A PRAGMATIC ANALYSIS OF CONSUMPTION FUNCTION AND KEYNESIAN THEORY OF CONSUMPTION FOR RURAL POPULATION OF DISTRICT CHITRAL, KHYBER PAKHTUNKHAWA PROVINCE OF PAKISTAN

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ABSTRACT

This research is focused to investigate the correlation between income and consumption in rural areas of Chitral, a Northern District of Khyber Pakhtunkhwa Province of Pakistan. The analysis of correlation between income and consumption based on the main theory of consumption from John Maynard Keynes in the District Chitral of Khyber Pakhtunkhwa is a new addition to the existing literature. This research has been using a paradigm method of estimating total household consumption expenditure against total income of the farmers. The main objective of the study was to explore how consumption expenditure of the rural population is correlated with income using Keynes' Absolute Income Hypothesis (AIH). Ordinary Least Squares (OLS) was used to test the model. Primary data was used. The results verified that in District Chitral Keynesian Absolute Income Hypothesis (AIH) is worth working and consumption is determined by income. Consequently the fluctuations in the rate of consumption are determined by fluctuations in income, which correspond to common hypothesis of AIH i.e. a rise in income increases the consumption. Since the research is carried out about the rural population whose main occupation is farming therefore it is recommended that the government and stakeholders should formulate agricultural policies consistent with structural change to improve the income of small farmers in general and eradicate poverty in particular in District Chitral.

Keywords: Consumption Function, Poverty, Ordinary Least Squares, Keynes, Rural Population, Farmers, Chitral, Khyber Pakhtunkhwa

INTRODUCTION

Thanks to Lord Keynes for his untiring efforts in giving new horizons to the subject of economics and establishing vital role of Economic theory in policy making by Shifting Economic theory to macro issues that tried to make Economic theory more general. Subsequent to the publication of "General Theory of Employment, Interest and Money", a gargantuan research work has been carried out either to approve or disapprove the theories of Keynes (Alice C. O. 2013).

Keynes defined Consumption as the sum of expenditures on goods and services by individuals and households except new houses. Hence these expenditures can broadly be divided into three categories: nondurable goods, durable goods, and services. Nondurable goods refer to tangible goods with limited durability usually less than one year. While durable goods are those tangible goods expected to last a long time (DerLorme and Ekelund, 1983; Abel, B. and Smith, 1999).

The Absolute Income Hypothesis is theory of consumption was first instigated by J. M. Keynes (1936) and afterward developed by James Tobin and Simon Kuznets. Keynesian consumption function defines that consumption depends exclusively on disposable income in the current period. The corollary of this Absolute Income Hypothesis (AIH) is worth mentioning i.e. the household consumption is capricious since any change in current income is reflected in a change in consumption (Carlin & Sosckice, 2006). This hypothesis says that consumption expenditure varies with changes in income. As a rule, there is a positive relationship between income and consumption expenditure when income rises, consumption increases but by less than income. The consumption function shows a mathematical relationship between aggregate consumption expenditure and affecting factors such as income, family size, taste, preferences and interest rates etc. Since consumption expenditure accounts for the largest share in the GDP, It is of crucial significance to investigate how people spend their income to determine the variation in consumption due to change in income (Alice C.O. 2013).

RESEARCH PROBLEM: The economy of Pakistan is the 26th largest in terms of purchasing power parity GDP and 45th largest in terms of nominal in the world. Pakistan is the world's 6th largest, has a population of over 183 million however 54% of Pakistan's population lives under poverty line. While the economy of Khyber Pakhtunkhwa is the 3rd in the country, contributing 10.5% to the Pakistan's total GDP. Although the province has 11.9% of Pakistan's total population yet it is the second-poorest province after Baluchistan. Agriculture is the important occupation of the rural population in Khyber Pakhtunkhwa. District Chitral is the Northern part of Khyber Pakhtunkhwa Province with total area of 14850 sq KM. It shares domestic boarder with Dir & Ghizer in Pakistan and international borders with Badkhshan, Noristan and Tajikstan through Wahkhan Corridor. Total population of Chitral is 3, 20,000 with Rural/urban ratio of 100:00. Human Development Index is 0.479 and Population below poverty line is 36%. Cultivable land is 20, 999 ha with Irrigated land is 20,934 ha (SDC, 2010). Since the majority of the population in Chitral lives in the rural regions their source of revenue is established in agriculture. In view of the fact that Consumption is the most vital economic activity that affects the welfare of the economy, socio-economic interests of the Chitral population can be determined

by appraisal of consumption function. Consequently, it is a new research based on primarily microeconomic and sociological interest in focus.

AIMS AND OBJECTIVES: The main objectives of the study are:
- To quantify the correlation between consumption and income of the farm house holds of district Chitral.
- To figure out the Keynes consumption function for the farm house holds of district Chitral.

HYPOTHESES OF THE STUDY:
- There is positive correlation between consumption and income of the farm house holds in district Chitral.
- The Absolute Income Hypothesis is worth working for the farm house holds of district Chitral.

MATERIAL AND METHODS

This section highlights the research site, sampling framework, sample size, research instrument, and the ways and means the data is collected, analyzed and interpreted for the study under hand.

The geographic coverage of the data was limited to three villages of District Chitral i.e. village Golin , village Mori Lashat and village Kughazi. This finds its justification in that firstly this district has its own unique culture, traditions, and customs which are very much different from the rest of rural Khyber Pakhtunkhwa, secondly all households have their own agricultural land irrigated by natural canal system thirdly they depend on farm income for their consumption expenditure. Sample of the research were small farmers. Total sample size was 900. The samples of 300 farmers from each village were selected on the purely random basis using the proportional stratified sampling technique, i.e.

$$ns = n \, Ns / \, N$$

Where;

ns = sub sample drawn from the nth stratum
n = total size of the sample
Ns =size of the nth stratum and
N = size of population.

The data was collected directly from the respondents through interview schedule. The analysis of the data was carried out using suitable; Econometric Programming Techniques (ETP) i.e. linear regression function and ordinary least square method (OLS). The required data was collected using a comprehensive interview schedule comprising questions about the demographics, consumption expenditure, income, socio-economic problems & opportunities and landholdings of respondents. The data were collected in August, 2013.

Econometric Modeling Techniques

$$C = f \, (Y, Z_i, D_i)\text{---------------------------II}$$

Where C is total consumption, Y is gross income, Z_i are quantitative explanatory and D_i are qualitative variables.

Specifications of consumption function

The general form of consumption function is:

$$C = a_o + a_1 F_s + a_2 L_m + a_3 E_{sa} + a_4 V_{da} + a_5 Y + a_6 D_{tf} + e$$

Where;

C is the total monthly consumption of the household, F_s is family size, L_m is the literate members of the household, E_{sa} expenses on social activities, V_{da} is total value of durable assets and electronics, Y is total monthly income, D_{tf} is dummy for type of family (joint = 1, otherwise= 0) and e is error term.

Estimation of consumption function

The consumption function was separately estimated for each group. Estimated consumption functions are as follows:

Estimated Regression Model of Farm Households of Village Golin

$$C = 116.38 + 1.98 F_s + 0.93 L_m + 2.73 E_{sa} + 0.91 V_{da} + 0.97 Y + 0.77 D_{tf}$$

   (39.34) (0.83) (0.51) (0.99)   (0.13)   (0.13) (0.29)

$R^2 = 0.92$
$F = 199.9$

Estimated Regression Model of Farm Households of Village Mori Lashat

$C_M = 117.56 + 1.83F_s + 0.95L_m + 2.85E_{sa} + 0.87V_{da} + 0.91Y + 0.89D_{tf}$
     (43.50) (0.64) (0.43) (1.13) (0.30) (0.32) (0.08)
$R^2 = 0.91$
$F = 217.4$

Estimated Regression Model of Farm Households of Village Kughazi

$C = 113.78 + 1.92F_s + 0.98L_m + 2.89E_{sa} + 1.10V_{da} + 0.93Y + 0.85D_{tf}$
     (33.7) (0.65) (0.38) (0.88) (0.41) (0.28) (0.04)
 $R^2 = 0.96$
 $F = 200.7$

Aggregate Consumption Function

$\mathbf{C_A = 201.67 + 1.93F_s + 0.89L_m + 2.41E_{sa} + 0.91V_{da} + 0.81Y + 0.78D_{tf}}$
     (83.99) (0.62) (0.36) (0.88) (0.27) (0.31) (0.09)
$R^2 = 0.93$ $F = 210.4$

Figures in parenthesis are the respective standard errors.

Interpretation of Consumption Function

The parameter estimates of consumption function for the entire sample indicate that expenses on social activities "E_{sa}" is the most important variable. The degree of relationship between consumption and "E_{sa}" is 2.73 for village Golin, where the corresponding figures for Mori Lashat and Kughazi are 2.85 and 2.89 respectively. The second important variable, which can influence the consumption level, is family size. The results obtained showed that income and consumption are positively related. Accordingly, the hypothesis that *there is positive correlation between consumption and income of the farm house holds of district Chitral* is accepted.

The standard of living could be judged from the value of intercept, which is 116.38 for village Golin ,117.56 for village Mori Lashat and 113.78 for village Kughazi shows that almost same standard of living exists in entire sample area. However, a very low overall standard of living is determined by the intercept of the aggregate consumption function. For Golin, Mori Lashat, Kughazi and entire sample, the coefficient of multiple determination was 92%, 91%, 96% and 93%. The multiple R shows that more than the 90% of the total variations in the dependent variable are due to explanatory variables. All the respective standard errors are less than half of the value of the estimated coefficients shows that estimated coefficients are statically significant.

Specification of Traditional Consumption Function

A traditional consumption function $C = C_o + bY$ is estimated.

Where;

C_o is the intercept of consumption and b is marginal propensity to consume. In this case all explanatory variables are held constant and consumption is shown as a function of income only.

Estimation of Consumption Function

Traditional consumption Function is also estimated for all the three villages.

For Village Golin:

$C_L = C_o + bY$
$C_L = 571.78 + 0.99Y$
     (131.06) (0.38)
For Village Mori Lashat
$C_M = C_o + bY$
$C_M = 663.19 + 0.93Y$
     (111.08) (0.25)

For Village Kughazi:

$C_H = C_o + bY$
$C_H = 603.37 \quad + 0.96Y$
$\quad\quad (126.15) \quad\quad (0.33)$

Aggregate Consumption Function

$C_A = C_o + bY$
$C_A = 671.97 \quad + 0.92Y$
$\quad\quad\quad\quad (0.39)$
Figures in parenthesis are the respective standard errors.

Interpretation of Consumption Function

The marginal propensity to consume is 0.99 for village Golin, 0.93 for village Mori Lashat 0.96 for village Kughazi and 0.92 for the entire sample. High value of marginal propensity to consume shows that consumption changes with the fluctuation in income. A rise in income bring rise in consumption and vice versa. Hence, the second hypothesis that *the Absolute Income Hypothesis is worth working for the farm house holds of district Chitral is* accepted.

CONCLUSION AND RECOMMENDATIONS: The data collected substantiated the validity of Absolute Income Hypothesis for the rural population of Chitral with farming as their main occupation. The results also depict low standard of living in District Chitral. Consequently, it is suggested that both federal and provincial governments should particularly formulate and implement policies consistent with structural change to improve the income of farmers and eradicate poverty from rural areas

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