Houehold Consumption in Pakistan
(A Case Study of District Bhimber, AJK)

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Abstract

The most important objective was to analyze factors affecting household consumption. These factors are income, family size and basic needs. The study shows that all variables are positively related to consumption except Age. The overall results are reliable and match with the study of Keynes as consumption is a positive function of income, so our study also proves the theory of Keynes. According to the primary data information the lowest monthly consumption calculated is Rs 7766 only and the highest consumption calculated is Rs 35450. The potential of consumption is high in high-income bracket that households belonging to higher income groups having higher consumption. Findings are in line with the economic theory, which suggests that the income variable has positive effect on household consumption.

According to economic theory and observed behavior age has negative effect on consumption. The study also demonstrates that as the age increases consumption decrease. According to Life cycle hypothesis, when age increase saving of individual increases more rapidly this will leads to reduction in consumption. There is also positive relationship exists between gender, education and family structure with household consumption. Education is an important predictor for household's behavior towards consumption. The study found that education has positive effect on consumption. Although educated households have higher consumption because they have to maintain a certain standard of living and usually spend more on children's education, health, clothing, food and necessary luxury goods.

1. Introduction
1.1. Background

Consumption is an economic activity in which an individual allocate his resources (income) to satisfy his needs. Consumption is direct utilization of goods and services by consumers. Consumption is also viewed as a basically subjective phenomenon, with individual utility or satisfaction, assuming primary importance. Consumption is an important component of Macroeconomic thinking and policy.

According to some economists, only the final purchase of goods and services constitutes consumption, and every other commercial activity is some form of production. Other economists define consumption much more broadly, as the aggregate of all economic activity that does not entail

the design, production and marketing of goods and services (e.g. the selection, adoption, use, disposal and recycling of goods and services). Consumer expenditure is the most important and largest component of gross national product. It clearly involves the drawing of psychological satisfaction from the use or ownership of consumer goods and services, not there mere purchase.

Consumption can be measured by a variety of different methods. The total consumer spending in an economy is generally calculated using the consumption function. The consumption function is used to calculate the amount of total consumption in an economy. In economics, the consumption function is a single mathematical function used to express consumer spending. Consumption function provides an excellent illustration of a typical sequence in the development of knowledge the foremost economist associated with the subjective view was Bentham (1748-1932), whose English followers sought to measure quantitatively the utility provided by consumption. The process of consumption is central to any system. Adam Smith made it the sole of production. In the 1930's Keynes introduced the influential theory of consumption, which described the relationship between consumer income and consumption. According to him, "Man on average as a rule, have behavior that when their income increase, they increase their consumption, but not as much as their income increase. It is made up of autonomous consumption that is not influenced by current income and induced consumption that is influenced by the economy's income level. Thorsten Veblen has tried to explain how advertising and marketing can affect consumer choices, where a number of different products are essentially the same.

This thesis is based on the cross-sectional analysis of consumer behavior. Keeping in view the issue of study, we developed a comprehensive questionnaire. We have constructed an econometric model by taking income, gender, age, education, family size, basic needs and family structure as independent variable and household consumption as dependent variable.

1.2. Objectives

The main objective of the thesis is to estimation of consumption function on Samahni (Pakistan) primary data. Further, various other objectives like, to analyze different factors affecting household consumption, to estimates the short run consumption functions and to suggest policy recommendations for the improvement of the sector based on the findings of the study.

1.3. Hypothesis

The thesis exercise is to test a hypothesis that household consumption in Pakistan, based on the following factors.

H_0: The factors like income, gender, age, education, family size, basic needs and family structure do not affect household consumption.

H_1: The factors like income, gender, age, education, family size, basic needs and family structure affect household consumption.

2. Previous Research

Review of literature provides the critical and fundamental knowledge about the focus of the study. This chapter is devoted to the studies conducted in the past by various researchers and agencies nationally and globally in relation to the problem to be studied. Some of these studies conducted in world and in Pakistan are presented below,

J. M Keynes (1936) presented the concept that there is a stable empirical relationship between consumption and income. He stated in his absolute income Hypothesis That "What so ever a consumer allocated to the consumption depends upon his absolute, while other things remain constant". Keynes relates consumption to correct disposable income. The Keynesian consumption function can be written in the form given in methodology section.

Friedman (1957) presented Permanent Income Hypothesis. It is stated that consumer do not respond equally to all income shocks. If a change in income appears permanent (such as being

promoted to a secure and high paying job). People are likely to consume a large fraction of the increase in income; on the other hand, if the income change is clearly transitory, a significant fraction of the additional income may be saved.

Using household integrated expenditure survey of Pakistan for the year 2001-2002, Shamim and Ahmad (2007) analyzed the Household consumption patterns in Urban and Rural Regions. Engel Curves were estimated by Spine quadratic expenditure system for expenditures on Eighteen Commodity groups the break down of the household size into demographic groups by age and sex was proved to be a successful exercise in explaining consumption patterns. They showed that consumption of food and non food items was significantly affected by changes in expenditure and household size. According to this study diary, housing and health appear as luxury commodities in urban areas while poultry, fruit, electricity, entertainment and durables were treated as luxuries in the rural area. Moreover poverty was proved to be a main cause of illiteracy because education appears as a luxury commodity for the poor.

3. Methodology and Data
3.1. Introduction

Consumption function provides an excellent illustration of a typical sequence in the **development** of allocative knowledge. The present chapter discuses the econometric model, variables used in the estimation of parameters and survey methodology. It also discusses the aspects of sampled location and questionnaire. To obtain reliable estimates of household consumption function, we have formulated an econometric model which fulfill econometric criterion.

3.2. Model Formulation Background

In this thesis cross-sectional data is used to analyze the household consumption behavior of district Bhimber (Samahni) located in AJ&K, Pakistan. At national and international level many studies have been taken in the past on the subject to conventional economics, for example in absolute income hypothesis Keynes law of consumption states that, "what so ever a consumer allocates to the consumption depends upon his absolute income, while other factors remains constant". Professor Keynes (1936) relates the consumption to current disposable income as:

$C = Co + bY$

Where:

C= Consumption expenditures

Y= Income

b = Marginal propensity to consume

Co = Constant

Keynesian view is that when income rises, consumption rises, but less than income which implies that Marginal Propensity to Consume (MPC) is less than one. Keynes also argued that, it is observed that a highs absolute income will to widen the gap between income and consumption. This proposition implies that Average Propensity to Consume (APC) tends to fall as income increases.

The provision of health services, education, housing, sanitation, water supply and adequate nutrition came to be known in development circles in the 1970s (and supported by the World Bank) as the Basic Needs approach to economic development. The rationale of the approach was that the directed provision of such goods and services was likely to relieve absolute poverty more immediately than alternative strategies that would simply attempted to accelerate growth are would rely on raisin the incomes and productivity of poor.

3.2.1. Mathematical Model
HHC= f(Y, Gen, Age, Edu, F.Sz, B.Nd, F.St)

Dependent Variable
HHC= Household consumption (Rs per month)

Independent Variables
Y = Income (Rs per month)
    Gen = Gender (Male, Female)
    Age = Age (Year)
    Edu = Education (Level)
    F.Sz = Family size (Number of persons)
    B.Nd = Basic needs (Expenditure on basic needs per month)
    F.St = Family structure (Combine, Separate)

3.2.2. Econometric Model
To capture the effect of various factors affecting household consumption, the following econometric model was used.

$$HHC = \beta_o + \beta_{1i}Y + \beta_{2i}\,Gen + \beta_{3i}\,Age + \beta_{4i}\,Edu + \beta_{5i}\,F.Sz + \beta_{6i}\,B.Nd + \beta_{7i}\,F.St + \mu_i$$

Where:
β_o = Intercept
'β_1' to 'β_7' = Slopes of the respective variables.
μi = Error term of model.
i = ith household individual (i ~ 1 to 81)

3.3. Survey and Methodology

Generally in statistics there are two types of data
    1) Primary data
    2) Secondary data
        We use primary data, because secondary data on these variables are not available. So due to unavailability of secondary data we decided to conduct a survey in the District Bhimber (Samahni). The population included all the heads of households. Stratified random sampling technique was used to select the area for analysis.
        Keeping in view the time and resources constraints convenience method was used to selected area of district Bhimber (Samahni) for the study out of ten districts of AJ&K (Pakistan).81 households/individual samples are used for the results.

3.4. Sample Design

The study universe comprised of district Bhimber (Samahni). Our sample size consists of 81 peoples.

3.5. Questionnaire Design and Data Collection

Keeping in view the issue of thesis, we developed a comprehensive questionnaire (Appendix). The study information was based on primary data. A comprehensive interview schedule was prepared through consulting various research studies of similar nature. The interview schedule was edited in the light of informal surveys of the respondents. The interview schedule was then pre-tested in the study area and modified according to the feedback. Single interview schedule was used to collect data on all aspects, regarding socioeconomic characteristics of the households and other relevant information.

3.6. Data Processing

The data was collected, edited, coded and checked its internal consistency. After the data entry, list of variables were generated and checked their inconsistent errors. For data entry Microsoft Excels was

used and the data analysis was carried out by using both excel as well as Statistical Package for Social Sciences (SPSS).

4. Results and Discussion
4.1. Introduction

This chapter presents the descriptive analysis and also regression results of household consumption a case study of District Bhimber (Samahni). To obtain the results in this section a simple Ordinary Least Square (OLS) technique with Statistical Package of Social Sciences (SPSS). The results are as under.

4.2. Descriptive Statistics

4.2.1. Table

	N	Minimum	Maximum	Mean
HHC	81	7766.00	35450.00	19700.9136
Y	81	11000.00	40000.00	22543.5926
Gen	81	1.00	2.00	1.0741
Age	81	25.00	68.00	41.9877
Edu	81	.00	16.00	11.1975
F.Sz	81	3.00	15.00	8.4568
B.Nd	81	7616.00	34950.00	18486.4321
F.St	81	1.00	2.00	1.5432
Valid N (list wise)	81			

### 4.2.2. Interpretation of Descriptive Table

This table shows that our total respondents are 81. The minimum income of our respondent is 11000, maximum income is 40000. Income mean is 22543.59. The minimum age of our respondent is 25; maximum age is 68 with mean 41.9877. This indicates that average age was low according to the country life expectancy, which is 62 years. The minimum education is 0 (zero), maximum education is 16. Education mean is 11.1975. This table shows that minimum family size is 3 and maximum size is 15 with mean 8.4568. The minimum expenditure on basic needs is 7616; maximum expenditure is 34950 with mean 18486.43.

4.2.3. Pie Charts Gender

Here for males used code is (1) and for female used code are (2). Minimum value is 1 and maximum is 2 with mean 1.0741. Here pie chart show that proportion of male is more then proportion of female.

4.2.4. Pie Charts Family Structure

1= Combine

2= Separate

F.St
- 1.00
- 2.00
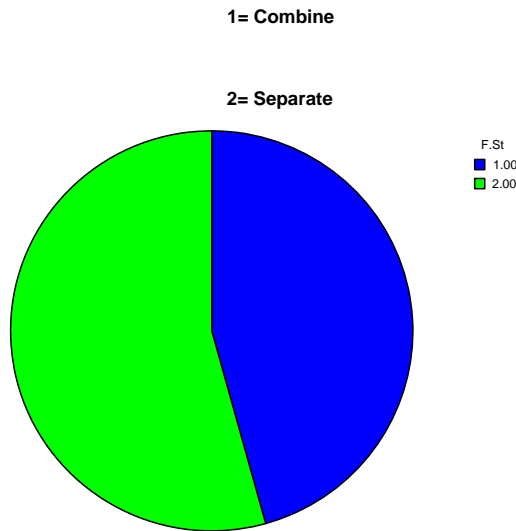
Here for combine family used code is (1) and for separate family used code are (2). Minimum value is 1 and maximum is 2 with mean 1.5432.

4.3. Regression Results

To obtain the results in this section a simple ordinary least square (OLS) technique with statistical package of social sciences (SPSS).T-test is used to check the significances of the variables. The results are as under.

4.4. Model Summary

4.4.1. Table

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.977(a)	0.955	0.951	1285.08831

4.4.2. Interpretation of Results
For the estimation of household determinants we have used econometric technique known as OLS, which provided us good results and satisfied our objectives. We have presented our estimated results into two forms Micro level and Macro level. At Macro level we have presented the econometric results and at micro level we have presented tests of individual variables.

a. Goodness of Fit
It shows the goodness of fit of model that how much variation in explanatory variables of the model is correlated. It means also shows the multiple correlation. The regression estimates indicates that the model is good fitted because the value of R-square is 95% (R-square = 95.5).

b. Adjusted R Square
Adjusted R square is use to adjust R square with the degree of freedom, when its value comes very high. The value of Adjusted R square is 0.951.

4.5. Anova Table

4.5.1. Table

Model		Sum of Squares	D.o.f	Mean Square	F	Sig.
1	Regression	2566720454.407	7	366674350.630	222.031	0.000(a)
	Residual	120555993.988	73	1651451.972		
	Total	2687276448.395	80			

4.5.2. F- Test

The value of F_{st} shows the overall significance of the relationship between dependent and independent variables. It represents the relationship between explained variation and unexplained variation in dependent variables. Maximum 'F' value means the unexplained variation is small. From that point of view large 'F' value is a positive indication for our estimated regression.

The model also reveals simultaneous significance which we have assessed through the F-statistics and its significance (F_{st} = 222.03 and F_{sig} = 0.000) .The results show that our independent variables have strong effect on dependent variable.

4.5.3. Degree of Freedom

The term degree of freedom represents the number of independent variables and number of observation (sample size). In t-test we calculated degree of freedom by the formula (N-k). The estimated value of degree of freedom is (73) with 7 regressed independent variables and 80 observations.

4.6. Statistical Test

4.6.1. Table

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1933.037	1159.808		-1.667	0.100
	Y	0.389	0.054	0.442	7.194	0.000
	Gen	518.874	571.628	0.024	0.908	0.367
	Age	-20.508	15.742	-0.041	-1.303	0.197
	Edu	48.882	51.750	0.027	0.945	0.348
	F.Sz	286.981	70.309	0.126	4.082	0.000
	B.Nd	0.532	0.064	0.511	8.290	0.000
	F.St	229.328	308.318	0.020	0.744	0.459

a. Constant

Constant basically implies that rather than the independent effect on dependent variable i.e autonomous factors affects on the dependent variable. It shows that the variables, which are not in explained and unexplained variation, how much affect the dependent variable. Majority of our individual explanatory variables have significance with Household consumption behavior. In the model intercept has negatively relation and low level of significance with the dependent variable, shows that autonomous factors of consumption behaviour negatively influence the consumption behavior of household.

b. Income

The consumption behavior of the people ultimately depends upon the household's income or the income of the household. The indicator of household income (Y) has positive relation and high significance with the dependent variable (HHC) i.e. by the rate of (β_1 = 0.442 and t_{st} =7.194) .The results indicates that the maximization of the income of the household leads to maximization of consumption of the household. Here we will reject H_o and accept H_1. Such relationship already emphasize by various economist. This result also satisfied the Keynesian theory, which was presented

in (1930).Our results show that consumption is increasing function of income. Also satisfy the review of literature.

c. Gender
In our sample estimates through the regression the co-efficient of gender (Gen) indicates that both males and females are practicing towards the consumption activities but the estimates of variable has insignificance with the dependent variable HHC at the rate of ($\beta_2 = 0.024$ and $t_{st} = 0.908$). Here we will reject H_1 and accept H_o. If we increase level of significance 10% than it will be significant when $\alpha = 5\%$ and level of confidence =95%, then it has a positive relation but statistically insignificant. Only on the basis of economic criteria, we are able to present the results.

d. Age
There is negative relationship between age (Age) of the correspondence and consumption behavior household. According to Life cycle income hypothesis, an individual's life stages consumption varies. According to Life cycle hypothesis, when age increase saving of individual increases more rapidly this will leads to reduction in consumption. But our estimates indicates that age is negatively related and insignificant with household consumption at the rate of ($\beta_3 = -0.041$ and $t_{st} = -1.303$).The variable is found statistically insignificant, in the sense that most of the different age limits have not proper consumption behavior. It also implies that the data is basically focused on the consumption of household as a whole, so the portion of singles in the collected data is very short that's why results are negative and insignificant.

e. Education
Education is an important predictor for household's behavior towards consumption. The indicator of education (Edu) has positively but very low significance with the consumption behavior of household at the rate of ($\beta_4 = 0.027$, $t_{st} = 0.945$), which indicates that educated peoples are also maximizing their consumption. The educated households have higher consumption because they have to maintain a certain standard of living and usually spend more on children's education, health, clothing, food and necessary luxury goods.

f. Family Size
Family size is also an important indicator to determine household consumption. It is evident that largest size of family has high consumption and smaller size of the family has lower consumption. The estimates of family size (F.Sz) indicate that size of the household has strong positively relationship with the consumption behavior of household, implies that as family size increases consumption also increases. Our results were found statistically significant with the rate of ($\beta_5 = 0.126$ and $t_{st} = 4.082$) and t-significance level is (.000). Here we will reject H_o and accept H_1.

g. Basic Needs
The indicator of the basic needs (B.Nd) indicates that more of the basic needs lead to more consumption according to their statues. The indicator of basic needs has positively high significance with the dependent variable i.e. by the rate of ($\beta_6 = 0.511$ and $t_{st} = 8.290$) and t-significance level is (.000). Here we will reject H_o and accept H_1.

h. Family Structure
Family structure (F.St) is also an important indicator to determine household consumption. It is evident that as family structure (F.St) increases consumption also increase. Largest structure of family has high consumption and smaller structure of the family has lower consumption. The indicator of family structure has positively but insignificance with the consumption behavior of household at the rate of ($\beta_7 = 0.020$, $t_{st} = 0.744$).

5. Conclution

In the model household consumption is used as dependent variable and the selected independent variables are income, gender, age, education, family size, basic needs and family structure. We see effect of these explanatory variables on consumption. Income, gender, education, family size, basic needs and family structure are positively related with consumption but Age is negatively related with consumption.

The most important objective was to analyze factors affecting household consumption. These factors are income, family size and basic needs. The study shows that all variables are positively related to consumption except Age. The overall results are reliable and match with the study of Keynes as consumption is a positive function of income, so our study also proves the theory of Keynes. According to the primary data information the lowest monthly consumption calculated is Rs 7766 only and the highest consumption calculated is Rs 35450. The potential of consumption is high in high-income bracket that households belonging to higher income groups having higher consumption. Findings are in line with the economic theory, which suggests that the income variable has positive effect on household consumption.

According to economic theory and observed behavior age has negative effect on consumption. The study also demonstrates that as the age increases consumption decrease. According to Life cycle hypothesis, when age increase saving of individual increases more rapidly this will leads to reduction in consumption. There is also positive relationship exists between gender, education and family structure with household consumption. Education is an important predictor for household's behavior towards consumption. The study founds that education has positive effect on consumption. Although educated households have higher consumption because they have to maintain a certain standard of living and usually spend more on children's education, health, clothing, food and necessary luxury goods.

6. Recommendations

The following recommendations made in this study will be helpful for producers for the selection of best prediction model for predicting household consumption. This research work will also facilitate the producers to take their production decisions and it is also helpful for policy purpose.

Consumption is an important component of macroeconomic thinking and policy. As we know that household consumption has badly affected by the economic crises and by current situation in Pakistan. So there is a need to improve the purchasing power of the people. Government can do the following steps.

- Government can better-off the purchasing power by increasing the individual's wages.
- By decreasing general price level in market area, so household consumption can be encouraged.
- More job opportunities can be provided, so that income level improves.
- Subsides on food and other items may also be helpful for lowering the price.
- Income taxes should be decreased or optimal.
- Financial institutions should provide encouragement.

Federal government should provide the facilities to entire people to consume optimally and maximize welfare in Pakistan economy.

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