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Entrepreneurship and Welfare

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Abstract

We examine returns to entrepreneurship using a standard measure of welfare, the per capita consumption expenditure. Using quantile regressions, we find welfare hierarchy in occupations. The results suggest that, across the welfare distribution, entrepreneurs who employ others have the high-test returns in terms of consumption, while those entrepreneurs who work for themselves, that is, self-employed individuals, have slightly lower returns than the salaried employees. However, self-employment entails higher returns than casual labour and an escape from poverty.

Keywords: entrepreneurship, self-employment, welfare, developing countries, quantile regressions

JEL classification: J24, J43, J44, L26

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1 Introduction

There is a rich literature providing insights into the determinants of entrepreneurship and its economic returns.[1] According to the expected utility theory, individuals choose self-employment when they expect higher returns from doing so relative to wage-employment (Rees and Shaw, 1986). In contrast, according to the non-pecuniary benefits theory, people select into entrepreneurship even if the expected returns are lower, in search of non-pecuniary benefits such as being their own boss (Hamilton, 2000). However, entrepreneurs are not a homogenous group of individuals and the type of entrepreneurship engaged in may have a significant effect on the returns.[2]

To date, there has been little research into the nature of entrepreneurship and its economic returns in developing countries. The purpose of this paper is to examine the welfare effects of different types of entrepreneurship in a developing country context. Using a direct measure of welfare, per-capita consumption expenditure, and quantile regressions, this study examines the returns to individuals' occupational choice across the welfare distribution.[3] The results suggest that, across the welfare distribution, entrepreneurs who employ others have the highest returns in terms of consumption, while those entrepreneurs who work for themselves, that is, self-employed individuals, have slightly lower returns than the salaried employees. However, self-employment entails higher returns than casual labor and an escape from poverty.

The structure of the paper is as follows. The next section provides an overview of the theoretical background on occupational choice and welfare and sets out the hypotheses.

[1] See Parker (2004) for a synthesis of this literature.

[2] While some entrepreneurs employ others, the rest are solely self-employed individuals. Thus, the factors that influence the economic returns for entrepreneurs who are employers, may have different effects for the self-employed entrepreneurs.

[3] Most studies use income measures to examine the returns of occupations (Hamilton, 2000). In this paper, we use consumption measures. Income is usually highly correlated with consumption (Browning and Lusardi, 1996). Analyzing the consumption patterns itself has the advantage that variation is not so high as in income data. However, as people with higher incomes are likely to have greater savings, analyzing the consumption patterns for welfare comparisons may make their returns appear flattened to some extent.

The third section discusses the methodology employed in this paper to examine the returns to occupations across the welfare distribution, the quantile regressions. Data and descriptive statistics are presented in the fourth section and the fifth section contains a discussion of the empirical analysis linking occupation and welfare. The paper concludes with a summary of the main findings linking occupation and welfare.

2 Theoretical Background

A key observation of many studies, including Banerjee and Neuman (1993) and, more recently, Dabla-Norris, Gradstein and Inchauste (2008), is the inherent hierarchy of occupational choice according to which the most productive individuals become entrepreneurs, the next best choose self-employment, and the rest become workers or subsistence workers. Dabla-Norris et al. (2008) propose that at equilibrium, the lowest productivity individuals are workers, individuals with intermediate productivity are informal entrepreneurs, and those who are most productive are formal sector entrepreneurs. These theoretical insights have yet to be empirically validated. The possibility of self-employment being worse off in the hierarchy relative to wage workers, as is traditionally assumed to be the case in less developed countries (Ranis and Fei, 1961; Harris and Todaro, 1970), or at least equal in returns, would contest the applicability of these theories to less developed countries(LDCs). The literature on LDCs traditionally identifies self-employment as a distressed residual of people rationed out of jobs in the formal sector, though more recent literature on the nature of the labor market in developing countries is not monolithic on this point. Some scholars believe that the informal sector in LDCs consists of voluntarily self-selected competitive workers as well as disadvantaged individuals (Gindling, 1991; Magnac, 1991; Cunningham and Maloney, 2001; Maloney, 2004; Fields, 2005; Günther

and Launov, 2006).[4]

Occupational choice is generally modeled as a utility maximizing decision of individuals (Lucas, 1978; Kihlstrom and Laffont, 1979).[5] While many models in the economics of entrepreneurship assume that individuals become self-employed as they expect higher returns relative to wage employment (Blau, 1987; Rees and Shaw, 1986; Parker, 1996), the labor and development literature suggests that in the LDC context, people are forced into self-employment in the absence of viable economic opportunities.

However, empirical studies like Hamilton (2000) that focus on developed countries suggest that entrepreneurs may trade lower earnings for the nonpecuniary benefits of business ownership.[6] Evans and Leighton (1989) suggest that individuals who prefer greater autonomy are more likely to be entrepreneurs. Blanchflower and Oswald (1998) show that business owners have greater job satisfaction than paid-employees. According to Boháček (2006), as successful firms grow over time, individuals may enter self-employment even if the returns are lower.

Thus three theories of returns to self-employment choice have emerged. First, the expected utility view claims that individuals choose self-employment when they expect higher returns in self-employment relative to wage-employment. Second, the non-pecuniary benefits view argues that individuals select into entrepreneurship even when the returns are lower, for non-pecuniary benefits such as being one's boss. Finally, the traditional low-productivity view suggests that individuals are compelled into self-employment in the absence of viable economic alternatives.

[4] Pratap and Quintin (2006) argue that there is no evidence of market segmentation in developing country labor markets.

[5] There are two main methods to model the returns of occupational choice. First is to estimate a mincer type wage equation for each occupation. Second is the structural probit method that estimates the reduced form probit and determines the wages corrected for selection. The sign of mill's ratio indicates the nature of selection. The predicted earnings differential are used to re-estimate the probit equation to predict self-employment choice as a function of expected utility (Rees and Shaw, 1986).

[6] Hamilton finds no evidence of the earnings differential being a result of selection of low ability employees into self-employment. Further, he argues that self-employment offers significant nonpecuniary benefits, such as being one's own boss for most entrepreneurs.

We hypothesize that, given the occupational structure of individuals in an economy, the returns to occupations depend on the relative positioning of individuals in the welfare distribution. Self-employed individuals at the lower end of the distribution fundamentally differ from the self-employed individuals in the upper end of the distribution. This is also true for salaried employees. Occupations and their economic returns are characterized by a heterogeneity that is not discernable in studies that examine this relationship solely at the mean. By examining the returns to occupations across the welfare distribution, this paper sets out a novel approach to studying the relative returns to occupations.

We control for a number of other factors that have been found to influence the per-capita consumption of the households. Nelson (1988) shows the existence of economies of scale in all adult households. Such economies of scale are found to be more important in the consumption of shelter and less so in the consumption of clothing and transportation.[7] Furthermore, a vast literature is concerned with equivalence scales in the measurements of welfare for comparisons across households. Households with the same income but different structures, in terms of the number of children and old people, are likely to have different consumption patterns. For instance, Lanjouw and Ravallion (1995, pp 1431-1432) suggest that the relationship between poverty and household size depends on the weight attached to child and adult welfare.[8] Hence we control for the household demographic structure in the analysis.In the Indian context, Dreze and Srinivasan (1997)

[7]Economies of scale have a range of 0 to 1, with 1 indicating no economies of scale, and the measure of welfare considering the economies of scale is equal to per-capita income of the household in this case. We, however, use the standard measure of welfare, per-capita expenditure on consumption. One of the reasons for using the standard measure in the analysis is that although we use all nonagricultural households in the beginning, we restrict the rest of the analysis to those households where the sole economically activate member is the household head. Thus, it is plausible to assume economies of scale close to 1 in such households.

[8]They find evidence against the conventional view that household size is negatively correlated to welfare when Rothbarth method based on non-food spending is used as a measure of welfare while a measure based on child stunting indicates that larger households tend to be poor. Browning (1992) notes though children may be endogenous to whatever we are interested in modeling, this can be circumvented by assuming that fertility is exogenous. See Browning and Crossley (2001) for recent developments in the life cycle model of consumption. More recent way of measuring poverty using perceptions of consumption adequacy are addressed in Pradhan and Ravallion (2000).

find that the poverty head-count ratio is very robust to alternate equivalent scales. We also test the robustness of the results using adult equivalent scales.[9]

There are compelling reasons to hypothesize that female headed households are likely to be poorer. Dreze and Srinivasan (1997), using an earlier survey of India's National Sample Survey Organization(NSSO), also find that households that are female headed are more likely to be poor. Jenkins (2000) finds that changes in labor earnings from persons other than the household head, changes in non-labour income, changes in the earnings of the household head, and household composition are important determinants of the poverty dynamics. For these reasons, although we first analyze all nonagricultural households, we subsequently restrict the analysis to households that have only the household head economically active. Miles (1997) finds that uncertainty, education, and location matter. Using both durable and non-durable goods in the welfare measure, Glewwe (1991) finds high returns to education in urban areas compared to rural areas in Côte d'Ivory.[10] We also examine the returns to occupations in urban and rural areas separately.

3 Methodology

Quantile Regressions

For testing the hypothesis of heterogenous returns of occupation across the welfare distribution, we employ quantile regressions (see Koenker and Hallock, 2001, and references therein). As Hamilton (2000) observes, superstar model of Rosen (1981) suggests that comparison of mean earnings of workers in self-employed sector and in wage sector would be highly influenced by few entrepreneurial superstars. Thus, mean earnings do not really

[9]The results are not reported in the paper but are available on request from the author.

[10]Benito (2006) finds that unemployment risks leads households to defer consumption using British Household Panel. The dataset we have, however, does not allow for such controls. We control for all these factors, other than uncertainty.

characterize the returns of the majority of self-employed. The greatest advantage of using quantile regressions is their ability to show snapshots of relationships across different quantiles of the distribution and not only at the mean. This enables a comparison, for example, between the poorest selfemployed individual with the poorest salaried employee at the lowest quantile and the richest selfemployed individual with the richest salaried employee at the highest quantile.

4 Data

The data used for the analysis comes from the 60th round employment-unemployment survey of the National Sample Survey Organization (NSSO) of India. We only consider those households where the household heads have reported to be self-employed (includes own account workers and employers), salaried employees, casual laborers, and unemployed. We restrict the sample to those who are older than 15 years but younger than 70 years. We then consider only those households who work in nonagriculture. The final sample consists of 26,485 households. In these households, 13,782 households have only the household head economically active.

Table 1 reports summary statistics of the database. The first two data columns report the mean and standard deviation of the variables when the entire database is considered. The third and fourth column report the descriptive statistics when the database is restricted to households that have the household head as the sole economically active member. As the descriptive data on mean consumption expenditure (MPCE) in columns 1 and 3 shows, employers have highest average consumption rate. The self-employed individuals have an consumption rate that is lower than that of salaried employees but it is higher than the consumption rate of the casual laborers.

Figure 1 shows that kernel density plots of log per-capita consumption of households with heads working as self-employed, salaried, employers and laborers. While the distri-

bution plots of salaried employees and employers are to the right of the self-employed, the density of the laborers is centered to their left. Furthermore, the plots show that the inequality observed in the employer group is substantially higher than others.

5 Empirical Results

5.1 Entrepreneurship and Welfare

5.1.1 Household Level Analysis

As Browning and Lusardi (1996, p. 1801) note, "although consumption changes are uncorrelated with anticipated income changes, the actual path of consumption may follow quite closely the actual path of income if the latter displays some persistence." Hence, the consumption and income paths are assumed to be correlated. The empirical strategy is to estimate simultaneous quantile regressions, using the log of per-capita consumption of the household as dependent variable.[11]

The occupations of the members of the household enter the regression as independent variables. A series of controls that are found to influence the consumption of the household by earlier studies are introduced in the estimation. In particular, personal characteristics of the household head, demographics of the household including the proportion of children, adults and old persons, educational background of the members, urban location and land possessed are introduced as control variables.[12] State level dummies are also included to control for regional effects.

[11] Wodon (2000) also uses per-capita consumption. Many alternate strategies to construct welfare measures that are comparable across households exist. For instance, Lazear and Michael (1980) develop a technique that converts families of different structures into single person equivalents. Also see Muellbauer (1974) and Deaton and Muellbauer (1980, 1986) for a theory of equivalence scales. The identification of correct equivalent scales is still an unresolved issue (Deaton and Paxson, 1995).

[12] Land variables proxy the wealth of the household. Wodon (2000) suggests that the land possessed by a household is also a determinant of the welfare. We also check for the robustness of the results with the land variables excluded from the analysis. Given that we have only nonagricultural households in the data set, the problem of endogeneity of the land variables is not an issue.

The results presented in Table 2 suggest that the entrepreneurship has a distinct relationship with welfare.[13] As mentioned earlier, economically active people have one of the five primary occupations. They are either employers, self-employed, salaried employees, casual laborers or unemployed. In this estimation, the left out category for the occupation variables is the proportion of economically active individuals in a household who are self-employed. As the positive coefficients suggest, households that have a higher proportion of employers and those that a higher proportion of salaried employees have higher per-capita consumption levels than self-employed households. However, households that have a higher proportion of casual laborers and unemployed people have lower welfare levels than self-employed households. This suggests the existence of a welfare hierarchy, that is determined by occupational choices of members of the household.

The coefficients of controls variables are in accordance with what might be expected. Households with older household heads are more likely to have higher consumption rates and female headed households are poorer across quantiles. Female headed households are worse off most at the lowest quantile of the distribution. Households with a higher proportion of educated individuals have higher consumption rates and the returns are increasing along the quantiles as well as along higher levels of education. The quantile regression technique enables comparisons of the returns to characteristics at different quantiles of the distribution. In particular, the quantile plots in Figure 2 show that the estimates based on the quantile regression are non-linear, although for the occupational variables the estimates are mostly in 90% confidence intervals of the OLS estimates. As Figure 2 suggests, employers are increasingly better off at higher quantiles than self-employed workers. Salaried employees who are in the middle of the distribution are most different than those at the extreme quantiles relative to the self-employed. At higher quantiles, casual laborers are increasingly worse off than the self-employed, and

[13]The estimates of the inter-quantile regressions are available from the author.

a similar phenomena is observed for the unemployed.[14] Nonlinearities with respect to high school and university education are distinct, so OLS estimates would not have given the right picture. The returns to education are comparatively much higher at higher quantiles. Figure 3 shows the estimates for the other control variables that represent the demographics and the characteristics of the household.

The proportion of children less than 15 years old in the household has a significant negative effect at the lowest two quantiles, but vanishes at higher quantiles. However, the proportion of old people in a household significantly increases the per-capita consumption expenditure. A 1% increase in the proportion of elderly people, increases the per-capita consumption by 18% at the lowest quantile and 38% at the highest quantile. The proportion of females has an insignificant effect in the lower two quantiles but has a significant positive effect at higher quantiles. Thus, at median, a 1% increase in the proportion of females, increases the per-capita consumption by 4.4% and at q(.9), by 9%. The plots of the household size variables show that the relationship between household size and welfare of the household is consistent with earlier studies that households of larger size have a lower per-capita consumption expenditure. However, the household size squared term is positive and increases across quantiles, indicating that households of larger size become worse off along the quantiles, but at decreasing rates. Thus, a convex relationship exists between household size and welfare, with households in the middle of the distribution showing the greatest negative effect of size on per-capita consumption. This could be the result of higher economies of scale at the tails of the income distribution.

5.1.2 Analysis Restricted to Household Heads

One of the main limitations of the analysis of the household level occupation data, is the simultaneous determination of occupation of the household members leading to poten-

[14]However, the unemployed variable slightly moves upward at the highest quantile but remains significantly negative.

tial endogeneity of the occupation variables. Thus, occupation of members of household may not be independent of the occupation of head of the household, in the presence of intra-household dependence of occupation choice. [15] In order to reduce the potential endogenous determination of the occupational choice of the household based on the occupational choice of the household head, we re-estimate the simultaneous quantile regressions for a restricted sample of households that have only the household head as the economically active individual in Table 3. This is more likely to give the pure effect of occupation, and entrepreneurship in particular, on household welfare.[16]

We also drop the unemployed as there are only 90 heads of household who are unemployed. Furthermore as a check for robustness of the results in Table 2, we also control for the industry sector of the individuals in Table 3 as there may be sectoral differences in returns to self-employment.[17] The base category for the occupation variables is "salaried employee". The estimation results are consistent with the estimations of the quantile regressions presented in Table 2. The results presented in Table 3 confirm the welfare hierarchy that the earlier regression suggested. Households headed by employers and salaried individuals have a higher per-captia consumption than households headed by self-employed individuals and casual laborers, after controlling for other factors that influence household welfare. The magnitude of the coefficient of "employer" suggests that households headed by entrepreneurs who employ others have the highest consumption levels. Although the coefficient of salaried employees is positive, it is small, and salaried employees are only slightly better off than those who are self-employed.[18] The casual

[15] A different source of endogeneity may arise as personal characteristics like age and educational background of the household members may determine their occupational choice. However, the main aim of the paper is to examine if a welfare hierarchy of occupations is present across the welfare distribution, conditional on holding individual as well as household characteristics constant. Hence we deal with the second issue in a companion paper using selection models.

[16] An alternate strategy would be to use instrumental variables techniques and instrument for the occupation of the household members using the occupation of the household head. However, as household heads themselves are in the sample and the occupation of their parents is not known, this is not viable.

[17] As the dataset had unemployed people earlier, industry effects could not be controlled.

[18] Hamilton (2000) postulates that lower returns to self-employment may be attributed to individuals choice of freedom leading them to select self-employment.

laborers are last in the hierarchy.

Table 3 suggests that at lower quantiles, informal education has a significant positive effect on the per-capita consumption. The returns to primary school education increase along the quantiles. It is seen that at the lowest quantile, q(.1) primary schooling increases the per-capita consumption of the household by 14%. The coefficient however is higher at the highest quantile, q(.9), where it raises the per-capita consumption of household by 19%. A similar effect is observed for other education variables. If household head has high school education, per-capita consumption expenditure increases by 23% at the lowest quantile and 36% at the highest quantile. Similarly, if the household head has university education, the per-capita consumption of the household increases by 41% at the lowest quantile and 73% increase at the highest quantile. Thus, education has a positive effect on the per-capita consumption and increases as individuals move from the lower to higher quantiles. The returns to technical degree/diploma are also positive and increasing as individuals shift from the lower to the higher quantiles.[19] The estimates of the control variables are in accordance with the hypotheses and are consistent with the estimation in Table 2.

5.1.3 Entrepreneurship, Poverty and Inequality

Per-capita consumption of individuals is predicted after estimating the quantile regression at different quantiles.[20] The cumulative distribution plots of occupation wise predicted values are shown in Figure 4. As the plots suggest, per-capita consumption level is determined by occupation status. Entrepreneurs who are employers have the least probability of being under the poverty line.[21] Households headed by employers are followed by those

[19] As there are very few individuals with technical degrees or diplomas, we merge these into one variable.

[20] The log-inverse transformation of the predicted values gives the value of the normalized per-capita consumption expenditure. These transformed values are used in the poverty and inequality analysis.

[21] The plot does away with the necessity of having a poverty line to examine the poverty status of people based on their occupation and indicates the relative positions of the various occupation groups, in which we are primarily interested.

headed by salaried employees, self-employed and the casual laborers, in that order, at all quantiles. The plot clarifies the status of the self-employed; they appear sandwiched between the salaried employees and the casual laborers. A direct implication of this observation is that, conditional on other characteristics, individuals in the informal sector, primarily comprising of the self-employed and the casual laborers, have lower returns to their occupations. Furthermore, if the dataset is split into formal and informal sectors, with laborers and self-employed in the informal sector and salaried employees and employers in the formal sector, the plots suggest that in both sectors, entrepreneurship in the form of employers in the formal sector and self-employed in the informal sector entails higher relative consumption and an escape from poverty. The Lorenz curves in Figure 5(a) suggest that inequality is highest amongst the households with self-employed head. As the generalized Lorenz curves in Figure 5(b) suggest, the employers group has a distribution preferred by all equity respecting social welfare functions relative to the distributions of the other occupations. This is followed by the distribution of the salaried employees, self-employed people and the casual laborers.

Furthermore, we analyzed occupational choice as a determinant of poverty of households using a probit model. The poverty line was assumed to be given by half the median of per-capita consumption of the household.[22] The results suggest that households headed by employers, self-employed and salaried employees are less likely to be under the poverty line. Households headed by casual laborers are most likely to be under the poverty line, after controlling many characteristics that are likely to influence their poverty status.[23]

[22]Using an alternate poverty line based on the number of adults has not significantly altered the main inferences.

[23]For brevity these results are not reported here but are available from the author.

6 Conclusion

This paper makes important contributions to the literature on the economics of entrepreneurship. We extensively examine the welfare consequences of entrepreneurship in a developing country, an area of study that has received little attention to date.

Using simultaneous quantile regressions, we find that employers, those entrepreneurs who also hire others, have the highest returns in terms of consumption, while the self-employed, those entrepreneurs who work for themselves, have slightly lower returns than the salaried employees. This evidence suggests that self-employment is not a better occupational option relative to salaried employment, a finding that clearly contradicts a key assumption of many theoretical studies including that of Banerjee and Neuman (1993). We do find evidence that the self-employed are more likely to escape poverty, as are salaried employees and entrepreneurs who are employers. The results are robust even after controlling for industrial sectors.

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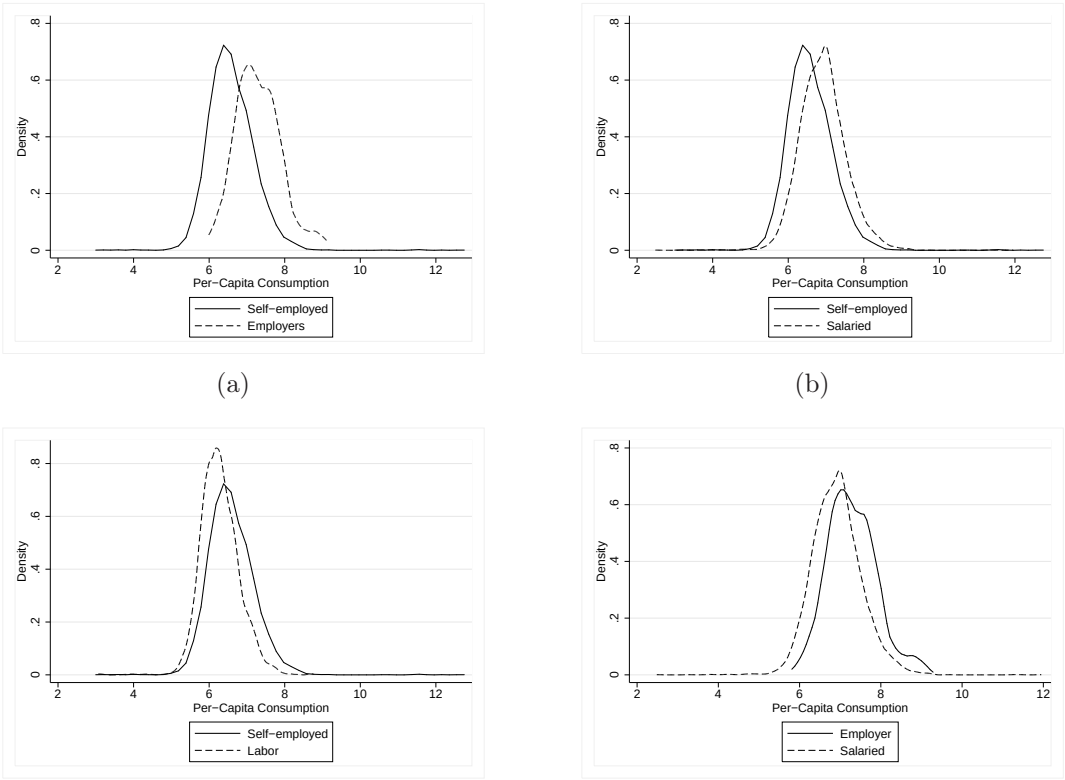
Table 1: Summary Statistics

	Households		Household Heads	
Variables	Mean	SD	Mean	SD
Consumption				
Log(MPCE-All)	6.63	0.63	6.71	0.64
Log(MPCE-Employers)	7.27	0.58	7.29	0.59
Log(MPCE-Salaried)	6.84	0.61	6.92	0.61
Log(MPCE-Selfemployed)	6.52	0.59	6.59	0.60
Log(MPCE-Laborers)	6.25	0.47	6.28	0.50
Occupation				
Self-employed	0.40	0.49	0.37	0.48
Employers	0.01	0.12	0.02	0.12
Salaried Employees	0.42	0.49	0.47	0.50
Laborer	0.16	0.36	0.15	0.35
Unemployed	0.01	0.09	0.01	0.08
Personal Characteristics				
Age	41.96	10.71	38.36	9.69
Female	0.05	0.22	0.05	0.22
Married	0.90	0.30	0.89	0.31
Divorce/Widow	0.05	0.22	0.04	0.20
Education				
Informal Education	0.09	0.28	0.07	0.26
Primary School	0.32	0.47	0.31	0.46
High School	0.26	0.44	0.29	0.45
University Education	0.16	0.37	0.20	0.40
Technical Degree or Diploma	0.07	0.25	0.08	0.27
Household Variables				
Prop. Children (less 5 years)	0.10	0.15	0.12	0.17
Prop. Children (6-10 years)	0.09	0.14	0.11	0.16
Prop. Children (11-15 years)	0.09	0.14	0.10	0.15
Prop. Females (15-60 years)	0.32	0.17	0.30	0.19
Prop. Males (15-60 years)	0.39	0.22	0.37	0.25
Prop. Old (above 60 years)	0.01	0.05	0.01	0.05
Urban	0.59	0.49	0.62	0.49
Land Code 1	0.35	0.48	0.40	0.49
Land Code 2	0.53	0.50	0.52	0.50
Land Code 3	0.09	0.29	0.07	0.25
Land Code 4	0.02	0.15	0.01	0.12
Household Size	4.80	2.31	4.00	1.76
Manufacturing	0.22	0.41	0.21	0.41
Trade	0.21	0.41	0.20	0.40
Service	0.26	0.44	0.27	0.45
Public	0.18	0.38	0.19	0.39
N	26591		14000	

Notes: The first two columns report the mean and standard deviation of variables in the samples. The third and fourth columns report the mean and standard deviation when the sample is restricted to those households where the household head is the only economically active individual.



(a) (b)

(c) (d)

Figure 1: Consumption and Occupation(Un-normalised)

Table 2: Households, Occupation and Consumption

Estimates of Simultaneous Quantile Regression

Independent Var.	q10	q25	q50	q75	q90
Occupation					
Prop. Employers	0.336***	0.342***	0.405***	0.454***	0.461***
	(0.038)	(0.047)	(0.039)	(0.035)	(0.045)
Prop. Salaired	0.0816***	0.0945***	0.0996***	0.0841***	0.0778***
	(0.011)	(0.0081)	(0.0077)	(0.0069)	(0.013)
Prop. Laborers	-0.148***	-0.143***	-0.158***	-0.172***	-0.184***
	(0.012)	(0.011)	(0.010)	(0.012)	(0.016)
Prop. Unemployed	-0.192***	-0.187***	-0.208***	-0.242***	-0.182***
	(0.032)	(0.017)	(0.027)	(0.020)	(0.043)
Head's Characteristics					
Age	0.0164***	0.0162***	0.0184***	0.0204***	0.0163***
	(0.0038)	(0.0019)	(0.0016)	(0.0026)	(0.0050)
Age Square	-0.0163***	-0.0156***	-0.0174***	-0.0193***	-0.0146**
	(0.0042)	(0.0022)	(0.0018)	(0.0032)	(0.0057)
Female	-0.0912***	-0.0896***	-0.0738***	-0.0801***	-0.0573**
	(0.025)	(0.025)	(0.014)	(0.021)	(0.025)
Married	0.0516*	0.0459***	0.0495***	0.0261	0.00218
	(0.028)	(0.017)	(0.016)	(0.025)	(0.031)
Divorce/Widow	-0.0382	-0.0242	-0.0285	-0.0162	-0.0205
	(0.042)	(0.026)	(0.025)	(0.030)	(0.044)
Education					
Prop. Informal Education	0.196***	0.200***	0.220***	0.214***	0.238***
	(0.022)	(0.012)	(0.010)	(0.017)	(0.033)
Prop. Primary School	0.343***	0.344***	0.365***	0.381***	0.422***
	(0.021)	(0.014)	(0.013)	(0.017)	(0.024)
Prop. High School	0.565***	0.602***	0.661***	0.704***	0.758***
	(0.024)	(0.017)	(0.018)	(0.019)	(0.028)
Prop. University Education	0.958***	1.072***	1.187***	1.335***	1.519***
	(0.019)	(0.020)	(0.020)	(0.032)	(0.031)
Prop. Technical Degree	0.190***	0.235***	0.253***	0.281***	0.305***
	(0.020)	(0.017)	(0.033)	(0.038)	(0.035)
Demographics					
Prop. Children (less 5 years)	-0.133***	-0.0732***	-0.0156	0.00982	0.0198
	(0.025)	(0.023)	(0.032)	(0.027)	(0.053)
Prop. Children (6-10 years)	-0.125***	-0.0638**	0.0116	0.0301	0.0981*
	(0.036)	(0.025)	(0.028)	(0.037)	(0.052)
Prop. Children (11-15 years)	-0.140***	-0.0941***	-0.0601*	-0.0500*	-0.0402
	(0.035)	(0.022)	(0.032)	(0.027)	(0.048)
Prop. Females (15-60 years)	0.000581	0.0323	0.0442**	0.0604**	0.0900**
	(0.020)	(0.021)	(0.018)	(0.025)	(0.039)
Prop. Old (above 60 years)	0.188***	0.196***	0.212***	0.336***	0.383***
	(0.067)	(0.041)	(0.060)	(0.082)	(0.11)
Household Characteristics					
Urban	0.232***	0.233***	0.258***	0.277***	0.281***
	(0.0078)	(0.0044)	(0.0065)	(0.0066)	(0.0100)
0.2< Land <0.4 Hectares	0.0415***	0.0341***	0.0288***	0.0230**	0.0327***
	(0.0086)	(0.0059)	(0.0072)	(0.0091)	(0.013)

continued on next page...

Table 2: (*continued*)

Independent Var.	q10	q25	q50	q75	q90
0.4< Land < 2 Hectares	0.0763***	0.0594***	0.0430***	0.0439***	0.0518**
	(0.015)	(0.011)	(0.013)	(0.017)	(0.021)
Land > 2 Hectares	0.127***	0.126***	0.148***	0.147***	0.173***
	(0.018)	(0.022)	(0.027)	(0.016)	(0.030)
Household Size	-0.118***	-0.140***	-0.162***	-0.184***	-0.206***
	(0.0045)	(0.0049)	(0.0048)	(0.0080)	(0.0086)
Householdsize Square	0.00447***	0.00578***	0.00686***	0.00838***	0.00985***
	(0.00029)	(0.00029)	(0.00032)	(0.00062)	(0.00064)
Region Controls					
North & East States					
Punjab	0.162***	0.109***	0.0714***	0.0571***	0.0433
	(0.013)	(0.021)	(0.015)	(0.022)	(0.037)
Delhi	0.184***	0.180***	0.135***	0.0970***	0.0604**
	(0.016)	(0.024)	(0.021)	(0.021)	(0.030)
Rajasthan	0.0802***	0.0535***	-0.00930	-0.0596***	-0.102***
	(0.019)	(0.012)	(0.015)	(0.012)	(0.036)
Uttar Pradesh	-0.0687***	-0.0729***	-0.103***	-0.130***	-0.149***
	(0.011)	(0.0096)	(0.0073)	(0.014)	(0.018)
Bihar	-0.171***	-0.197***	-0.257***	-0.281***	-0.330***
	(0.018)	(0.016)	(0.016)	(0.019)	(0.019)
Manipur	0.0381	-0.0538***	-0.126***	-0.195***	-0.265***
	(0.032)	(0.018)	(0.013)	(0.019)	(0.034)
Assam	-0.0702***	-0.0766***	-0.111***	-0.159***	-0.221***
	(0.025)	(0.019)	(0.014)	(0.012)	(0.021)
West Bengal	-0.0712***	-0.0617***	-0.106***	-0.132***	-0.160***
	(0.012)	(0.013)	(0.0079)	(0.0080)	(0.020)
Orissa	-0.310***	-0.328***	-0.324***	-0.343***	-0.352***
	(0.020)	(0.013)	(0.015)	(0.020)	(0.018)
Central & West & South States					
Chhattisgar	-0.163***	-0.202***	-0.254***	-0.231***	-0.243***
	(0.028)	(0.015)	(0.019)	(0.028)	(0.051)
Madhya Pradesh	-0.218***	-0.209***	-0.227***	-0.262***	-0.292***
	(0.023)	(0.019)	(0.012)	(0.018)	(0.028)
Gujrat	0.118***	0.124***	0.0822***	0.0212*	-0.0526***
	(0.022)	(0.017)	(0.011)	(0.013)	(0.014)
Maharastra	-0.0118	-0.0174	-0.0281**	-0.0335*	-0.0493**
	(0.015)	(0.013)	(0.012)	(0.020)	(0.022)
Karnataka	-0.0671***	-0.0749***	-0.117***	-0.130***	-0.150***
	(0.018)	(0.015)	(0.012)	(0.014)	(0.026)
Kerala	0.0381	0.0830***	0.0664***	0.0711***	0.0981***
	(0.026)	(0.019)	(0.016)	(0.018)	(0.032)
Tamil Nadu	-0.143***	-0.126***	-0.154***	-0.148***	-0.146***
	(0.014)	(0.017)	(0.012)	(0.011)	(0.020)
Constant	5.726***	5.963***	6.181***	6.443***	6.807***
	(0.069)	(0.030)	(0.038)	(0.041)	(0.094)
Observations	26485	26485	26485	26485	26485

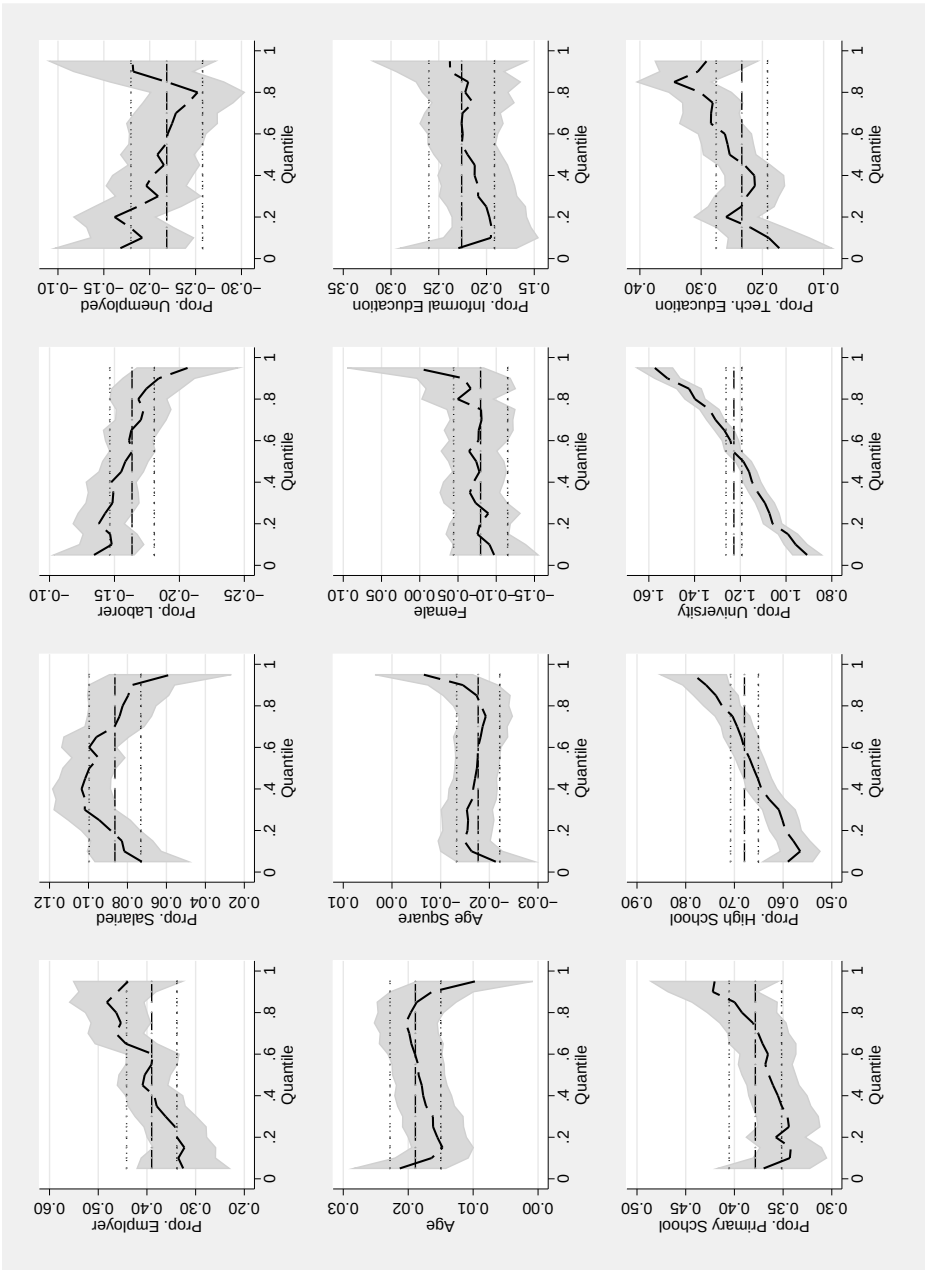


Figure 2: Quantile Plots-Households

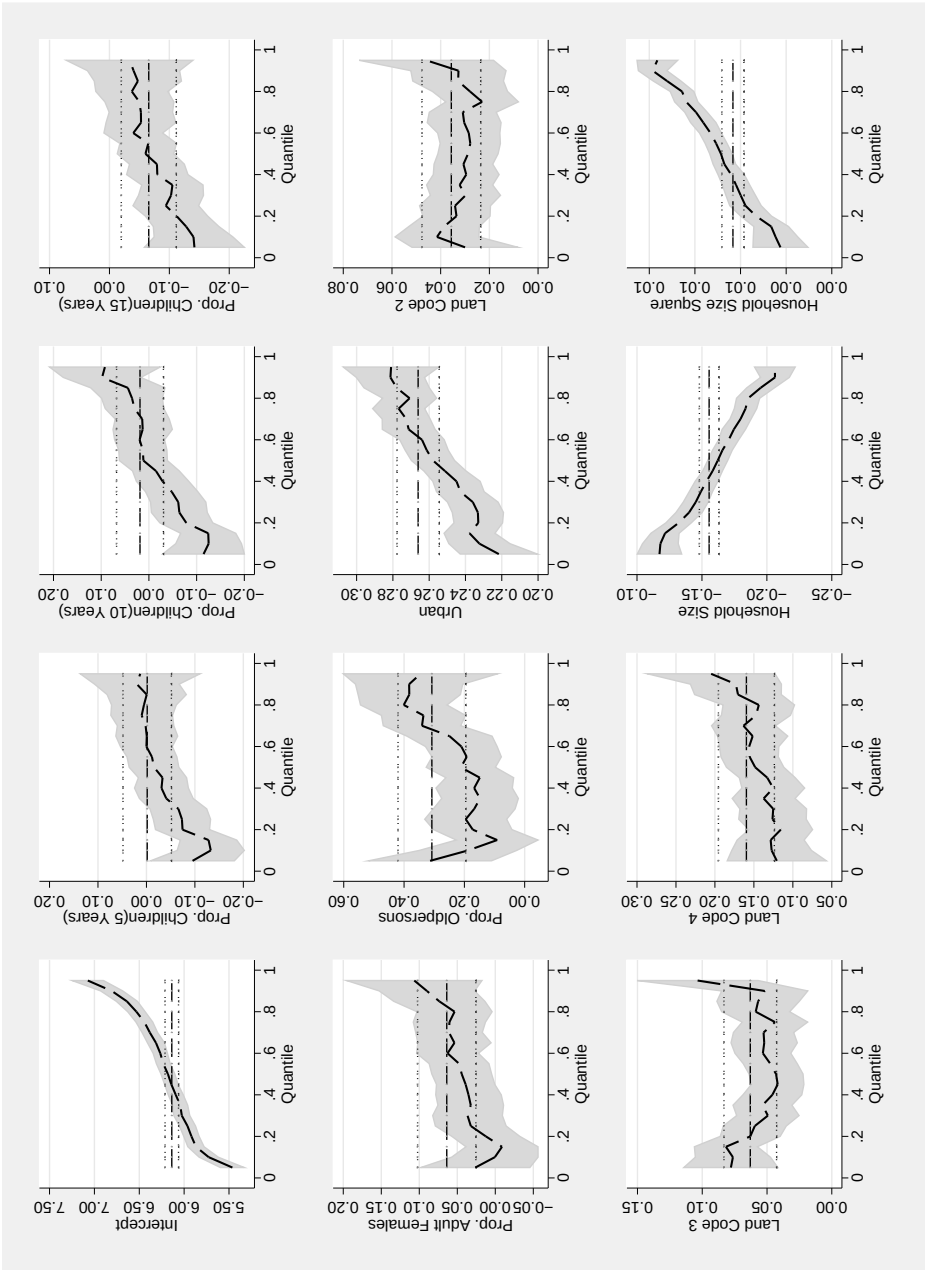


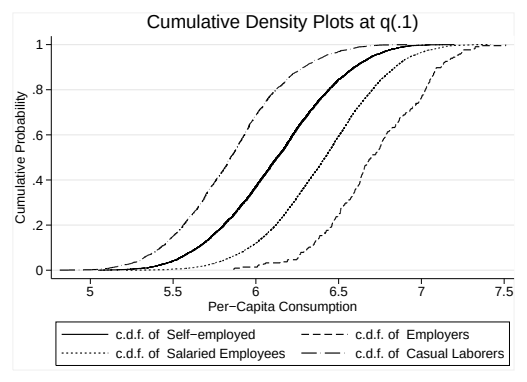
Figure 3: Quantile Plots-Households (continued)

Table 3: Household Heads, Occupation and Consumption

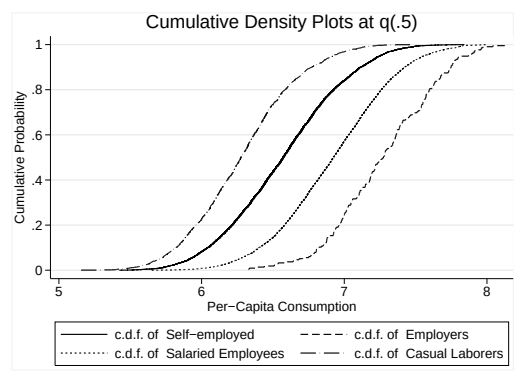
Estimates of Simultaneous Quantile Regression

Independent Var.	q10	q25	q50	q75	q90
Occupation					
Self-employed	-0.0491***	-0.0579***	-0.0631***	-0.0564***	-0.0225
	(0.013)	(0.012)	(0.012)	(0.012)	(0.019)
Employer	0.224***	0.226***	0.258***	0.252***	0.306***
	(0.058)	(0.044)	(0.037)	(0.077)	(0.069)
Laborer	-0.228***	-0.229***	-0.246***	-0.225***	-0.203***
	(0.016)	(0.017)	(0.012)	(0.019)	(0.018)
Personal Characteristics					
Age	0.0340***	0.0324***	0.0395***	0.0405***	0.0282***
	(0.0047)	(0.0039)	(0.0039)	(0.0043)	(0.0066)
Age Square	-0.0371***	-0.0329***	-0.0409***	-0.0399***	-0.0240***
	(0.0061)	(0.0050)	(0.0048)	(0.0051)	(0.0083)
Female	-0.0144	-0.0296	-0.0653	0.0125	0.0811
	(0.035)	(0.031)	(0.043)	(0.041)	(0.060)
Married	-0.0301	-0.0312	-0.0321	-0.0658***	-0.0435
	(0.037)	(0.021)	(0.029)	(0.022)	(0.053)
Divorce/Widow	-0.212***	-0.233***	-0.176***	-0.220***	-0.184**
	(0.037)	(0.034)	(0.042)	(0.034)	(0.075)
General Education					
Informal Education	0.0479*	0.0390**	0.0219	0.0339*	0.0233
	(0.027)	(0.019)	(0.025)	(0.018)	(0.024)
Primary School	0.142***	0.146***	0.137***	0.172***	0.191***
	(0.018)	(0.013)	(0.018)	(0.018)	(0.016)
High School	0.235***	0.268***	0.292***	0.341***	0.361***
	(0.017)	(0.014)	(0.016)	(0.015)	(0.017)
University Education	0.413***	0.483***	0.559***	0.640***	0.732***
	(0.025)	(0.015)	(0.019)	(0.023)	(0.022)
Technical Degree or Diploma	0.170***	0.180***	0.169***	0.191***	0.235***
	(0.021)	(0.015)	(0.016)	(0.017)	(0.024)
Demographics	YES				
Household Characteristics	YES				
Region Controls	YES				
Sector Controls	YES				
Constant	5.773***	6.081***	6.237***	6.478***	6.923***
	(0.085)	(0.071)	(0.072)	(0.068)	(0.12)
Observations	13692	13692	13692	13692	13692

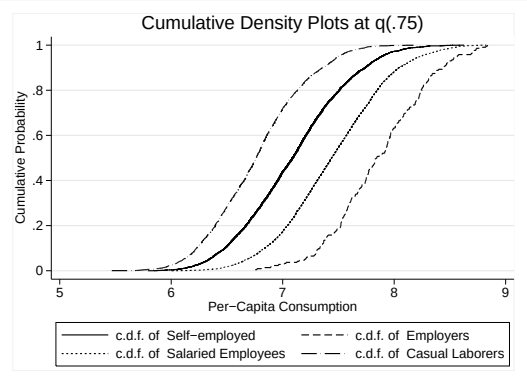
Notes: *Signifies p< 0.05; ** Signifies p<0.01;*** Signifies p<0.001. Standard errors are reported in parentheses. Dependent variable is log per-capita consumption expenditure. Base categories for occupation is salaried employee, for marital status is unmarried, for general/technical education is no general/technical education. Full set of state level regional dummies are also included in the regression with the excluded state being Andhra Pradesh.



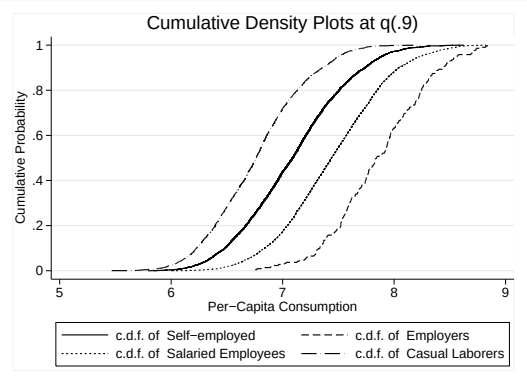
(a) Normalised Poverty Plots



(b) Normalised Poverty Plots



(c) Normalised Poverty Plots



(d) Normalised Poverty Plots

Figure 4: Occupation and Poverty Plots

(a)

(b)

Figure 5: Occupation and Inequality Plots at Median