DO DEMOGRAPHIC FACTORS EXPLAIN INEQUALITY IN CONSUMPTION EXPENDITURE IN PAKISTAN? NEW EVIDENCE FROM QUANTILE REGRESSION ANALYSIS

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Abstract

The objective of this study is to investigate the significance of demographic factors (gender, age, education, family size, occupation, region of residence) on consumption expenditure inequality. We attempt to decompose inequality and find the factors, characteristics and region that may cause inequality using Pakistan Social and Living Standards Measurement Survey (PSLM). Quantile regression is used to find the effects of different characteristics on per capita real monthly expenditures at different quantiles for the years 2005-06. Household size shows negative relation with expenditures in general as well as in urban and rural areas for all quantiles. Age, female headed households, agriculture, high skilled occupations and higher education have positive effects on per capita real consumption expenditure.

Keywords: Inequality, Living Standard, Quantile Regression, Consumption.

JEL Classification: Z000

Introduction

Income inequality has long been a topic of discussion particularly in relation to economic growth. The theories related to income inequality and economic growth have also been severely scrutinized and criticized (see, for example, Piketty, 2014). However, with the work of Paglin (1975) and Kuznets (1976), demographic factors have started receiving greater attention. Both of them examined the effect of household size (positively associated with household income) and the age of the household head (related to household income in an inverted U-shaped curve) on household

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income inequality (Heerink, 1993). Kuznets (1976) shows how inequality first rises with the process of development and then starts falling. Kuznets' hypothesis is also used to explain regional and inter-industry inequality in wages. Mincer (1958) and later Becker (1962) develop the theory of human capital and show how skill formation, schooling, and training explain male-female wage differential as well other inequalities in the society. Therefore, household size, age of the household head, education, occupation, industry, and region have strong theoretical link with income inequality as explained above. Mierau and Rockey (2015) suggest that demographic factors perpetuate the trend in income and wealth inequality.

Inequality has been one of the central issues in Pakistan since its independence from the British colonial rule in 1947. A number of attempts has been made to examine income or consumption inequality in Pakistan (see, for example, Naseem, 1973; Adams, 1993; Haq, 1998; Anwar, 2004, 2005; Idrees, 2007).

The empirical literature shows that income and consumption inequality have different trends in Pakistan. Gini shows relatively equal distribution of consumption among individuals in all areas for the years 1979 to 1992-93 but it is higher in urban areas (Haq, 1997). The study shows that there is reduction in income inequalities in 1960s but the distribution of income deteriorated in 1970-79. In 1988 again inequality worsened due to inflation and slow growth rate (Hasan, 1997).

Consumption inequality has increased in Pakistan during 2001-2005 with the same trend in urban and rural areas. Increase in Gini coefficient is larger in rural areas as compared to urban areas (Anwar, 2009). Gini coefficient of consumption for both urban and rural areas in Pakistan has decreased in the years 1998-99 to 2001-02. During 2001-2005, there is an increase in rural inequality but inequality remains urban phenomenon.

Inequality in urban areas has a higher proportion to add in overall inequality (Ali & Saboor, 2010). The paper shows that initially income inequality has an increasing trend during 1966-67, but it declined in late 1960s in Pakistan. In 1970s inequality followed an increasing trend which later on declined till the late 1980s. Income inequality increased quickly in 1990 and then declined till 1996-97. However, the inequality was higher between 1996-97 and 1998-99, turning 1998-99 as the most unequal distribution in Pakistan (Anwar, 2007).

Nasim (1973) estimated the Gini coefficient to find income inequality in Pakistan for 1962-63, 1996-67, 1968-69 and 1969-70. The study found that the inequality was higher in urban areas as compared with rural areas, using individual and household unit of analysis. The inequality has an increasing trend during 19963-64 and 1966-67 and after that it decreased.

Ahmed and Ludlow (1989) examined the trends in consumption inequality applying the Gini coefficient, Lorenz curve, coefficient of variation, Atkinson index and logarithmic variance for the

period 1979 and 1984-85 at individual and household level. The study reveals that all of the inequality measures showed an increase in inequality.

Anwar (2003) estimated Lorenz curve and the Gini coefficient to find consumption inequality trends in inequality for Pakistan for the years 1998-99 and 2001-02. The study showed a rise in inequality in Pakistan. However, at the regional level inequality situation is different. In rural area it increased while it decreased in urban area.

Idrees (2007) examined income and consumption inequality for the period of 1992-93, 1996-97, 1998-99 and 2001-02. The study found higher inequality in Pakistan based on income and consumption but consumption inequality level less than income inequality. It was more severe in urban areas as compared to rural areas.

Anwar (2009) estimated the Gini coefficient using the Household Income and Expenditure Survey data for the period from 2001-02 to 2004-05 and results showed an increased inequality in Pakistan. The study also indicated that it was higher in urban areas as compared with rural areas.

Decomposition of inequality is important to find the factors, characteristics and region that may cause inequality to rise. Kruijk and Leeuwen (1985), Kruijk (1986 & 1987) have estimated decomposition of income inequality with respect to different factors as number of earners, regions, labor and non labor income.

Idrees and Ahmad (2010) decomposed consumption inequalities with respect to food, health, education and housing. It is generally observed that level of consumption inequality is less than the level of income inequality (Idrees, 2007).

Income inequality in Pakistan has increased significantly in the last eight years and the trend continues irrespective of all claims of its reduction (Bukhari & Haq, 2008). Therefore, it is useful to estimate level of consumption inequality and factors affecting inequality. “Occupation and education are the most visible factors that perpetuate inequality inter-generationally across social classes” (Sugimoto, 2005)

The rest of the paper is organized as follows: section 2 introduces the data and methodology, section 3 discusses the results in comparison with other studies, and the last section concludes with policy implications.

Data and Methodology

Data

The main source of data on household economic activity in Pakistan is the Pakistan Social and Living Standards Measurement Survey (PSLM) compiled and published by the Federal Bureau of Statistics (FBS), Government of Pakistan. It is a questionnaire based survey which covers more than 14,000 households and provides fairly detailed information on consumption expenditures of the country. Micro level data for the period of 2005-06 are used on household head's age, age square, gender, occupation, education, industry and economic activity.

Variable Description

Log of real monthly per capita consumption expenditures (LRMPCE) is the dependent variable.
Independent variables are

Table 1
I*ndependent variables*

Variable	Description
Age of the Household Head	
Gender	1 if female others=0
Occupation	
High Skilled	high skilled=1, others=0 (included occupation in high skill category are professional, technical, and managerial)
Medium Skilled	medium skilled=1,others=0 (included occupation in medium skill category are clerical and sales occupation)
Education	
Below Primary	below primary=1, others=0
Primary	primary=1 others=0
Middle	middle=1, others=0
Secondary	secondary=1, others=0
Higher	higher=1 others=0
Industry	
Agriculture	Agriculture=1, others=0
Manufacturing	Manufacturing industry=1, others=0
Modern services	Modern services=1 others=0 (included sectors are Finance, Insurance, real estate, scientific, research, health, medical).
Traditional services	Traditional services=1, others=0 (wholesale, retail trade, personal services, Hotels/restaurants are included in traditional services)
Urban	1 if Urban, otherwise =0

Methodology

The classic Quantile Regression (QR) model, presented by Koenker and Bassett (1978), could be regarded as an extension of Ordinary Least Squares (OLS). As OLS estimates show the predictor variables are related to the conditional mean value of the dependent variable while QR allows the researchers to model the predictors against the conditional median (50th quantile) or various conditional quantiles (for example, 25th, 50th, 75th quantiles) of the dependent variable. Hence, QR is more appropriate when the distribution of a dependent variable is likely to be skewed like the distributions of consumption or income. The benefit of quantile regression is to find the factors that affect consumption expenditures on low and high quantiles. The main purpose of quantile regression is to minimize the weighted sum of absolute residuals. Different percentiles of the dependent variables can be estimated and it is also possible to use different independent variables for different quantiles (Deaton,1997; Litchfield, 1999; Bargani et al., 2009; Caglayan & Astar, 2012; Yang et al., 2013).

Litchfield (1999) suggests that quantile regression technique estimates the mean of a dependent variable conditional on the values of the independent variables. It minimises the sum of the absolute residuals rather than the sum of squares of the residuals as in ordinary regressions. He further states that different percentiles of the dependent variables can be estimated and it is also possible to use different independent variables for different quantiles, reflecting the view that data may be heteroskedastic with different factors affecting the rich and the poor.

A quantile regression gives more comprehensive picture of the independent variables on the response variable. The quantile regression estimates the change in response variable that is due to one unit change in the independent variable in a specified quantile (Holubowicz & Muczynski, 2011). According to Sinha (2005) the quantile regression is considered better estimate due to the following good features:

- A quantile regression model makes estimation easy because it has linear programming representation.
- These models can be used to characterize the entire distribution of a dependent variable for a given set of regressors.
- Quantile regression takes into account the weighted sum of absolute deviations (residuals). Due to this fact the estimated coefficient is not sensitive to the outlier observations of the dependent variable.
- Even if the distribution of error term is not normal, quantile regression estimators are more efficient than least square estimators. Moreover, QR is better when residuals are heterscedastic.
- If data are contaminated, quantile regression is more stable than mean regression.

Quantile Regression (QR) Model

In QR the usual linear model is used[3]:
Simple equation

$$ln(Y_i) = \beta_0^{(p)} + \beta X_i^{(p)} + \epsilon_i^{(p)} \quad \text{.....(1)}$$

Estimation is focussed around the quantiles so these are labelled as p
Quantile equation

$$ln(Y_i) = \beta_0 + \beta X_i + \varepsilon_i \quad \text{.....(2)}$$

Where ln is log, the subscript i refer to the household, Y refers to the per capita consumption expenditures of the household, and X is a vector of explanatory variables that includes all relevant household characteristics and β is the vector of slope coefficient. p stands for quantiles. These characteristics include the household head's age, age squared, a dummy variable for gender, and dummy variables for educational attainment; dummy variables for the industry and occupation containing the main economic activity of the household.

Results and Discussion

Quantile regression is used to check the consumption expenditure patterns on low and high quantiles. Household head education is included as below primary, primary, middle, secondary and higher while the omitted category is illiterate[4]. We also categorized industries into agriculture, manufacturing, modern services and traditional services, while non-manufacturing is treated as the omitted category. In occupation we have taken high skilled and medium skilled, while low skilled is taken as an omitted category[5]. The results of regression analysis are presented in the following table:

Table 2
Quantile Regression Results for 2005-06:
Dependent variable: Log Per Capita Real Monthly Consumption Expenditures

Variables	Q 20 th	Q 40 th	Q 60 th	Q 80 th
H H size	-0.0338* (0.0009)	-0.0348* (0.0009)	-0.0332* (0.0010)	-0.0328* (0.0017)
Age	0.0052* (0.0003)	0.0057* (0.0003)	0.0056* (0.0002)	0.0063* (0.0004)

(Table Continued...)

[3] Simple and quantile equations are taken from Hao and Naiman, 2007: p. 23 (Eq. 3.1 and Eq 3.2)
[4] Below primary consists grades 1-4 Primary 5, middle school of grades 6–8, secondary school of grades 9–10, high school of grades (undergraduate or graduate).
[5] [high skilled (professional, technical and managerial) , medium skilled (clerical and sales occupation) , low skilled (agriculture, production and service workers),]

Gender				
Female	0.0327*** (0.0176)	0.0342** (0.0177)	0.0329** (0.0164)	0.0443** (0.0229)
Occupation				
High skilled	0.0366* (0.0125)	0.0380* (0.0122)	0.0685* (0.0112)	0.1119* (0.0157)
Medium skilled	0.0213* (0.0051)	0.0205* (0.0050)	0.0222* (0.0046)	0.0238* (0.0065)
Industry				
Agriculture	0.0139 (0.0145)	0.0404* (0.0139)	0.0457* (0.0126)	0.0654* (0.0176)
Manufacturing	0.0386* (0.0081)	0.0544 * (0.0081)	0.0593* (0.0074)	0.0619* (0.0103)
Modern services	0.0166* (0.0033)	0.0145* (0.0032)	0.0156* (0.0029)	0.0060*** (0.0040)
Traditional services	0.0054** (0.0027)	0.0106* (0.0026)	0.0118* (0.0024)	0.0173* (0.0034)
Education Level				
Below primary	0.0029 (0.0108)	0.0052 (0.0106)	0.0136*** (0.0094)	-0.0108 (0.0132)
Primary	0.0075 (0.0067)	0.0103*** (0.0065)	0.0052 (0.0059)	-0.0076 (0.0083)
Middle	0.0197* (0.0052)	0.0212* (0.0050)	0.0220* (0.0045)	0.0169* (0.0063)
Secondary	0.0231* (0.0039)	0.0263* (0.0038)	0.0271* (0.0034)	0.0230* (0.0049)
Higher	0.0399* (0.0034)	0.0468* (0.0033)	0.0514* (0.0029)	0.0544* (0.0041)
Urban	0.1273* (0.0071)	0.1378* (0.0075)	0.1460* (0.0073)	0.1595* (0.0095)
Constant	2.7074* (0.0263)	2.7642* (0.0271)	2.8545* (0.0245)	2.9727* (0.0349)
Pseudo R2	0.169	0.189	0.2088	0.2297

(Note) (i) *,**,*** indicate significance at the level 1%, 5% and 10%, respectively (ii) Numbers in parentheses are standard errors. (iii) Numbers of observations=7040

Table 2 shows the regression results. Overall, the equation performs quiet well. The pseudo-R2 ranges from 0.16 to 0.23 that may not be unreasonable given the higher variation of the cross-sectional analysis. The pseudo-R2 is a local measure of goodness of fit for the quantile regression. It measures goodness of fit by comparing the sum of weighted deviations for the model with the same sum from a model in which only the intercept appears (Koenker & Machado, 1999). The results present the 20th, 40th, 60th and 80th quantiles. The coefficients of most of the independent variables have the expected sign and almost all coefficients are highly significant. The significant factors include the household characteristics. Household size is negatively but significantly associated with per capita expenditures which mean that an additional member lowers the per capita expenditures of the household at 20th, 40th, 60th and 80th quantiles by 3.6, 3.4, 3.3 and 3.2 percent respectively. It indicates that as the household size increases, it makes the household poorer. This

finding is in line with Pomfret (2005) and Litchfield and McGregor (2008), who find that per capita expenditures become lower with an additional member in Kyrgyz and Tanzania.

Age of the household head has a positive and highly significant effect on household expenditure. When other variables fixed, 1-year increase in household heads' age, increases the consumption expenditure by 0.52, 0.57, 0.56 and 0.63 percent at the respective quantiles. The same results are given by Litchfield and McGregor (2008) and Caglayan and Astar (2012).

The findings show that expenditures for female are increasing by 3.27, 34.2, 3.29 and 4.43 percents at all quantiles. Occupation has also positive effects on per capita expenditure. The same findings are observed by Caglayan and Astar (2012) for Turkey.

The consumption expenditures of high skilled occupation expenditures are more than medium skilled occupations. High skilled occupation raises expenditures at all quantiles by 3.6, 3.8, 8.8 and 11.1 percent respectively. It indicates that high skilled heads have more expenditures and thus their welfare is higher than medium skilled households.

The consumption expenditures for industry show that it is also positively correlated with log of per capita expenditures but expenditure of manufacturing industry are higher than other industries and this is highly significant. The expenditures of manufacturing industry increase by 3.8, 5.4, 5.9 and 6.1 percent at respective quantiles. The education variable (below primary, primary, middle, secondary and higher education) affects consumption expenditure pattern as expected; the education of the household head at middle, secondary and higher level is positively correlated with expenditure per person, and the effects are significant for most of the selected quantiles. But the per capita expenditures are higher among those households' heads that have higher education; it increases expenditures by 3.9, 4.6, 5.1 and 5.4 percent in 20th, 40th, 60th and 80th quantiles. This is favoured by Maitra and Vahid (2006) for South Africa. Urban households have positive and significant effect on per capita expenditures.

There may be differences in household consumption for urban and rural areas. That is why quantile regressions are estimated separately for urban and rural areas in order to determine the factors affecting consumption expenditures.

Table 3
Quantile Regression Results for 2005-06 (Rural)
Dependent variable: Log Per Capita Real Monthly Consumption Expenditures

Variables	Q 20th	Q 40th	Q 60th	Q 80th
H H size	-0.0268*	-0.0256*	-0.0237*	-0.0231*
	(0.0009)	(0.0011)	(0.0015)	(0.0023)
Age	0.0038*	0.0040*	0.0040*	0.0034*
	(0.0003)	(0.0003)	(0.0004)	(0.0005)
Gender				
Female	0.0394**	0.0527*	0.0625*	0.0595**
	(0.0201)	(0.0203)	(0.0242)	(0.0285)
Occupation				
High skilled	0.0113	-0.0141	-0.0146	0.0541**
	(0.0168)	(0.0168)	(0.0202)	(0.0246)
Medium skilled	0.0196*	0.0169*	0.0183*	0.0306*
	(0.0070)	(0.0070)	(0.0083)	(0.0098)
Industry				
Agriculture	0.0654*	0.0736*	0.0897*	0.1096*
	(0.0155)	(0.0156)	(0.0185)	(0.0216)
Manufacturing	0.0182***	0.0120	0.0114	0.0267***
	(0.0115)	(0.0117)	(0.0139)	(0.0162)
Modern services	0.0171*	0.0157*	0.0150*	0.0136**
	(0.0048)	(0.0048)	(0.0057)	(0.0066)
Traditional services	0.0079*	0.0086*	0.0119*	0.0135*
	(0.0033)	(0.0033)	(0.0040)	(0.0048)
Education Level				
Below primary	-0.0069	0.0030	0.0094	-0.0088
	(0.011)	(0.0116)	(0.0138)	(0.0161)
Primary	0.0036	0.0074	0.0069	-0.0071
	(0.0072)	(0.0073)	(0.0087)	(0.0100)
Middle	0.0159*	0.0173*	0.0188*	0.0198*
	(0.0056)	(0.0057)	(0.0068)	(0.0079)
Secondary	0.0155*	0.0227*	0.0252*	0.0193*
	(0.0043)	(0.0043)	(0.0052)	(0.0060)
Higher	0.0264*	0.0333*	0.0368*	0.0312*
	(0.0039)	(0.0039)	(0.0046)	(0.0054)
Constant (cons.)	2.6295*	2.7058*	2.7670*	2.99206*
	(0.0273)	(0.0280)	(0.0338)	(0.0403)
Pseudo R2	0.1132	0.1185	0.1270	0.1174

(i) *, **, *** indicate significance at the level 1%, 5% and 10%, respectively (ii) Numbers in parentheses are standard errors. (iii) Numbers of observations=3518

Table 3 provides the information on rural demographic characteristics and confirms that age, gender, agriculture and education play an important role in rural areas. When we look at the results of rural area estimates, we can see that the effect of household size on consumption expenditures

decreases in the upper quantiles (approximately from 26 to 23 percent). Age is found to be significantly and positively affecting the consumption expenditures. One year increase in age, increases expenditures, by 0.38, 0.40, 0.40 and 0.34 percent at 20th, 40th, 60th and 80th quantiles respectively. Female headed household increases consumption expenditures to 3.9, 5.2 and 6.2 percent at 20th, 40th and 60th quantiles respectively but this difference rises to 5.9 percent at 80th quantile in rural areas of Pakistan. Consumption expenditures are higher among female headed households.

The Consumption expenditures of high skilled occupation show a decrease in expenditure by 1.4 and 1.5 percent at 40th and 60th quantile but it stands positive at 20th and 80th quantile (1.1 and 5.4 percent increase in consumption). While the effect of medium skilled occupations on consumption expenditures is increasing and it raises consumption by 1.9, 1.6, 1.8 percent and 3.0 percent at 20th, 40th, 60th and 80th quantiles in rural areas. Agriculture sector affects per capita expenditures positively and its coefficients are highly significant. Agriculture increases the consumption expenditures by 6.5, 7.3 and 8.9 percent at 20th, 40th and 60th quantiles but increase in consumption at 80th quantile is higher (10.9 percent). The same finding is confirmed by Nguyen et al, (2006) for Vietnam. As compared to other sectors expenditures are higher in agriculture sector as compared to manufacturing, modern and traditional services. Employment in manufacturing sector is less in rural areas than in urban areas and this is confirmed by Chamarbagwala (2009) for India.

Results for education show that the consumption expenditures of the people, who have primary education, and secondary education, are lower than those who have higher education which is consistent with the literature. Its effect on consumption expenditures show an increase by 2.6, 3.3 and 3.6 percent at 20th, 40th and 60th quantiles but at 80th quantile it increases consumption expenditures by 3.1 percent which is lower than the previous quantiles.

Table 4
Quantile Regression Results for 2005-06 (Urban)
Dependent variable: Log Per Capita Real Monthly Consumption Expenditures

Variables	Q 20th	Q 40th	Q 60th	Q 80th
H H size	-0.0439* (0.0014)	-0.0433* (0.0014)	-0.0405* (0.0015)	-0.0402* (0.0027)
Age	0.0059* (0.0005)	0.0058* (0.0004)	0.0063* (0.0004)	(0.0063)* (0.0006)
Gender				
Female	0.0122 (0.0298)	-0.0063 (0.0267)	0.0161 (0.0250)	-0.0163 (0.0344)
Occupation				
High skilled	0.0899* (0.0178)	0.0938* (0.0156)	0.1071* (0.0147)	0.1634 * (0.0207)
Medium skilled	0.0164* (0.0071)	0.0185 * (0.0063)	0.0186* (0.0060)	0.0231* (0.0084)

(Table Continued...)

Industry				
Agriculture	0.0575*** (0.0312)	0.0674* (0.0274)	0.1202 * (0.0260)	0.1233* (0.0362)
Manufacturing	0.0388* (0.0119)	0.0423* (0.0104)	0.0451* (0.0099)	0.0598* (0.0139)
Modern services	0.0119* (0.0045)	0.0130* (0.0039)	0.0083** (0.0037)	0.0004 (0.0051)
Traditional services	0.0016 (0.0041)	0.0063*** (0.0036)	0.0106* (0.0034)	0.0172* (0.0047)
Education Level				
Below primary	0.0120 (0.0184)	-0.0020 (0.0161)	0.0015 (0.0154)	-0.0068 (0.0214)
Primary	0.0166*** (0.0116)	0.0034 (0.0101)	-0.0055 (0.0096)	-0.0100 (0.0134)
Middle	0.0235* (0.0086)	0.0148** (0.0075)	0.0164** (0.0072)	0.0169*** (0.0100)
Secondary	0.0291* (0.0066)	0.0233* (0.0058)	0.0227* (0.0055)	0.0262* (0.0077)
Higher	0.0443* (0.0056)	0.0429* (0.0049)	0.0501* (0.0046)	0.0544* (0.0064)
Constant (cons.)	2.7280* (0.0418)	2.8596* (0.0372)	2.9037* (0.0359)	3.0179* (0.0511)
Pseudo R2	0.2159	0.2332	0.2468	0.2608

(i) *,**,*** indicate significance at the level 1%, 5% and 10%, respectively (ii) Numbers in parentheses are standard errors. (iii) Numbers of observations=3522

Quantile regression estimates for urban areas are given in Table 4. As it can be seen, from the table that most of the variables are significant except gender, below primary and primary education in urban areas of Pakistan. In urban as well as in rural sectors, the households' size affects are negative and significant for all quantiles with different pattern of changes in different quantiles. Consumption expenditures of household size are lower in all quantiles. It decreases consumption by 4.3, 4.3, 4.0 and 4.0 in all four quantiles. The findings also show that the affect of age is positive and stable across all consumption expenditures quantiles. Keeping other things being equal, one year increase in age, increases consumption expenditures by 0.59, 0.58, 0.63 and 0.63 percent in upper quantiles and the same results are given by Caglayan and Astar (2012) for a Turkish study.

Estimates of gender show that the female headed households have negative and insignificant effect on consumption expenditures at 40th and 80th quantiles. The consumption expenditures decrease by 0.63 and 1.6 percent in the aforementioned quantiles but consumption expenditures increase by 1.2 and 1.6 percent at 20th and 60th quantiles. We found that the consumption expenditures of high skilled occupations are higher in upper quantiles. The consumption expenditures

increase by 8.9, 9.3, 10.7 and 16.3 percent at all quantiles respectively. The consumption expenditures for high skilled occupations are higher than medium skilled occupations.

The impact of consumption expenditures for below primary and primary education is negative and insignificant. Middle and secondary education have positive and significant effect on expenditures. Results for education show that the consumption expenditures for those who are below primary, have primary education and secondary education, are lower than the household heads that have higher education. Higher education increases consumption by 4.4, 4.2, 5.0 and 5.5 percent in the respective quantiles. Expenditures are higher among highly educated heads in urban areas and this finding is consistent with earlier studies (Nguyen et al., 2006; Chamarbagwala, 2009; Maitra & Vahid, 2006).

Conclusions and Policy Implications

Various household characteristics are considered in this study. It is useful to summarize the main findings of this study with their policy implications. Quantile regression is used for decomposition at 20th, 40th, 60th and 80th quantiles. Dummy variables for education, occupation, gender and industry are used. The results of the analysis reveal that factors such as household size, high skilled occupations, agriculture, below primary, primary education and middle education of the head have direct effect on consumption patterns. For example, as the age of the head of household increases, per capita expenditures increase. It may be because as the age of the head of the household increases the number of dependents also increases.

Per capita expenditure is higher in agriculture in upper quantiles. It may be because they spend more on their life to maintain their status. Whereas the poor usually do not own lands and they are not as much status conscious as are the rich. So the poor spend only on buying the necessary commodities of life.

In rural areas of Pakistan, household size and low level of education deteriorate inequality while high skilled occupation negatively affects per capita expenditures in middle quantiles. Per capita consumption expenditures are higher for age, female headed households, medium skilled, agriculture, modern services, traditional services and higher education in 2005-06. The results suggest that female headed households in rural areas have higher per capita expenditures; this may be due to family size. Usually women in rural areas have more children and combined family system as compared to women in urban areas. So they need to spend more. Moreover, social customs compel them to spend more on social occasions like engagement and marriage ceremonies. Per capita expenditure is higher in traditional services in rural areas. This could be because of social customs and Pakistani mores.

Urban decomposition results show that expenditures for age, high skilled occupations, medium skilled occupation and manufacturing are higher.

The results suggest that the female headed households in rural areas have higher per capita expenditures; this may be due to family size and social customs. Moreover age, high skilled occupations, agriculture and higher education are most dominant factors contributing towards equality in both rural and urban areas. Higher education and better employment opportunities contribute to higher consumption expenditures. Any policy to reduce consumption inequality must concentrate on high skilled occupations, agriculture and higher education.

The results show that large household size and lower levels of education are the factors that contribute to increase consumption inequality. Therefore, it would be better to keep family size small and easily manageable especially in rural areas of Pakistan. Since rich households can afford investments in education and family planning, these facilities should be subsidized for the poor.

In this paper we have shown that consumption is affected by households' demographic characteristics like household size, age, gender, occupation, industry and education and these are the major factors that should be included in measuring welfare. It is, therefore, suggested that without considering these factors, any comparisons among households could lead to incorrect conclusions.

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