focus group discussions and informal interviews with village level opinion leaders, officials from the Ministry of Agriculture and the Ministry of Lands and Physical Planning to enhance the authors' understanding of land tenure issues as understood by those interviewed. In-depth interviews were conducted on farmers selected to represent as wide a range of different land tenure and social statuses as possible (Broegaard, 2005; Ravnborg, 1999).

Multi-stage sampling was used to select the study units whereby the Kasungu district was purposively chosen because of its high agricultural potential and because it has an interesting presence of patrilineal land tenure culture in a few of its Traditional Authorities (T/A). Within the Kasungu district Sub-T/A Mphomwa of Chulu was also purposively chosen owing to its high patrilineal culture prevalence. A bottle was then spun at Sub-T/A Mphomwa and two villages (Chandiwira and Katota) were selected in the direction indicated by the bottleneck. A census of households in each village was obtained from village headmen secretaries and these formed the final sampling frame from which 30 households were selected at random (15 from each village).

The Lilongwe district was chosen because it is the only district in which land titling was attempted three decades ago and it is predominantly matrilineal. T/A Maliri was chosen at random and taking Mpingu Extension planning Area as reasonably at the centre of TA Maliri, a bottle was spun and two villages (Chingoli and Kasinja) were chosen in the direction of the bottleneck and one village (Hannock) in the opposite direction. Household population censuses were then obtained from chiefs and 45 households were randomly selected (15 from each village). A similar procedure was repeated in the Machinga district which was included in the sample because of its high population density and high cassava production potential in T/A Nkula. Two villages (Wadi and Joabe) were selected using the bottle spin method and after getting a census of households from chiefs a random sample of 30 households (16 in Wadi and 15 in Joabe) was drawn. The selected households were then interviewed using survey questionnaires by trained enumerators and the author. The data were then analyzed using STATA software (Gould et al., 2006).

Estimation issues

The dependent variable, perception of tenure security as is a self-reported indicator variable which represents some underlying variable which takes positive values when the indicator variable takes a value of 1 or 0 when the indicator variable is 0 as well. The perception of security variable may suffer from the same problems inherent in questions about people's perception. For example depending on how questions are posed there might be likelihood that individuals would frequently report insecurity under some anticipation that one would help them in one way or another. However, this variable is often used in literature (Godoy et al., 1998) and in the present case this problem may have been minimised because of the expertise boasted by the well-trained data enumerators.

Owing to the nature of the dependent variable this study optimized the following logit model:

$$\Pr_i(Y=1) = P = \frac{Exp(\beta_0 + \sum_{j=1}^{K} \beta_j X_j)}{1 + Exp(\beta_0 + \sum_{j=1}^{K} \beta_j X_j)}$$

Where X_i is independent regressors which include the constructed customary framework and betas are coefficients.

The study collected various types of data but in general concerned household level socioeconomic characteristics, sources of land, household level perception of land tenure security, crop and livestock production activities, on-farm tree planting and land markets. The following are the variables used in the analysis.

Table 3 describes the different variables that are used in the statistical and econometric work that follows;

Expected effects

Customary variables

Absolute indigenous, are by definition fully indigenous in the village of residence and it is hypothesized that they will be the most secure groups as they are very eligible to inherit land.

Indigenous represents household heads whose mothers are indigenous in the village but their fathers are non-indigenous. It is hypothesized that they will be the secure than the weakest group the *non indigenous*.

Weakly indigenous according to the traditions of matrilineal culture, much as these are born of indigenous fathers, since their mothers are non-indigenous, they cannot inherit land legitimately. It is hypothesized that there will be associated with some more security than *non indigenous.*

Non-indigenous*:* these are household heads whose parents are all non-indigenous in the village of resident. This is the counterfactual group and this group is insecure than the rest.

Since land is a constant resource, population pressure may make it very scarce. Indeed as the World Bank reported, the population growth has decimated virgin land so that newly formed households get accommodate only by splitting up existing holdings (World Bank, 1987). It is therefore hypothesized that households in areas with higher population pressure may be associated with greater likelihood of feeling land tenure insecurity.

In line with the human capital theory, education of the household head might be positively correlated to security due to opportunities which come with education (Sidibe, 2005). Sex of household head may matter because female heads may have less influence in society (Adesina et al., 2000). But if women headed households exist mainly in women's villages of origin then women headed families may feel secure once years of residence in the village of residence are controlled for. Moreover from the matrilineal systems, women should ideally possess strong rights to land. In matrilineal social systems, for example, a woman's daughters may force out their maternal uncle from any land he may have shared with their mother because he would be considered a usurper (Peters, 1997

Table 3. Description of the variables.

Variable name	Description
Absolute indigenous	A dummy variable =1 if the household head is in the absolutely secure category (both parents of head being indigenous in the village), 0, otherwise
indigenous	A dummy variable=1 if household head's mother is indigenous in the village but the father is not where head is, 0 otherwise
Weakly indigenous	A dummy variable =1 if the father of the household head is indigenous in the village but the mother is not, 0 otherwise
Yrs	A continuous variable and is household head's years of residence in the village of residence
Perception	Perception of security as reported by households and =1 if a farmer feels secure, 0 otherwise
Yrss	A continuous variable and is the number of years the spouse of the household head has been living in the village of head's residence
education	A Continuous variable and is the number of years of schooling of the household head
educations	A continuous variable and is the number of years of schooling of the spouse
Gender	Is a dummy variable and =1 if the household head is male and 0, if female.
Age	Is the age of the household head
Ages	Is the age of the household spouse
Numb	Is the household total number of people
inhchiefpurchase	Is a dummy variable and =1 if most of the land is acquired through purchase, 0 otherwise
Inhhusb	Is a dummy variable and =1 if most of the land is acquired from household head's side, 0, otherwise
Inhwif	Is a dummy variable and =1 if most of the land is acquired from spouse's side, 0 otherwise
Inherent	Is a dummy variable and =1 if most of the land is acquired through rent , 0 otherwise
Lilongwe (title)	Titling dummy variable, =1 if land was once titled, 0, otherwise
Kasungu	District level dummy variables, =1 if Kasungu and 0 otherwise

1997; Kishindo, 2004). For women residing in their husband's villages a woman's rights may only be saved if she stayed in marriage for long (e.g. 30 years) and if she had more children (Guyer, 1986). Security also depends on status. Women may become heads when they are divorced, widowed or are unmarried. Unmarried ones normally live in the village of origin where they have kinship ties and access to land. Divorced ones normally do the same while widows may choose to stay at the husband's place if they were patrilocal. Most women heads reside in their villages of origin where the matrilineal culture gives them land access. Furthermore, Kishindo (1995) and Place and Otsuka (2001) argue that under uxorilocal marriage, men have weak land- right security in the early period of the marriage. It is expected that women will be less likely to feel tenure insecure when they are household heads.

It is sometimes argued that women living in their villages of origin will be more secure than younger ones. This could be as a result of the many possible social networks that could be built the longer one lives. Moreover older women may have children who would confer security to them in old age. For these reasons it was hypothesized that women's (spouse's) age will be positively correlated to land tenure security.

The return of a man or woman to his/her village after a divorce or spouse's death may cause a land dispute among kin members because the allocation of land to the returning person is likely to be confer difficulty due to the severe scarcity of land in many parts of rural Malawi (Kishindo, 1997; Peters 2002). Farm household heads that have just returned from their husbands' or wives' places will be likely to feel land tenure insecure though this may change over time as they start making social networks. It was hence hypothesized that years of residence in a locality would be positively related to security of land tenure.

Household size provides security to land both for the man and the woman because this is indicative of the number of children that a household head has. Studies have shown that the many children one has the less likely they may be chased from their matrimonial home after the demise of their spouse (Guyer, 1986). It was expected that family size will be positively related to security of land tenure.

Previous land tenure institutions such as titling in the Lilongwe district may have some influence on existing land tenure security. Land titling in Lilongwe took place about three decades ago and it might be interesting to investigate if households in Lilongwe are any secure than those in Kasungu and Machinga districts. The effect of land titling on security is an empirical question (even though Feder and Onchan would predict a positive relationship) because, titling took place a long time ago and from the author's informal discussions with households in Lilongwe, titles are no longer available and respected and land transfer follows the matrilineal system.

Table 4. Descriptive results.

Variable	Description	Minimum	Maximum	Mean	Std. Deviation
Numb	Number of people older than 10 yrs	1.00	10.00	3.59	1.86
Totland	Total land owned	.00	50.00	4.31	6.54
Gender	Sex of head (1=male)	.00	1.00	.84	.36
Education	Schooling (1=educated above senior primary)	.00	1.00	.16	.36
Age	Age of household head	18.00	80.00	39.72	13.83
yrs	Years of residence in the village	1.00	58.00	16.39	13.63
Perception of security	Perception of security (1=secure)	.00	1.00	.89	.31

Table 5. Titling and perception of security (cross tabulation),

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.569(b)	1	.451		
Continuity Correction(a)	.287	1	.592		
Likelihood Ratio	.563	1	.453		
Fisher's Exact Test				.516	.294
Linear-by-Linear Association	.566	1	.452		
N of Valid Cases	229				

RESULTS AND DISCUSSION

Descriptive results

Table 4 above presents descriptive statistics for some of the variables that are related to the household's socio-economic status. It shows that most of the household heads perceived land ownership security as the average of the dummy variable capturing perception of security is greater than 0.5. Furthermore, most of the household heads were young men and women aged around 39 years even though there were others aged 80 years and 18 years. This is in line with the fact that Malawi's life expectancy is below 40 years and the country is quickly running short of old people (Matchaya, 2007).

The figure 1 presents evidence on the importance of the land ownership security issue in farmer's agricultural decisions at the time of the study. It shows that only 9% of the sampled farmers did consider land ownership as a very important issue. The rest were more concerned with other factors of production.

The Table 5 above presents results of Chi-square tests on whether land titling would boost people's perception of land ownership security in the rural settings where the study was conducted. On the basis of the above results, land titling does not influence people's perception of land ownership security. So land titling is irrelevant to land ownership security and this is indeed vindicated further by the finding that most of the land was transferred through the traditional means.

The Table 6 below presents statistical evidence that shows that the framework developed herein could help explain land ownership security differentials across households. It presents statistical data that links to land ownership security to the lineage statuses of household heads in their places of residence. While land titling fails to explain the perception of security, the traditional categories in which every household held may be perceived to fall, do help explain security perceptions. The chi-square statistic for this relationship is 13.47 and is signify-cant at $P<0.004$. Thus this finding upholds the theory about the factors behind land ownership security in rural areas as developed herein.

The Figure 2 above shows that the predominant sources of land among the sampled households in the predominantly matrilineal Lilongwe district where land titl-ing was attempted three decades ago was inheritance from the wife's mother or relatives with about 46 (47%) plots being sourced that way. The second mode of land acqui-sition was inheritance from the husband's mother with

Table 6. Perception of security and the residential statuses of the household heads

perception of security	Absolute indigenous household heads	Indigenous household heads	weakly indigenous household heads	non-indigenous household heads	Per cent
not feel secure	0	5.5	18.2	14.7	9.7
feel secure	100	94.5	81.8	85.3	90.3
Total	100	100	100	100	100

Chi-Square 13.471, P =.004.

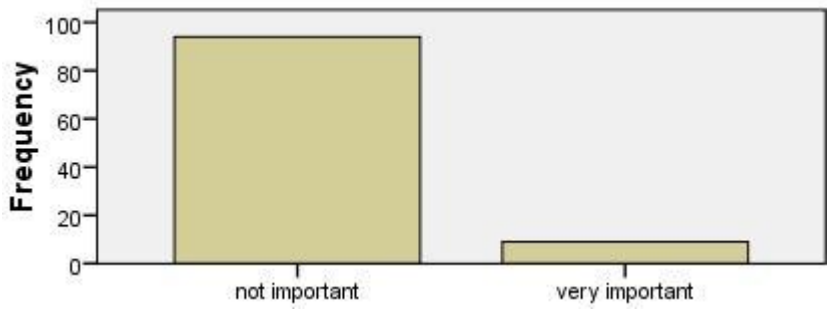

Figure 1. Importance of land ownership security agricultural decisions.

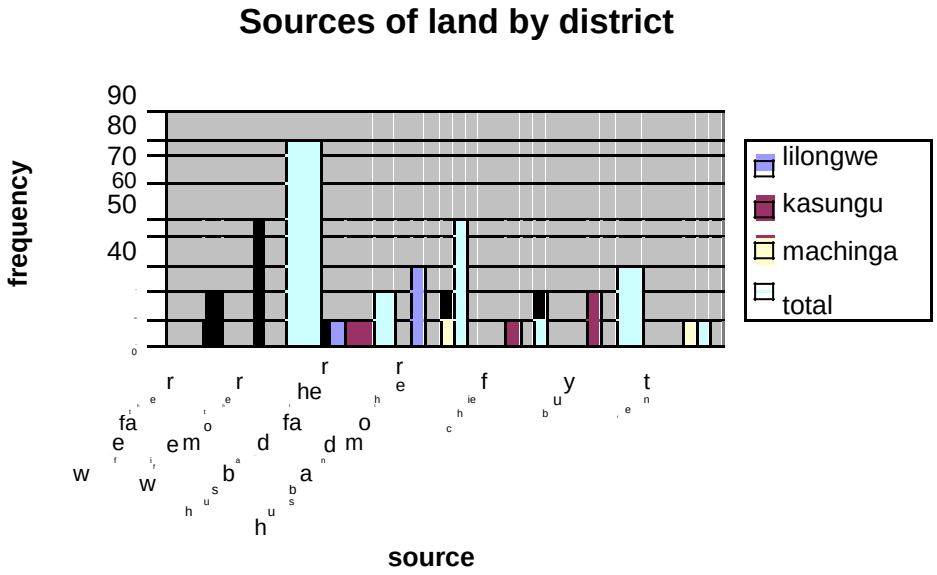

Figure 2. Sources of Land (Frequencies).

about 28 (29%) parcels being acquired that way. Less predominant forms were acquisition from the wife's father (3 per cent), acquisition from the husband's father (9 per cent), the village chief (5 per cent), the land sales and land rentals markets.

The fact that the most predominant modes of land acquisition in Lilongwe were from the mothers' side does show that as far as land access in the matrilineal setting was concerned, women had some control of land and they could bequeath it mainly to daughters than to sons. Since the total percentage of land parcels transferred with regard to the matrilineal culture was above 80 per cent, it can be argued that even under heavy pressure, the matrilineal mode of and transfer was resilient. These findings do support Mkandawire (1992) and Kishindo (2004) who argued that the *Chewa* people still follow matrilineal rules of inheritance in which land is passed down through matrilines, most commonly from female

landholders to female heirs (Kishindo, 2004; Mkandawire, 1992) but are in contrast to Mkandawire (1984), who suggested that the matrilineal culture was being flouted heavily with population growth.

Land sales and rentals were other adaptive strategies that villagers employed to expand their farm acreage but were in general scanty and hampered by land scarcity itself, liquidity constraints and distrust as learnt from focus group discussion.

The results from the Machinga district which is also predominantly matrilineal with mainly *Yao* tribe show that the major mode of land acquisition was inheritance from the wife's mother with 42% of the 66 land parcels inherited that way. Inheritance from the husband's mother was second dominant mode of acquisition with 26% of land transfers following this channel. Husbands almost never obtained any land from their fathers but women could access some land from their fathers though this was not a frequent observation and was only a superior mode to land acquisition from the chiefs and land rentals. Land sale was almost non-existent though 10 per cent of surveyed land parcels were rented. Again this does suggest that women had some influence as far as land transfers were concerned and in male children were less likely to get any land from their mothers. The matrilineal way of land transfer accounted for over 70% of the transfers.

The Figure 1 also shows that land in the studied area of the Kasungu district, a predominantly patriarchal society with some mix of immigrants from both patriarchal and matrilineal societies (mainly *Chewa and Tumbuka*), was acquired mainly through sale. This finding should not necessarily imply that there was a vibrant land sales market from the area studied. In fact most of the land parcels that were reported as bought were bought by migrants who had come from other places some 10 years before the study from the chiefs who themselves wanted to increase the sizes of their villages. This was also evident in informal dialogues with the chief who when asked why he had many migrants in the village had to say '*mfumu imalemekezeka ndi wanthu'* (the chief is more respected if he has many people). The second most used method of land acquisition was inheritance from the husband's father. Inheritance from the husband's mother, the chief and wife's mother were also important. The results from the Kasungu district show that men had an upper hand in land acquisition in the predominantly patriarchal society.

Since the mode of land acquisition may affect the household head's perception of land tenure security, sources of land acquisition are included in the regression model that follows later.

This study argues that a very useful factor that may help explain land tenure security is the statute of the household in the village of residence. Referring to what has been discussed previously, it is expected that membership to village level core lineages may be important in determining a household head's land tenure security. Specifically, some household heads end up being classified as non-indigenous (*obweraobwera*) by virtue of being immigrants or uxorilocal (living in the wife's village) while others become categorized as indigenous (*apaoapao*) as thy live in villages where their core lineages reside and enjoy legitimate land access. These categories may experience difference levels of land tenure security. The data suggest some support of the theory as can be deduced from the figure below.

The Figure 3 shows that on average, household heads living in villages where both their mothers and fathers were also indigenous (*apaoapao* /absolute indigenous) were less likely to feel land tenure insecure (refer to the lower curve) while household heads who lived in villages associated with neither of their parents felt more insecure. Typical examples of the latter category are men who live in their wives' villages and immigrants. The other two categories with at least one parent being associated with the village of residence were likely to feel secure than the most insecure group (*obweraobwera*) but were relatively less likely to feel more secure than the *apaoapao* group.

It should also be mentioned in advance that most of the households sampled felt land tenure secure and these findings were consistent with those from group discussions. Only 19 of the 103 households indicated some level of land tenure insecurity but most of them went on to explain that it was not much of the problem. Most household heads and informants indicated that the modes in which land was transferred were sufficient to confer security and thought that land titling was not an issue they would put forward as a priority.

In practice there may be many other factors that would help determine land tenure security perception formation hence it was felt reasonable to run a logit regression model controlling for other relevant variables discussed previously. Table 7 below presents results from the logit regression model.

Regression results

The Table 7 below presents econometric evidence on the sources of land ownership security in Malawi. It shows logistic regression estimates for the land ownership security model for Malawi.

The Nagelkerke R-sq shows that the variables in the model are useful in predicting land tenure security while the Hosmer Lemeshow test result indicates that the observed land tenure security is not significantly different from those predicted by the model and that the overall model fit is good. The dummy variables representing the categories of household heads in their places of residence were statistically significant at the 1 per cent level. Since the omitted category was the *non-indigenous* group (*obweraobwera*), the positive effect shows that being indigenous in the village was associated with less likelihood that one would feel tenure secure. This is in line with what was hypothesized and the writings of Kishindo

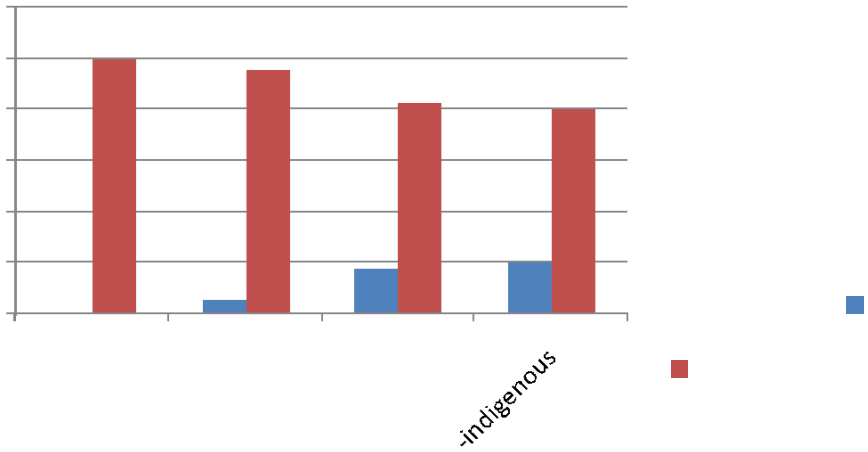

Figure 3. The perception of land tenure security across the indigenous categories.

(2004) and Pachai (1978). In fact the odds for indigenous people to feel land tenure secure is about 44 to 45 times more than the odds for non-indigenous farmers (Peng et al., 2002). Although many coefficients are statistically significant, the results from the marginal coefficients, the odds ratio and the logit coefficients together do suggest that the major factors that would determine whether one will feel secure or not are the residence categories (whether one is indigenous or not) in which case, studies that have not included such modelling might have been misspecified.

The results also show that for both household heads and their spouses, the longer the period they stayed in the surveyed villages the less likely they would feel tenure insecure echoing the studies referred to herein and what was hypothesized earlier in this study. Longer stays in a society may enable individuals to create important social networks in their places of residence, a development which would prevent them from being evicted from his/farmland.

The education of both the household heads and their spouses increased the likelihood that they would feel secure. This result is consistent with predictions from human capital theories. Educated farmers are likely going to be well informed of traditional rules and any loopholes that may exist therein. They would also be among the wealthy and well-to-do farmers due to the rational decision making that is assumed to come with education. Due to one or both of these reasons, they would relatively feel tenure secure (Broegaard, 2005).

On average, women headed households seemed to be less likely to feel insecure compared to male headed households underscoring the previous finding that women seemed to control land. Women may be disadvantaged in other respects but where culture is still valued, matrilineal systems give them power towards land holding and bequeathal.

The coefficient of the age of the household head insignificantly negatively influenced the perception of security of land tenure while the age of second household heads (such as spouses) was positively related to household level perception of land tenure security probably due to the same reason that societal level social networks tend to increase with age. The larger household sizes seemed to increase land tenure security possibly because part of the larger family would comprise children falling in the category of indigenous individuals. It was observed during focus group discussion that children of an uxorilocal husband would offer him security sometimes once his wife died and hence would not be more likely to feel insecure. This finding is also in accord with the findings of Guyer, (1986). Purchased and rented land was not more secure compared to that acquired from the wife's side but there were no systematic differences in security between land from the wife's side and that from the husband's side. It was learned from the focus group discussion that purchased land could be retaken by the previous owners and money would be returned if it suited other village level, or lineage elders. The reason is that the chief could potentially argue that all land belongs to the village level core lineages and though household in the village may use it, they cannot sell it. The Kasungu and Lilongwe districts seemed not to differ significantly from the Machinga district in terms of land tenure security. The fact that the Lilongwe district showed no superiority in terms of security than Machinga district is proof that land titling may not

Table 7. Determinants of land ownership security in Malawi: Logit Regression Results.

Dependent Perception of security	Coef. (Logit)	Coef. (Logit)	Marginal Effects dy/dx[1]	Odds Ratio Exp(B)
Absindigenous		**2.80*** (.930)**	**.153*** (.046)**	**16.61*** (10.10)**
Indigenous		**2.747*** (.976)**	**.074*** (.027)**	**15.595*** (15.217)**
weakindigenous		**2.021*** (.535)**	**.146*** (.054)**	**7.543*** (4.038)**
Inhhusb		-.474 (.666)	-.030 (.046)	.622 (.415)
Chiefpurchase		**-2.319** (.930)**	-.258 (.157)	**.098** (.091)**
Inherent		**-2.601*** (.867)**	**-.373* (.200)**	**.074*** (.064)**
Gender	**-4.05*** (1.129)**	**-4.364*** (1.303)**	**-.113*** (.034)**	**.013*** (.017)**
Logtotland	**.842*** (.296)**	.465 (.335)	.027 (.019)	1.592 (.533)
Yrs	**.043** (.020)**	**.059** (.028)**	**.003** (.002)**	**1.061** (.030)**
Yrss	.005 (.022)	-.012 (.027)	-.001 (.002)	.988 (.027)
Age	**-.046* (.024)**	-.038 (.026)	-.002 (.001)	.963 (.025)
Ages	.042 (.028)	**.065** (.033)**	**.004** (.002)**	**1.067** (.035)**
Education	**.228*** (.071)**	**.171** (.083)**	**.010* (.005)**	**1.187** (.099)**
Educations	**.229*** (.089)**	**.288*** (.103)**	**.016** (.006)**	**1.333*** (.138)**
Numb	**.742*** (.209)**	**.980*** (.257)**	**.056*** (.015)**	**2.663*** (.683)**
Lilongwe	***.454 (.586)***	***-.042 (.711)***	***-.002 (.041)***	***.959 (.682)***
Kasungu	***-1.007 (.701)***	***.260 (.929)***	***.014 (.049)***	***1.297 (1.205)***
_cons	.085 (1.063)	-1.545 (1.299)		
	Correct pred=.84 Nagelkeke Rsq=.39 Model sig =0.000	Correct pred=.87 Nagalkerke Rsq=.59 Model sig =0.000		

Hosmer and Lemeshow Test, Chi-Square =5.5, (P<.698). Standard errors are in parentheses.

necessarily improve or worsen land ownership security in the Malawian setting. In this case, the Lilongwe Land development program does not seem to have improved land ownership security for farmers in Lilongwe and as amatter of fact, farmers in Lilongwe seem to follow the matrilineal land transfer rules almost religiously. This is established both in the univariate and multivariate tests.

Conclusions

The purpose of this study was to develop and empirically put to test a framework which would help explain determinants of land tenure security, and to document the major existing modes of land acquisition in the customary sector in Malawi.

This study has found that despite that matrilineal systems have been under pressure to change, a great proportion of land transfer still takes place through rules outlined by matrilineal systems. Although there are cases in all the study sites where land was transferred contrary to the cultural rules, this study would argue that this is nothing out of the ordinary as even in the past such rules have never been followed 100% of the time (Chimhowu and Woodhouse, 2006). What is interesting is that des-

pite population pressure and other patriarchal influences, these systems are still setting the rules for land transfer to as much as 80 per cent of the time pointing to the resilience inbuilt in the system.

The study also finds that on average there was a high likelihood that female headed households would feel land tenure secure than male headed ones in the matrilineal societies casting doubt as to whether the claim that women may feel more discriminated against and may feel more insecure under the existing customary land tenure regimes is the universal truth. However, it could be argued that land titling could undermine women's grip of land in Malawi.

This study also finds that land tenure insecurity was not much of a problem to many households and if there was insecurity at all, then it was men who were likely to feel tenure insecure especially in the matrilineal systems.

The fact that more land came from wife's mother implies that marriage was still an important means of gaining access to land.

Land titling did not boost land tenure security in Lilongwe district and land is still transferred through the traditional rules as shown herein.

More importantly, the indigenous categories coined herein (*absolutely indigenous*, *indigenous*, *weakly indigenous* and *non indigenous*) have proved to statistically explain land tenure security well. This is an important finding because it clearly informs policy makers about which households are more likely to feel land insecurity. This is helpful for any attempts to tackle land tenure insecurity. Furthermore the significance of this categorization in the land tenure security model simplifies the task of modelling the effect of the customary land holding in productivity or any farming studies where it is thought that the customary land holding system may be important. Previously, many studies have simply used title or no title dummy variables which, in practice are not more transparent because for one thing, there is an assumption that all farmers with land titles enjoy the same levels of security when in fact as they may not.

Policy implications

The World Bank sponsored land reform program being implemented in Malawi needs to be aware of the potential resilience that that exist in the traditional land access systems. Traditional land access systems are resilient and have many inherent merits and the titling programs should ensure that they do not lead to loss of such merits.

Land reforms in matrilineal systems should not take away or dilute women's rights to land. Women would probably be worse off if land reforms favoured an end to matrilineal land transfer as men would easily take advantage of this and possess more land and rights. This is because women generally do not have the resources that may be required to obtain and maintain a title over time. Due to their poor economic positions, some women may sell their titles to rich and powerful groups to survive and this may leave a number of women worse off over time. This phenomenon may be much more under the titling regimes than it is under the traditional land ownership because the latter has inbuilt checks against destitute land alienation.

The new land policy seeks to have village level land registered and titled. The implications could be far-reaching for the following reasons:

- At present there is not much land tenure insecurity in the villages. It is therefore doubtful as to whether many people would see the urgency of land titling/reforms and this would make land titling hard.
- Land titling and any reforms need careful thought because in most parts of the country it would imply completely changing the strengths of long standing traditions of land access. As already argued, men would become land owners hence essentially stripping women of their rights to land. Whether uxorilocal men would hold on to their land titles after the death of their wives or after divorce is not an easy question.

If rural development projects are to be helpful they should also aim at empowering women so that even in cases where men feel insecure women should continue to optimally use their land.

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