Are they free to make choices? Financial matters and autonomy among the older adults in India

Bakshi, Sanjeev and Pathak, Prasanta and Priyadarshini, Anamika

Indira Gandhi National Tribal University, Amarkantak, Indian Statistical Institute, Kolkata, Central University of Bihar, India

June 2012

ARE THEY FREE TO MAKE CHOICES? FINANCIAL MATTERS AND AUTONOMY AMONG THE OLDER ADULTS IN INDIA

SANJEEV BAKSHI, PRASANTA PATHAK & ANAMIKA PRIYADARSHINI

Assistant Professor, Department of Statistics, Indira Gandhi National Tribal University, Amarkantak, India
**Associate Professor, Population Studies Unit, Indian Statistical Institute, Kolkata, India*
***Assistant Professor, Centre for Development Studies, Central University of Bihar, Patna, India*

Abstract

Well-being is desired and drives all irrespective of age. The salience of empowerment as a means to well-being endures during the older ages also. Therefore, the present study addresses this issue in the context of ageing in India. The state of autonomy in financial matters namely, the management of owned assets and the management of owned property, is a manifestation of power. For this purpose, data sets pertaining to the 42nd and the 52nd rounds of the National Sample Survey have been utilized. Inferences pertaining to the logit regression models indicate that gender, marital status, employment, financial dependence and health are associated with the autonomy of the older adults. Temporal changes in these associations are also visible. In fact, inferences pertaining to the log-linear models indicate interactions among gender, marital status and autonomy. The study identifies the need of investigation into the pathways of disempowerment.

Key words: ageing, assets and property, empowerment, India, older adults

Introduction

Human beings age since the time of inception and their chronological life span is divided into different realms of childhood, youth, adulthood and older adulthood, in that order, on the basis of their age. The social roles expected out of an individual change while transcending from one realm to the next. Hence, each such realm is identified by the status one acquires and the corresponding role one has to perform; although depending on the cultural context the status and the corresponding roles may differ. Whatever may be the status of an individual all human beings strive to attain maximum well being.

It is a generally observed that while moving into the realm of older adulthood most of the people find themselves to be either retired from active economic life or at the verge of retirement. The marital status too is at the risk of a change from married to widow. The social role and status also changes with younger generation occupying the social roles that were once performed by the older adults. Further, physical mobility is at stake and vulnerabilities to chronic health conditions are also very common.

Looking at these peculiar changes, detrimental to power in a sense, the question naturally arises regarding the capability of the older adults to make choices regarding the issues that matter to them. This vulnerability cannot be overcome unless the older adults are powerful enough to make choices about the alternatives while deciding about these issues. According to Myers (1991) these multiple losses may be detrimental to the self-efficacy among the older adults and therefore, they may be in need of empowerment. Hence, the salience of the power and empowerment at the older ages is evident.

Kar et al. (1999) have identified four domains or aspects of life that affect overall quality of life of the powerless. These are basic human rights, equal rights for women, economic enhancement and health promotion and disease prevention. Citing from earlier works (Freire 1973; Rappaport 1987; Wallerstein & Bernstein 1994; Zimmerman, Israel, Schulz & Checkoway 1992; Zimmerman 1995), the author has defined empowerment as a process through which individuals, communities and organizations gain control over issues and problems that concern them most.

According to Kabeer (1999) the process of empowerment is about power[1] and making choices[2]. The concept incorporates three interrelated dimensions namely, agency[3], resources[4] and achievements[5].

Kabeer (1999) while discussing empowerment points out that "not everyone accepts that empowerment can be clearly defined, let alone measured." Dixon (1998), while discussing empowerment of women says "it is undoubtedly premature, if not impossible, to develop a universally acceptable set of indicators that would be sensitive to variations in social contexts and meaning and yet, at the same time, be comparable across settings." Likewise the "power within", which is functionally manifested as exercising agency, is difficult to measure. Further, indicators for the "power within" can be many but may fall short of any universal acceptability.

The concerns about the well-being of the older adults are not unwarranted in the backdrop of the prevailing socioeconomic circumstances. Notwithstanding the vulnerability of this group vis-à-vis the well-being the gender differentials at older ages may prevail in social setups that are known for gender differentials at comparatively younger ages. The reasons being firstly that the older women in traditional societies were never a part of the work force and secondly their social status has association with the marital status and having son (Vlassoff 1990). Their continuous financial dependence during the life course shall be detrimental to their well-being at large. It should be noted that the gender differentials also prevail vis-à-vis owing financial assets and / or property among the older adults in India. These differentials may be attributed to unimplemented inheritance laws (Rajan 2010). Therefore, empowerment of older adults needs changes in both the older adults and the society (Myers 1991). Empowerment as defined by Cocran (1987) incorporates changes in people and controlling institutions.

As explained in the preceding sections empowerment is a concept pertaining to a group or an individual depending on the context. In the latter case ones power should get reflected in his/her exercising agency. Making choices or independent decision making is akin to exercising agency. However, there needs to be sufficient grounds to exercise agency. For example, consider an aspect of well-being say financial condition. Property and /or assets can serve as a source of financial security at older ages. The question of exercising agency in respect of these resources arises only if one has these resources. In other words ones power can be ascertained or confirmed only if one has sufficient ground to exercise it. Otherwise, the agency remains latent. Consequently one shall be deemed as powerful if one is able to exercise agency. Thus, having financial resources provides a sufficient ground for exercising agency in financial matters. Hence, the older adults who do not have sufficient grounds cannot be tested for being powerful.

The studies pertaining to the issues of empowerment in the South Asia are focused on the state of status and autonomy of younger women considering a variety of indicators. In a study of women aged 15-59, Roy and Niranjan (2004), citing from Jejeebhoy (1998), have considered decision-making, freedom of movement and access to money as direct indicators of autonomy. In the same study education, work participation, age and educational difference between husband and wife are included as indirect indicators of autonomy. Moreover, religion, caste, place of residence, economic status and family type are also included. Balk (1997), in a study of women aged between 15 and 56, identifies physical mobility and women's authority in household decision making as indicators of status of women.

Though gender issues are well addressed in recent literature (Bhattacharya 2006; Devi 1993; Gulati 1993; Koenig & Gillian 1992; Selveratnam 1988) we lack quantitative studies of the issues of older adults in the empowerment perspective. It is obvious that, in the case of older adults, exercising of agency may be influenced by various socioeconomic and cultural characteristics of the older adult especially, gender, marital status, health, financial dependence and work status. The losses are experiences at older ages in respect of these factors. It is, therefore, imperative to assess, in quantitative terms, the extent to which these factors that are associated with inducing capacity within the older adults. To test the association of these factors with the empowerment and the changes in these effects the following test hypotheses are formulated:

H_{01}: net of all effects, the states of marital status (currently married/widow) do not differ significantly pertaining to their effect on exercising agency.

H_{02}: net of all effects, the states of work status (in work force/not in work force) do not differ significantly pertaining to their effect on exercising agency.

H_{03}: net of all effects, the states of having/ not having a chronic disease do not differ significantly pertaining to their effect on exercising agency.

H_{04}: net of all effects, the states of immobility (severe/partial/no difficulty in mobility) do not differ significantly pertaining to their effect on exercising agency.

H_{05}: net of all effects, the states of financial dependence (dependent/partially dependent/not dependent) do not differ significantly pertaining to their effect on exercising agency.

H_{06}: net of all effects, the effects of gender (male/female) on exercising agency do not differ significantly.

H_{07}: all the effects mentioned above have not changed significantly over the two time periods considered (1986-87 and 1995-96).

Further, the interaction among gender, marital status and agency with respect to the indicators of empowerment needs thorough investigation. Hence the following hypotheses need to be tested:

H_{08}: conditioned on marital status the male older adults and the female older adults do not differ significantly in their probabilities of exercising agency with respect to management of assets.

H_{09}: conditioned on marital status the male older adults and the female older adults do not differ significantly in their probabilities of exercising agency with respect to management of property.

H_{10}: there are no temporal changes in the structure of association among marital status, gender, exercising agency with respect to management of properly and exercising agency with respect to management of assets.

Methods

The information pertaining to the nature and dimensions of the socioeconomic and health status of the older adults in India has been collected in the 42nd, 52nd, 60th and the 71st rounds of the National Sample Survey (NSS). These sample surveys were conducted during the periods July 1986 – June 1987, July 1995 - June 1996, January – June 2004 and January – June 2014 respectively. The former two rounds included information on owing and participation in management of financial assets and owing and participation in management of property by the older adults. The sample for the 42nd round surveyed 34081 older males and 21989 older females while the 52nd round covered 14594 older males and 13949 older females.

The household was the ultimate unit of selection for the multistage stratified sampling design that was adopted for the above mentioned surveys. Consequently, all the older adults residing in the selected household were interviewed. Hence, the statistical analyses that are based on the older adults as observation units fall short of the assumption of a random sample that is essential for the application of statistical techniques that assume independence of observations. Moreover, logical inconsistencies arise if an older adult couple responds affirmative to owning and managing a common property/financial asset. For example, two people (or more) responding affirmative to a case on the basis of common property/ financial assets contribute to the total frequency as 1 and 1 or 0.5 and 0.5 or any other combination summing to 1 has no basis to assign frequencies to them. Therefore, as a recourse, the present study, further draws a sample from the given sample such that one older adult is selected for each of the selected households while assigning equal probability of selection to each older adult in a household. For the sample thus obtained, each observation is weighted accordingly and all the analyses are carried out using the weighted observations. The samples utilized for the present study thus consisted of 45151 older adults (27315 older males and 17836 older females) for the 42nd round of the NSS and 22519 older adults (11664 older males and 10855 older females) for the 52nd round of the NSS.

Keeping in view the issues in defining a measure of power and relying on the nationwide information that is available on this matter in the 42nd and the 52nd rounds of the NSS, the present study proposes two indicators namely, management of the owned property and management of the owned assets[6]. The agency here is managing owned assets and managing owned property. These are binary variables with two states namely, managing and not managing. There are, however, few cases where

the older adults report managing the resources not owned by them. The present study does not include these cases.

As mentioned earlier changes in the marital status, employment, financial dependence, living arrangements and health accompany the older ages. Added to this the gender differentials may prevail in the older adult population with respect to aspects of well-being. Further, education, household economic condition and place of residence may influence the agency among the older adults. These factors serve as moderators as these do not directly represent the changes in socioeconomic profiles that occur at the older ages. The states of categorical explanatory variables are shown in the Table1. Logit regression model are utilized to model the associations of the explanatory variables with the agency. The reference categories are so chosen so as to represent a state considered to represent greater well being. For example being currently married in the case of marital status is considered as a category of greater well being when compared to being widow. The states of the variables namely, gender, marital status, level of education, work participation, living arrangements, financial dependence, chronic diseases namely, chronic cough, piles, pain in joints, and place of residence are self-explanatory. The chronic diseases namely blood pressure, heart disease, urinary problems and diabetes require diagnosis for being detected, therefore, the response categories for these chronic diseases are having, not having and not known. "not having" serves as the reference category. Further, no inferences regarding the effect of the category "not known" can be meaningfully interpreted as the responses for this category may be a mix of those actually having the disease and those who do not have the disease. The household economic conditions are captured by income pentiles separately constructed for rural and urban areas. The fifth quintile serves as reference category as it contains households with highest income. Hence the following model may be utilized to assess the association of these factors with the agency.

$age + gender + marital\ status + employment + financial\ dependence +$
$living\ arrangements + health + education +\ household\ economic\ condition +$
$\ place\ of\ residence$

The change in the effects pertaining to the logit models for the two time periods are tested using the statistic given as follows:

$\chi^2 = -2\ln(L_c) - [\ (-2\ln(L_1) + (-2\ln(L_2)],$

Where, L_c, L_1 and L_2 are fitted log likelihoods for the logit models for the joint sample, first sample (1986-87 data) and second sample (1995-96 data) respectively. The statistic follows a chi-squared distribution under the hypothesis that the regressor effects are same across both the groups. If the models for the two reference periods are found to differ significantly the significance of the change in the effects for the coefficients of the logit regression models are tested using large sample properties of the maximum likelihood estimates (Demaris 2004). These tests are bases on the standard normal distribution.

To investigate the interactions among the gender, the marital status, the management of owned assets and the management of owned property consider a four dimensional contingency table $gender(\alpha) \times marital\ status(\beta) \times managing\ assets(\gamma) \times managing\ property(\delta)$. A log linear model corresponding to the contingency table has been utilized to assess the effect of widowhood on male older adults and female older adults in respect of decision making with respect to management of assets and management of property. The saturated model for the cell frequencies is given as follows:

$log(c_{ijkl}) = \mu +\propto_i + \beta_j + \gamma_k + \delta_l + (\alpha\beta)_{ij} + (\beta\gamma)_{jk} + (\gamma\delta)_{kl} + (\alpha\delta)_{il} + (\alpha\gamma)_{ik} + (\beta\delta)_{jl} + (\alpha\beta\gamma)_{ijk}$
$+ (\alpha\beta\delta)_{ijl} + (\beta\gamma\delta)_{jkl} + (\alpha\gamma\delta)_{ikl} + (\alpha\beta\gamma\delta)_{ijkl}$

We start with the saturated model as given above, search for the best model among hierarchical models using backward elimination (at level of significance 0.05) removing higher order interaction terms first, in that order, without significantly affecting the fit of the model. The best model is thus obtained that reflects the association structure among variables in the population.

Results

In what follows the findings pertaining to the logistic regression models and the log linear models are discussed. The inferences based on the logit regression models are presented for the later time period

(1994 - 95) along with a comparison with the former time period (1986-87) as the coefficients in the logit models are found to differ significantly for the management of property as well as assets. Any change in the covariance structure is reflected in the change in the regression parameters over the two time points (Table 2 and Table 3).

Marital status and exercising agency

The odds in favour of managing assets are 0.92 times lesser for widowed older adults when compared to their married counterparts. The effect has significantly increased when compared to the earlier reference period resulting in an increase in the odds ratio from 0.74 to 0.92. Similarly, the odds in favour of managing property are 0.92 times lesser for widowed older adults. However, over the time the effect has significantly increased resulting in an increase in odds ratio from 0.74 to 0.96.

Employment and exercising agency

The odds in favour of management of owned property are 0.32 times lesser for the non-working older adults when compared to their employed counterparts. However, this effect has significantly decreased over the time. Consequently, the odds ratio has decreased from 0.42 to 0.27. Similarly, the odds in favour of management of owned assets are 0.27 times lesser among the non-working older adults. Over the timer the effect has decreased leading to fall of odds ratio from 0.43 to 0.32.

Health and exercising agency: the effect of difficulty in mobility

The older adults who have partial or severe kind of difficulty in mobility have lesser odds in favour of exercising agency when compared to their healthy counterparts. Their odds in favour of managing owned assets are 0.52 and 0.19 times lesser respectively. Over the time the effects in the logistic regression model have reduced in a fashion such that for partially as well as severely immobile older adults the odds ratios have decreased from 0.92 to 0.52 and 0.51 to 0.19 respectively. In case of exercising agency for owned property the state of older adults seems to be similar. When compared to the older adults with no difficulty in mobility, the partially and severely immobile older adults have respectively 0.46 times and 0.22 times lesser odds in favour of exercising agency. For the two kinds of difficulty in mobility the odds ratios show a significant decline from 0.76 to 0.46 and 0.50 to 0.22 respectively over the time.

Health and exercising agency: the effect of selected chronic diseases

Among the selected chronic diseases, namely, chronic cough, piles, problem of joints, hypertension, heart disease, urinary problems and diabetes only chronic cough and pain in joints and limbs are found to affect the exercise of agency by the older adults.

The odds in favour of managing assets are reduced by 0.76 times and 0.83 times respectively for the older adults who suffer from chronic cough and pain in joints and limbs when compared to the older adults who are free from these ailments. For the two chronic diseases the odds ratios show a significant decline from 1.19 to 0.76 and 0.95 to 0.83 respectively.

The exercise of agency in the management of owned property is affected by two among the selected chronic diseases namely chronic cough and pain in joints and limbs. The odds in favour of exercising agency are reduced by 0.81 times and 0.89 times respectively for those older adults who report these diseases. Further for chronic cough there is a significant reduction in odds ratio from 1.12 to 0.81 when compared to the earlier reference period. The decline in odds ratios for pain in joints and limbs, from 0.93 to 0.89, however, was not found to be significant.

It should be noted that an association between the chronic diseases namely, heart disease, diabetes and blood pressure and the management of assets is observed during the reference period 1986-87. Similarly, the management of property is found to be associated with the chronic diseases namely, urinary problems, heart disease, diabetes and blood pressure during the same reference period. It indicates that the differential that existed vis-a-vis these chronic conditions during the earlier reference period i.e. 1986-87 cease to exist during the later reference period, i.e. 1995-96.

Gender and exercising agency

The older males are more likely to exercise agency in respect of when compared to the older females. The odds in favour of managing owned property and managing owned financial assets are higher for older males by 3.09 times and 2.78 times respectively. Further when compared to the earlier period

the odds ratios have increased from 2.22 to 2.78 in case of management of property and 2.00 to 3.09 in case of management of assets.

Financial dependence and exercising agency

The older adults who are partially dependent or completely dependent on others are less likely to exercise agency pertaining to the management of owned assets. Their odds in favour of the management of owned assets are lower by 0.37 times and 0.17 times respectively. However, the odds ratios for the two cases show a significant increase from 0.24 to 0.37 and 0.12 to 0.17 partially dependent and completely dependent older adults respectively.

Exercising agency pertaining to the management of owned property is also affected by financial dependence. Partially dependent and dependent older adults have lesser odds in favour of exercising agency when compared to the older adults who are not financially dependent on others. The odds are reduced by 0.40 times and 0.18 times in these cases respectively. However, the odds ratios for the above cases have increased from 0.25 to 0.40 and 0.13 to 0.18 respectively in both the cases.

Association of age, economic status of household, education, living arrangements, place of residence with exercising agency

The findings indicate that exercising agency becomes a less likely event with increase in age. Moreover, the older adults belonging to lower economic strata (the households grouped under quintiles one through fourth) are less likely to exercise agency when compared to the older adults belonging to the highest economic strata (the households grouped under the fifth quintile). However, during the earlier reference period 1986-87 the effects pertaining to the lower economic strata were not found to be significantly different from the effect of the highest economic strata.

The effects for lower levels of education are not found to be significantly different from the effect for the highest level of education (10 or more years of education) for the management of owned assets for the reference period 1995-96. However, during the reference period 1986 – 87 the odds in favour of managing owned assets were 0.68 times lesser for illiterate older adults than that of older adults who had 10 or more than 10 years of education. Similarly, the odds in favour of managing owned assets are 0.76 times lesser for older adults with less than 10 years of education when compared to the older adults who had 10 or more than 10 years of education.

Education is found to be associated with the management of owned property during the reference period 1995-96. When compared to the older adults with 10 or more than 10 years of education the older adults who are illiterate or who have less than 10 years of education are respectively 0.71 times and 0.73 time less likely to manage their owned property. However, for the previous reference period this association is visible. Older adults living alone are also more likely to manage their owned assets and owned property when compared to the older adults who are co-residents. The older adults in rural areas are less likely to manage their owned assets and property when compared to their urban counterparts.

The interaction among marital status, gender and exercising agency (with respect to property and assets)

The log linear models for the time periods 1986-87 and 1995-96 denoted respectively as M1 and M2 are given as follows:

M1: $\log(c_{ijkl})$
$$= \mu + \propto_i + \beta_j + \gamma_k + \delta_l + (\alpha\beta)_{ij} + (\beta\gamma)_{jk} + (\gamma\delta)_{kl} + (\alpha\delta)_{il} + (\alpha\gamma)_{ik} + (\beta\delta)_{jl} + (\alpha\beta\delta)_{ijl}$$

M2: $\log(c_{ijkl})$
$$= \mu + \propto_i + \beta_j + \gamma_k + \delta_l + (\alpha\beta)_{ij} + (\beta\gamma)_{jk} + (\gamma\delta)_{kl} + (\alpha\delta)_{il} + (\alpha\gamma)_{ik} + (\alpha\beta\gamma)_{ijk}$$

where, the symbols have their meanings as defined earlier.

In the model M1 the association of gender and agency (for management of property) varies by the marital status (Table 4). The association between the gender and agency is reflected in the odds ratio. As per the model M1, the odds ratios vary with states of marital status. Given the population of older adults who manage assets the odds ratio for married and widowed older adults are respectively 0.31 and 0.84. This variation in odds ratio with marital status is due to the fact that the odds in favour of

agency for older males and older females change by marital status. For older females these odds are 31.00 and 19.59 for married and widowed ones respectively. For older males the respective values of odds are 100.89 and 23.31. The reduction in odds is more for older males (0.23 times) than for older females (0.63 times). For the older adults who do not exercise agency with respect to managing assets, according to M1, are having very less prospect to do the same in case of managing property.

[Inset Table 4 about here]

The model M2 (Table 5), on the other hand is qualitatively different form M1 indicating a change in association structure among the four variables over time (Figure 1). In the model there is an absence of conditional association between marital status and exercising agency with respect to management of property while controlling for rest of the variables. Further, a second order interaction among gender, marital status and exercising agency with respect to management of assets is found to exist. This interaction was absent in M1. The second order interaction among gender, marital status and exercising agency with respect to management of property is absent in M2.

[Inset Table5 about here]

[Inset Figure 1 about here]

The association between the gender and exercising agency changes with the states of marital status as the odds ratios for married older adults and widowed older adults are respectively 0.41 and 0.65.This difference comes as a result of differences in odds in favour of exercising agency with respect to the management of assets for older males as well as older females. Explicitly speaking for the older adults who exercise agency with respect to management of property, these odds are 75.34 and 31.19 for married older males and married older females. Whereas for widowed older males and widowed older females these odds are 35.13 and 22.99 respectively. The reduction in odds with marital status is more for older males (0.41 times) than older females (0.65 times).

The differentials in exercising agency vis-à-vis marital status, chronic diseases, namely, urinary problems (for management of property only), heart disease, diabetes and blood pressure have declined over the period under consideration. It is evident as the values of the odds ratios show a drift towards 1. In this respect the differentials gender (in case of management of property), difficulty in mobility, chronic diseases, namely, chronic cough and pain in joints and limbs have increased as the odds ratios drift away from 1 over the time.

Discussion

Being an independent decision maker in matters pertaining to one's life may be considered as the ultimate aim of all human endeavors aiming at well being. The present study explores the decision making among the Indian older adults pertaining to their financial matters. The being of an independent decision maker is by the virtue of the power within that manifests itself in the form of agency. Empirical evidences indicate that differentials are prevalent among the older adults vis-à-vis the agency. These differentials are visible across the levels of various attributes like gender, employment, marital status and place of residence. For example, older adults who are working are in a better state with respect to managing their owned assets and property. Thus if an older adults opts out of work force there are high chances that this will be detrimental to her/his capacity.

Like employment the state of marital status, health and financial independence may change, as the age advances, among the older adults. In fact, for the population under study it is very likely that the changes occur in these factors from employed to unemployed, from married to widow, from sound health to ill health and from being financially independent to being financially dependent. The findings indicate that unemployment, widowhood, ill health, financial dependence and increasing age are states of higher deprivation vis-a-vis power. Thus, the period of older adulthood may bring with it the lack of agency that eventually leads to disempowerment; a process that is the reverse of the

process of empowerment discussed earlier. Comparisons of the effects of the models over the two periods indicate that the ill effects of increasing age, widowhood, and hypertension have declined. On the other hand the ill effects of unemployment, severe and partial difficulty in mobility and chronic conditions like cough and pain in joints and limbs have increased. This reflects the varying salience of socioeconomic factors with time in respect of empowerment. In this context it is quite plausible that in a given social setup certain factors lose their importance and new factors appear as important factors over time. In addition the differentials due to gender have also increased over the time. The reasons for this may be that the older women may not be willing to exercise agency due to cultural norms.

The changes that accompany the older ages are irreversible and therefore may not lend themselves to any rectifiable policy measures. Never the less, sound health and financial independence are desired among the older adults. These may help sustain power within the older adults and contribute to their existence as independent decision makers. Furthermore, the differentials that arise out of gender, marital status and age may have causes that arise from the social system. Hence, social measures may be initiated to address them. A deeper insight into the process of disempowerment demands knowledge of the pathways to disempowerment at the older ages.

Endnotes

1. Power: the ability to make choices.
2. Choices: choice necessarily implies the possibility of alternatives, the ability to have chosen otherwise.
3. Agency/Process: the ability to define one's goals and act upon them. Agency is more than about observable action; it also encompasses the meaning, motivation and purpose which individuals bring to their activity, their sense of agency, or "the power within".
4. Resources/Pre-conditions: resources include not only material resources in the more conventional economic sense, but also various human and social resources which serve to enhance the ability to exercise choice.
5. Achievements are outcomes.
6. The participation in management of financial assets is defined as "involvement in making decisions such as making or enchasing fixed deposits etc. in bank or post office, purchase or encashment of (National Saving Certificates) N.S.C. / bonds/ shares, and generally deciding the change in portfolio of financial assets held by the household (conversion of one form of assets into another)" (National Sample Survey Organization, 1989; National Sample Survey Organization, 1998).

References

Agresti, A. (1990). An Introduction to Categorical Data Analysis. New York / Chichester / Brisbane / Toronto / Singapore: John Wiley and Sons.

Balk, D. (1997). Defying gender norms in rural Bangladesh: a social demographic analysis, Population Studies 51: 153-172.

Bhattacharya, P. C. (2006). Economic development, gender inequality, and demographic outcomes: evidence from India, Population and Development Review 32: 263-291.

Cochran, M. (1987). The parental empowerment process: Building on family strengths. Equity and Choice 4: 9-23.

Demaris, A. (2004). Regression with Social Data: Modeling Continuous and Limited Response Variables. New Jersey: John Wiley & Sons.

Devi, D. R. (1993). Status of women in India: a comparison by state, Asia-Pacific Population Journal 8: 59-77.

Dixon, M. R. (1998). Female empowerment and demographic processes: moving beyond Cairo. Paris, IUSSP. Policy Research Paper N° 13.

Freire, P. (1973). Education for Critical Consciousness. New York: Seabury Press.

Gulati, L. (1993). Population ageing and women in Kerala state, India, Asia-Pacific Population Journal 8: 53-63.

Jejeebhoy, S. (1998). Women's autonomy in rural India: It's dimensions, determinants and the influence of context. In H. B. Presser and G. Sen (ed.), Women's Empowerment and Demographic Processes (pp. 119-156). New York: Oxford University Press.

Kabeer, N. (1999). The conditions and consequences of choice: reflections on measurement of women's empowerment. Switzerland: UNRISD Discussion Paper No. 108.

Kar, S. B., Catherine A. P. & Kirstin L. C. (1999). Empowerment of Women for Health Promotion: A Meta-analysis, Social Science & Medicine 49: 1431-1460.

Koenig, M. A. & Gillian, H. C. F. (1992). Patriarchy, Women's Status, and Reproductive Behaviour in Rural North India, Demography India 21: 145-166.

Myers, J. E. (1991). Empowerment for later life. ERIC Digest. Available from URL: http://www.ericdigests.org/pre9219/life.htm.

National Sample Survey Organization. (1989). Socio-Economic Profile of the Aged Persons, Report of forty-second round: July 1986-June 1987. New Delhi: Department of statistics, Ministry of Planning and Programme Implementation, Government of India: NSS Report No. 367.

National Sample Survey Organization. (1998). The Aged in India: A Socio-economic Profile, NSS fifty-second round, July 1995-June 1996. New Delhi: Department of statistics, Ministry of Planning and Programme Implementation, Government of India, NSS Report No. 446(52/25.0/3).

Rajan, S. I. (2010). Demographic ageing and employment in India. Bangkok: International Labour Organization, Regional Office for Asia and the Pacific.

Rappaport, J. (1987). Terms of empowerment/exemplars of prevention: Towards a theory of community psychology, American Journal of Community Psychology 15: 121-148.

Roy, T. K., & Niranjan, S. (2004). Indicators of women empowerment in India, Asia-Pacific Population Journal 19: 23-38.

Selveratnam, S. (1988). Population and status of women, Asia-Pacific Population Journal 3: 3-28.

Vlassoff, C. (1990). The value of sons in an Indian village: How widows see it, Population Studies 44: 5-20.

Wallerstein, N. & Bernstein, E. (1994). Health education and community empowerment: Conceptualizing and measuring perceptions of individual, organizational and community control, Health Education Quarterly 21: 141-148.

Zimmerman, M., Israel, B., Schulz, A. & Checkoway, B. (1992). Further explorations in empowerment theory: An empirical analysis of psychological empowerment, American Journal of Community Psychology 20: 707-727.

Zimmerman, M. (1995). Psychological Empowerment: Issues and Illustrations, American Journal of Community Psychology 23: 581-599.

Table 1:

Variables	Variables
gender	*living arrangements*
male	**alone**
female®	**Co-residence®**
marital status	*financial dependence*
never married / divorced / separated	**dependent**
widowed	**Partially dependent**
currently married®	**not dependent®**
level of education	*difficulty in mobility*
Illiterate	**severe**
less than ten years of schooling	**partial**
ten or more years of education®	**no difficulty®**
work participation	**chronic cough: having**
not in work force	**chronic cough: not having®**
in work force®	
piles: having	**pain in joints: having**

piles: not having®	pain in joints: not having®
blood pressure: having	urinary problems: having
blood pressure: not known	urinary problems: not known
blood pressure: not having®	urinary problems: not having®
heart disease: having	diabetes: having
heart disease: not known	diabetes: not known
heart disease: not having®	diabetes: not having®
household economic condition	*place of residence*
first quintile	rural
second quintile	urban®
third quintile	
fourth quintile	
fifth quintile®	

® denotes the reference category

Table 2: Parameter estimates for logit regression for exercising agency in case of management of owned assets

Variables	1986-87			1995-96			Change
	effect (b) (p-value)	e^b	95% C.I. for e^b	effect (b) (p-value)	e^b	95% C.I. for e^b	
Intercept	4.22(0.00)			6.18(0.00)			1.96(1.00) ↑
age	-0.03(0.00)	0.97	(0.97, 0.98)	-0.05(0.00)	0.95	(0.94,0.96)	-0.02(0.00)↓
gender							
male	0.69(0.00)	2.00	(1.82, 2.19)	1.13(0.00)	3.09	(2.73, 3.48)	0.43(1.00)↑
female®							
marital status							
never married / divorced / separated	-0.55(0.02)	0.58	(0.36, 0.93)	0.29(0.36)	1.34	(0.72, 2.48)	0.84(0.02)↑
widowed	-0.30(0.00)	0.74	(0.67, 0.83)	-0.08(0.16)	0.92	(0.83, 1.03)	0.22(0.00)↑
currently married®							
level of education							
Illiterate	-0.38(0.00)	0.68	(0.56, 0.84)	-0.23(0.06)	0.79	(0.62,1.01)	0.15(0.82) ×
less than ten years of schooling	-0.28(0.01)	0.76	(0.62, 0.93)	-0.16(0.19)	0.85	(0.67, 1.08)	0.12(0.77) ×
ten or more years of education®							
work participation							
not in work force	-0.84(0.00)	0.43	(0.39, 0.48)	-1.14(0.00)	0.32	(0.28, 0.37)	-0.30(0.00)↓
in work force®							
financial dependence							
dependent	-2.10(0.00)	0.12	(0.11, 0.14)	-1.80(0.00)	0.17	(0.14, 0.19)	0.30(1.00)↑
Partially dependent	-1.45(0.00)	0.24	(0.21, 0.26)	-0.99(0.00)	0.37	(0.32, 0.43)	0.45(1.00)↑
not dependent®							
living arrangements							
alone	0.12(0.01)	1.13	(1.04, 1.23)	0.46(0.00)	1.58	(1.35, 1.85)	0.34(1.00)↑
Co-residence®							
difficulty in mobility							
severe	-0.68(0.00)	0.51	(0.43, 0.59)	-1.68(0.00)	0.19	(0.12, 0.30)	-0.99(1.00)↓
partial	-0.09(0.23)	0.92	(0.80, 1.06)	-0.65(0.00)	0.52	(0.43, 0.64)	-0.56(1.00)↓
no difficulty®							
selected chronic diseases							
chronic cough: having	0.17(0.00)	1.19	(1.09, 1.30)	-0.28(0.00)	0.76	(0.67, 0.85)	-0.45(0.00)↓
chronic cough: not having®							
piles: having	-0.13(0.25)	0.88	(0.70, 1.10)	0.09(0.59)	1.09	(0.79, 1.50)	0.22(0.87)×
piles: not having®							
pain in joints: having	-0.06(0.18)	0.95	(0.87, 1.03)	-0.19(0.00)	0.83	(0.75, 0.92)	-0.13(0.02)↓
pain in joints: not having®							
heart disease: having	0.36(0.00)	1.43	(1.15, 1.78)	-0.03(0.84)	0.97	(0.71, 1.32)	-0.39(0.02)↓

	effect (b) (p-value)	e^b	95% C.I.	effect (b) (p-value)	e^b	95% C.I.	Change
heart disease: not known	0.04(0.64)	1.04	(0.89, 1.22)	0.07(0.48)	1.07	(0.89, 1.29)	-0.03(0.60)×
heart disease: not having®							
diabetes: having	-0.42(0.00)	0.66	(0.51, 0.85)	-0.05(0.75)	0.95	(0.71, 1.28)	0.38(0.97)↓
diabetes: not known	-0.12(0.08)	0.89	(0.78,1.01)	-0.13(0.14)	0.88	(0.74, 1.04)	-0.01(0.47 ×
diabetes: not having®							
blood pressure: having	-0.35(0.00)	0.70	(0.60,0.82)	0.14(0.16)	1.15	(0.95, 1.39)	0.49(1.00)↑
blood pressure: not known	-0.13(0.10)	0.88	(0.76,1.03)	-0.10(0.23)	0.91	(0.77, 1.06)	0.03(0.60 ×
blood pressure: not having®							
urinary problems: having	-0.17(0.11)	0.84	(0.68, 1.04)	-0.22(0.16)	0.80	(0.59, 1.09)	-0.05(0.40)×
urinary problems: not known				0.26(0.00)	1.30	(1.09, 1.54)	
urinary problems: not having®							
household economic condition							
first quintile	-0.06(0.32)	0.94	(0.83,1.06)	-0.48(0.00)	0.62	(0.52, 0.73)	-0.42(0.00)↓
second quintile	0.17(0.00)	1.19	(1.06,1.33)	-0.40(0.00)	0.67	(0.57, 0.79)	-0.57(0.00)↓
third quintile	0.15(0.04)	1.16	(1.01,1.33)	-0.36(0.00)	0.69	(0.59, 0.81)	-0.51(0.00)↓
fourth quintile	0.16(0.01)	1.17	(1.05,1.31)	0.04(0.64)	1.04	(0.88, 1.22)	-0.12(0.12 ×
fifth quintile®							
place of residence							
rural	-0.05(0.32)	0.95	(0.86,1.05)	-0.23(0.00)	0.79	(0.69,0.91)	-0.18(0.02)↑
urban®							
Model χ² (d.f.)				490.61(18)		784.04(18)	
(p-value)				(0.00)		(0.00)	
Deviance R²				0.03		0.04	
χ² for change in coefficients for the two logit models (d.f.) (p-value)	456.41(27) (0.00)						

note: the p-value indicative of the test of the hypothesis that the effect is zero against the alternative that the effect is not zero

®denotes the reference category

d.f. denotes degrees of freedom

Table 3: **Parameter estimates for logit regression for exercising agency in case of management of owned property**

Variables	1986-87			1995-96			Change
	effect (b) (p-value)	e^b	95% C.I. for e^b	effect (b) (p-value)	e^b	95% C.I. for e^b	
Intercept	3.91(0.00)			6.17(0.00)			2.25(1.00) ↑
age	-0.02(0.00)	0.98	(0.97, 0.98)	-0.05(0.00)	0.95	(0.95,0.96)	-0.02(0.00)↓
gender							
male	0.80(0.00)	2.22	(2.05, 2.40)	1.02(0.00)	2.78	(2.48,3.11)	0.23(1.00)↑
female®							
marital status							
never married / divorced / separated	-0.24(0.22)	0.79	(0.54,1.16)	-0.02(0.95)	0.98	(0.58,1.67)	0.22(0.75) ×
widowed	-0.30(0.00)	0.74	(0.68,0.81)	-0.15(0.00)	0.86	(0.77,0.95)	0.15(0.98)↑
currently married®							
level of education							
Illiterate	-0.03(0.77)	0.97	(0.81,1.17)	-0.34(0.00)	0.71	(0.56,0.90)	-0.32(0.02)↓
less than ten years of schooling	0.01(0.94)	1.01	(0.84,1.21)	-0.31(0.01)	0.73	(0.58,0.92)	-0.32(0.02)↓
ten or more years of education®							

work participation							
not in work force	-0.87(0.00)	0.42	(0.38,0.46)	-1.32(0.00)	0.27	(0.213,0.30)	-0.46(0.00)↓
in work force®							
financial dependence							
dependent	-2.03(0.00)	0.13	(0.12,0.14)	-1.69(0.00)	0.18	(0.16,0.21)	0.34(1.00)↑
Partially dependent	-1.37(0.00)	0.25	(0.23,0.28)	-0.91(0.00)	0.40	(0.35,0.46)	0.46(1.00)↑
not dependent®							
living arrangements							
alone	0.14(0.00)	0.16	(1.08,1.24)	0.35(0.00)	1.41	(1.22,1.63)	0.20(0.99)↑
Co-residence®							
difficulty in mobility							
severe	-0.69(0.00)	0.50	(0.44,0.57)	-1.51(0.00)	0.22	(0.14,0.33)	-0.83(0.00)↓
partial	-0.27(0.00)	0.76	(0.68,0.85)	-0.77(0.00)	0.46	(0.38,0.55)	-0.50(0.00)↓
no difficulty®							
selected chronic diseases							
chronic cough: having	0.11(0.00)	1.12	(1.04,1.21)	-0.21(0.00)	0.81	(0.72,0.91)	-0.33(0.00)↓
chronic cough: not having®							
piles: having	-0.02(0.79)	0.98	(0.81,1.17)	-0.14(0.35)	0.87	(0.64,1.17)	-0.12(0.25) ×
piles: not having®							
pain in joints: having	-0.07(0.04)	0.93	(0.87,1.00)	-0.11(0.02)	0.89	(0.81,0.98)	-0.05(0.22)×
pain in joints: not having®							
heart disease: having	0.28(0.00)	1.32	(1.11,1.57)	-0.02(0.92)	0.98	(0.74,1.31)	-0.29(0.04)↓
heart disease: not known	0.04(0.51)	1.05	(0.92,1.19)	-0.03(0.72)	0.97	(0.82,1.15)	-0.08(0.25) ×
heart disease: not having®							
diabetes: having	-0.25(0.03)	0.78	(0.63,0.97)	-0.03(0.83)	0.97	(0.74,1.27)	0.22(0.89) ×
diabetes: not known	-0.21(0.00)	0.81	(0.73,0.91)	-0.17(0.04)	0.85	(0.72,0.99)	0.04(0.66) ×
diabetes: not having®							
blood pressure: having	-0.30(0.00)	0.74	(0.65,0.84))	0.02(0.79)	1.02	(0.86,1.22)	0.32(1.00) ↑
blood pressure: not known	-0.07(0.30)	0.94	(0.82,1.06)	-0.04(0.56)	0.96	(0.82,1.11)	0.02(0.59) ×
blood pressure: not having®							
urinary problems: having	-0.18(0.05)	0.84	(0.70,1.00)	-0.21(0.15)	0.81	(0.61,1.08)	-0.04(0.42)↓
urinary problems: not known				0.32(0.00)	1.38	(1.18,1.62)	
urinary problems: not having®							
household economic condition							
first quintile	-0.09(0.07)	0.91	(0.82,1.01)	-0.55(0.00)	0.58	(0.49,0.68)	-0.45(0.00)↓
second quintile	0.05(0.27)	1.05	(0.96,1.06)	-0.50(0.00)	0.61	(0.52,0.71)	-0.55(0.00)↓
third quintile	-0.01(0.90)	0.99	(0.88,1.11)	-0.35(0.00)	0.71	(0.61,0.82)	-0.34(0.00)↓
fourth quintile	0.01(0.76)	1.01	(0.92,1.12)	-0.05(0.55)	0.96	(0.82,1.11)	-0.06(0.25) ×

fifth quintile®

place of residence								
rural	-0.15(0.00)	0.86	(0.79,0.93)	-0.27(0.00)	0.76	(0.67,0.87)	-0.12(0.06) ×
urban®								
Model χ² (d.f.)			490.61(18)			784.04(18)	
(p-value)			(0.00)			(0.00)	
Deviance R²			0.03			0.04	
χ² for change in coefficients for the two logit models (d.f.) (p-value)	450.27(27) (0.00)						

note: the p-value indicative of the test of the hypothesis that the effect is zero against the alternative that the effect is not zero

®denotes the reference category

d.f. denotes degrees of freedom

Table 4: the odds ratios indicating the gender differences in managing property when conditioned on marital status and managing assets according to the fitted log linear model pertaining to the reference period 1986-87

reference period	managing assets	marital status	odds ratio (managing property)	odds in favour of managing property	odds ratio (older females vs. older males)
1986-87	yes	married	female	31.00	0.31
			male	100.89	
		widowed	female	19.59	0.84
			male	23.31	
	no	married	female	0.05	0.31
			male	0.16	
		widowed	female	0.030	0.84
			male	0.036	

Table 5: the odds ratios indicating the gender differences in managing assets when conditioned on marital status and managing property according to the fitted log linear model pertaining to the reference period 1995-96

reference period	managing property	marital status	odds ratio (managing property)	odds in favour of managing assets	odds ratio (older females vs. older males)
1995-96	yes	married	female	31.19	0.41
			male	75.34	
		widowed	female	22.99	0.65
			male	35.13	
	no	married	female	0.0251	0.41
			male	0.0606	
		widowed	female	0.0184	0.65
			male	0.0283	
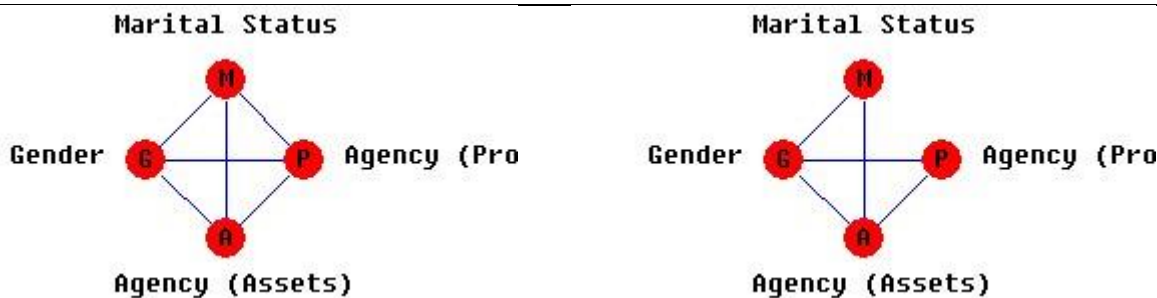
Figure 1: Diagram showing changes in the conditional association structure among gender, marital status, managing assets and managing property for reference periods 1986-87 (left) and 1995 -96 (right)