Determinants of Household Saving: A Case Study of Kabul Afghanistan

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Abstract

Household saving is a source of investment and is regarded as a key factor in economic growth. This study is an effort to examine the determinants of household saving in Kabul, Afghanistan. The several economic and socio-demographic factors that affect household saving have been completely examined in this study. The data were collected through a well-structured questionnaire from 384 households. Through stratified random sampling, 384 household's heads were interviewed. For statistical investigation we applied Diagnostic test and Generalized Least Square (GLS) methods to our model. It is observed from the estimated result of this study that income is a major and most important determinant of household saving which positively affects the saving of a household. Further, results also reveal that household size has negative and significant relationship with household saving. The educational level of the household head shows a negative impact on household saving. The results further indicate that married household head and male household head are likely to save more as compared to unmarried household head and female household head respectively.

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Moreover, age of the household head confirms the Life-Cycle-Hypothesis. The results reveal that with the increase in age at middle age of an individual the saving increases, however it decreases at the latter age of life.

Keywords: Household Saving; Household Income; Education Level; Age; Gender; Marital Status; Household Size.

1. Introduction

Economic theory postulates that household saving is the amount left after consumption. It is the difference between household income and household consumption. Income of a household is the whole receiving from all the sources during a given period. These income sources possibly will be in the form of profit from corporation, profit from occupation, salary from job, and payment of interest, etc. On the other hand, consumption of a household is the total amount of goods and services that is consumed by a household during a given period. It covers housing, rent, food expenditures, expenditure on clothing, education, utility bills, ceremonies, health, charity and traveling, etc. Aside from cash, savings can take the form of real estate, jewelry, shares, bank balances, livestock, and so on. The importance of saving in economic growth, in particular, is useful in determining the characteristics that encourage household savings.

The new-classical growth model suggested by [47] suggests that saving changes the country's economic growth. Based on this model, as saving of country increases, it will cause capital accumulation and, as a result, accelerate the rate of growth. Although neo-classical growth model assumes that at the steady state level saving will not affect the economic growth of a country but the model assumes important between a rapid economic growth and higher saving rate to attain long-run equilibrium. Harrod-Domar model of economic growth proposes that saving rate along with output of capital describes the growth rate of an economy. Traditional development theory of [48] determines that increasing in savings accelerates growth. Similarly, "Two-gap" model and classical growth model follow that saving holds considerable importance in the accumulation of capital and a country's economic development. Savings stimulates the economic growth through the channel of investment. It is a major source of fund available to producers for investment. Higher domestic saving means availability of larger amount of fund for investment which is necessary for the continued rates of economic growth.

Given the significance of household saving in economic growth, it is worthwhile to examine the factors that encourage household saving. A broad variety of literature, both empirical and theoretical, is available on the determinants of household savings. The authors in [49,50] establish a direct relationship between the two variables saving and income using the permanent income hypothesis and the Keynesian saving function, respectively. Many recent studies [1,5,9,17,25,34,43] have discovered a relationship between household income and household saving, with the hypothesis that household income has a positive and significant impact on household savings. In addition, socio-demographic variables like household size, household age, education, the gender of the household head and marital status can also influence the saving behavior of a household. The authors in [25] found that saving decreases with increases in household age and family size. The authors in [2] also report negative impact of family size on household saving. Impact of education is found to be mixed on

saving. Whereas, [17, 25] found negative, [23] found positive impact of education on saving. According to [23], age has no effect on saving rates.

Afghanistan, like many other developing countries, faces a significant savings-investment gap in order to stimulate and sustain a desirable rate of economic growth. This gap was caused by a lack of domestic investment, which forced the economy to rely heavily on external resources such as foreign direct investment, loans, and grants. This measure, which has been heavily criticized for making developing economies overly reliant on other economies, is unsustainable, as donor countries are currently experiencing social and economic shocks at home, not to mention that this reliance has left developing countries heavily indebted.

1.2 Research objective

The general purpose of this study is to investigate the determinants of household saving in Afghanistan. Our specific objective is:

1. To measure the impacts of economic and socio-demographic variables (household income, age of the household head, household size, education level of household head, gender of household head, and marital status of household head) on the household savings in Kabul.

1.3 Rationale and significance of the study

The portion of one's current income that is not spent on consumption is referred to as savings. When household saving and national saving are linked to economic development, the value of household saving in particular and national saving in general can be seen. Economic growth can be affected by many factors, including savings. Savings have an indirect effect on economic growth through investment channels. Saving has a vital role in maintaining a higher level of investment an important factor of economic growth. Higher domestic saving leads to higher investment rates, which is required for the sustained growth rate of the economy. Higher growth means more opportunities of employment and more income of the households. This higher saving indirectly will help in reducing poverty. This finds to be very helpful in the alleviation of widespread poverty in developing countries.

In Afghanistan there is a lack of efforts on the determinants of household saving based on micro data, and our policymakers have limit information on knowing the determinants of household saving. Therefore, this study will help policymakers while coming up with measures to boost household savings in particular and national savings at large in Afghanistan and so contribute to the existing knowledge.

1.4 Gap analysis

Various types of functional behavior between income and savings have been investigated by many researchers. Some studies found that income had a statistically significant impact on savings, while others found that it had a relatively minor impact. Some studies have looked at the relationship between several socio-demographic variables (household size, age, education, gender, marital status) and savings for different countries. Similarly,

some of them have been conducted in developing countries; some of them have been conducted in developed countries. Besides this, various studies used different data and methodologies and found the effect of different variables on savings. However, a determinant of household saving in Afghanistan is a new attempt that no one has done before. This research is an attempt to fill this gap and find a meaningful conclusion. This study mainly focusses on the factors that determine the household saving in Afghanistan by using the survey method.

1.5 Constraints/limitations of the study

Every study and research has its own set of limitations. Initially, the study's and research's durations were not a big limitation on the study's significance since the data I obtained from respondents was not publicly available and distributed over multiple sites. At the same time, collecting data for the study was time-consuming and complex. This is due to respondents' attitudes; financial restrictions were also a restraint in the logic of the researcher's requirement to invest appropriate money throughout the data collection procedure. Apart from that, some respondents were hesitant to offer data and were irresponsible due to the household's secret. As a result, the study shows the determinants of household saving in Kabul city.

2. Literature Review

Many researchers in the past have also conducted a variety of studies to determine the nature of saving of household in different countries. A number of studies have shown that socio-demographic and economic variables influence household savings. These determinants include household income, household size, household age, education level of household head, gender, and marital status. While presenting the findings of the earlier studies that are most relevant to our study.

The authors in [10] in their study explore the impact of various variables on household saving in Pakistan. The study uses the HIES data for 1984-1985 and apply ordinary least squares (OLS) method to estimation the model. The result shows that different categories of education have negative relation with the household saving for both rural and urban regions, but the impact is relatively small for the rural households as compared to urban region. This suggests that as the educational level of the household head increase, the household saving will reduce. According to author this is because the educated parents are more likely to educate their kids hence they devote more spending to their children education and save lesser proportion. Furthermore, the study indicates that self-employed individuals save comparatively lower as compared to the paid-employees both in urban and rural region. Similarly, the study indicates that the secondary earner has no significant influence on the savings of household. Likewise, the estimates of age of household head and age-square are negative and positive respectively for both regions, and statistically significant. This shows that saving is decreasing with the decreasing rate with respect to age. Finally, the estimates explore that all different categories of occupation have no significant influence on the saving of household.

The causes of variety variables (household income, gender, age, nature of businessmen occupation, dependency-ratio, credit access, and the educational level of household head) on saving of household is also study by [27]. The study is from based on survey data from 359 rural households in Nakuru district (composed of teachers,

farmers, and entrepreneurs). They discover, using the OLS estimation technique, that household income and household saving are positively related, as identified by [3,36]. The relationships between these two variables observe as very strong. The study also implies that education and household saving are positively related which is contrast to the findings of [3] but not for the urban household in the former study. Furthermore, the dependent variable household-saving is positively related to the explanatory variables gender of the household head, businessmen-occupation, and educational level of the household head. Likewise, the finding of credit access and age of the household head is observed to have negative effect on saving of households, the result for age in this study is differing with the results of [3]. Similarly, dependency ratio also inversely related to saving as pointed by [3,36], but the result in this case in insignificant for the former study and significant for the latter.

The authors in [1] examine the microeconomic determinants of household saving behavior in Morocco. The study use a new survey called Community Based Monitoring System (CBMS 2007) for Essaouira and Bouaboud. The ordinary least squares technique is used to estimation the household saving function. Rendering to the study, household income has a positive influence on household saving. Current income has a strong impact on saving levels in the urban area, whereas literateness of the household's head is significant in the rural area. Only in the urban case does the size of the household have a significant negative impact, and female heads of household save more than male excepting at the highest level of income. It is evident from the results that urban and rural households act differently in terms of savings. Moreover, the study discovers that in case of rural areas of Morocco the impact of household size is not significant on household saving, that any marginal change in household size does not influence saving, whereas it negatively affecting the household saving as indicated by [43]. The negative impact of household size in this study is found in urban areas only. The relationship of saving and age is found as hump-shaped, but this result for age and age square in both the samples (Essaouria and Bouaboud) was insignificant. Amusingly, when the impact of household head analyzes on saving, the Moroccan women save not more than men, while the interaction-term of household income and household head give the contrast result for Essaouria, except with rising income.

The authors in [17] in their study explore the determinants of household savings in both rural and urban areas of Pakistan. The survey design is employed to gather data for this study, and a standardized questionnaire is used to collect data from 50 households. The heads of 25 rural and 25 urban households were interviewed using stratified random sampling. The study uses simple multiple regression to investigate the relationship between socio-demographic determinants like income, education, age, marital status, dependency ratio, and employment status and household saving. The study shows that the socio-demographic determinants of savings in urban and rural regions are similarly significant. The results indicate that the overall model works well in both urban and rural situations. Household age has a significantly positive association with household savings in both regions, whereas education has a negative and significant association with household savings in both regions which are contrast to the findings of [2,25]. But according to [3,27] it has positive relationship but not for the urban household in the former study.

The author in [9] using the Uganda National Household Survey 2012/2013 investigates the various socioeconomic and demographic factors that influence household saving in Uganda. The study employs both ordinary least squares (OLS) and descriptive statistics to estimation the household saving function. This study

thoroughly investigated the various demographic and socioeconomic variables that influence household saving in Uganda. According to the study, the household saving rate in Uganda increases with increasing household income and decreases with increasing household size. This gives support to the results of the former studies e.g. [3,28,25]. The study also observes saving rate of household does not only depend on household income but also on other socio-demographic determinants such as gender, marital status were not significant.

The author in [42] investigates the factors that influence household saving in South Africa. The study employs panel data estimate methodologies using (NIDS) data for the period between and (2008 and 2015). He uses panel data approaches to estimate the model, notably the fixed effects and 2SLS estimation models. The projected results reveal that socio-demographic characteristics such as income, asset ownership, and relative income have a considerable effect on South African household savings habits. However, household size, household expenditure, and black population group representation continue to be viable arguments for household saving in South Africa. The findings of the study show a positive association between household saving and total household income, meaning that individuals are more inclined to save when they are receiving an income. These conclusions suggest that strategies to increase household saving in South Africa should increase income distribution among the population.

The authors in [34] in their study investigate to empirically analyze the factors influence household saving in Zambia the period between (1985 and 2017) by using secondary data time series data. The study reviewed both empirical and theoretical work on the association between saving of the household and its explanatory variables. They employ the ARDL model. According to their findings, household savings in Zambia are positively related to household income and financial deepening. The study also shows that, contrary to popular belief, household saving and income level is positively related, implying that Zambian households save despite their low income.

The authors in [38] investigate the microeconomic determinants of saving in Nigeria. The study uses the (NHS) data for the period 2008 to 2009. The study employs (OLS) and Two Stage Least Squares (2SLS) methods for the estimations. The study focuses on the significance of household socio-demographic determinants in determining household saving. The study determines that household characteristics provide strong explanations for improvements in Nigerian household savings. The findings show that household size, age, location, household ownership of land and occupation are significant determinants of household savings in Nigeria. The study propose that household size has negative impact on saving in Nigeria as identified by [1,27], but according to [1] it is not significant. Furthermore, the study's findings suggest that households with better living conditions can save more.

The authors in [30] examined to detect demographics and economic factors and the factors related to residential properties and social-environmental indicators affecting household savings in Turkey. In the study, cross-sectional data was obtained from the Household Budget Survey conducted by the Turkish Statistical Institute between the years 2015-2017. Binary logistic regression and binary-probit regression analyses determined household savings factors. According to the analysis results, the factors like the occupation of the household head, educational status, gender, age, marital status, household size, automobile ownership, and survey year were determined to affect the saving behavior of households.

3. Theoretical Framework and Data

This chapter provides a detailed discussion on three important aspects of this study. First one is the economic theories presented by different economists regarding savings behavior. Second is the specification of econometric model and strategy that is used for estimation. Third one is the collection of data and variable construction. Section 3.2 presents economic theories related to savings. Among these are the Classical view, Keynes (1936) Absolute-Income-Hypothesis, Duesenberry (1949) Relative-Income-Hypothesis, Friedman (1957) Permanent-Income-Hypothesis, Modigliani and colleagues (1963) Life-Cycle-Hypothesis, and the Random-Walk-Hypothesis proposed by Robert Hall (1978). Section 3.3 of this chapter discusses the specification of econometric model for the purpose of empirical estimation. Section 3.4 of this chapter elucidates definition and construction of the variables. Section 3.5 of this chapter discusses data and data sources and section 3.6 confers about econometric technique.

3.2 Economic Theories of Saving

These theories assume either individual or household as the unit of consumption-saving decision. They all emphasis the link between saving, Income and consumption as discussed below:

3.2.1 The Classical view (loanable fund theory)

The Classical economists believe that the interest rate is an essential for the determination of savings. According to them, the economic agents will tend to save more in case when the rate of interest is high and when interest is low they will tend to save less. To write it symbolically,

$$S = f(r) \tag{3.1}$$

Where S shows saving and *r* denotes the interest rate. It shows that saving and the rate of interest have a direct relationship.

3.3.2 Absolute-Income-Hypothesis (Keynesian Theory)

The author in [49] did not support the Classical View of saving. According to [49] savings and consumption have a stable relationship with income (saving is function of income). However, the fact that personal saving of some individuals is encouraged by a rise in interest rate remains same. Individuals would possibly be ready to curtail their pattern of consumption or try to make more income to increase their saving. But merely an increase in interest rate is worthless if income of an individual is not increased. However, the interest rate is a vital component for the mobilization of saving. Individuals would be willing to put their savings with those institutions which they think would give them a higher interest rate. The author in [49] believes that income is a most important factor that determines the consumption and suggests that in the course of closed economy (in the absence of trade and public sector), income is actually the composition of saving and consumption. This theory tells about the association of consumption and income and underlines, that a household's consumption level is determined by its absolute-level (current level) of income. According to the hypothesis, as the level of income

grows, so will the level of consumption, but not in the same proportion, but in a lower proportion. Hence, if we analyze saving, we can say that as the current income increase the saving rate will rise more than the consumption rate. However, some empirical results contradict the theory as sometimes a rise in income leads to a rise in saving at a declining rate as higher incomes make consumers to start consuming things they were not consuming before.

3.2.3 The Relative-Income-Hypothesis

According to [51], individuals may not just have focused on the absolute levels of possession. They are actually more concerned with their relative assets in comparison to the other individuals. The relative income hypothesis of [51] perceives consumption in respect of the income of a household related to the income of the other families and past the household income under reflection. The author proposes that the fraction of income consumed (hence, saved out of the income stream) by the people depends on their relative income i.e., upon their percentile position in the distribution of the total income. Thus, by any given time, people will consume a smaller proportion of their income stream (or greater saving) with an increase in their absolute income and improvement in their relative position in the income distribution. But, if the position of the people on income account in relation to the others remain unchanged, regardless of an increase in absolute income, the saving and consumption will remain same.

3.2.4 Permanent Income Hypothesis

The author in [50] states that it ought to be more appropriate at the account of individuals to use the current income, but correspondingly to form expectations about future levels of income and the relative amounts of risk. Consequently, they are making an analysis of permanent income. Permanent income is described as the long-term expectation of income throughout a planning period, as well as a steady rate of consumption maintained across a lifetime based on present asset levels. According, to [50] permanent income is determined through these two basic elements namely; consumption and saving. This reveals a proportional link between the saving and permanent income. At every moment in time, an individual's permanent income is defined not by his present income, but by the income that is predicted to be earned over a lengthy period of time. Temporarily, permanent income is based on the expectations of individuals; hence, the actual income of an individual at any period may be greater than or less than his/her permanent income. Thus

$$Y = Yp + Yt \qquad\qquad (3.2)$$

Where, Y shows actual income, Yp shows permanent income – average income, which individuals expect to remain in future, and Yt shows transitory income – Which means a temporary deviation from the average income of the country.

Similarly, saving can be written as

$$S = Sp + St \qquad\qquad (3.3)$$

Where, S is actual saving, Sp is the saving out of permanent income and St is the saving out of transitory income.

Because transitory income is defined as the gap between actual income and permanent income, and because individuals are expected to refrain from consuming from this income category, the (MPS) on transitory income will be unity.

3.2.5 The Life Cycle Hypothesis

This hypothesis is mainly attributed to [52]. The Life Cycle Hypothesis (LCH) asserts that a representative individual optimizes his or her utility from life-time consumption, and that saving is the difference between an individual's income and expenditures.

Once a result, we may imagine, following Modigliani, an individual beginning with negative savings at an early age, amassing savings during his or her working life, and then returning to dissaving as he or she retires. The authors in [52] claim that there are two major motives of savings.

First one is that, saving provides protection against the main fluctuations in income that normally occur during the life-cycle of households. Similarly, it also provides a guard against less systematic and short-term variations in income and needs. Second is that, the provisions a household would wish to make and can manage to make for retirement as well as for other precautionary measures must be proportional to the volume of earnings. The years in which these provisions can be made are independent of the level of income. This theory can be described by the consumption model:

$$C = (W + RY)/T \tag{3.4}$$

And therefore saving function derived as:

$$S = (W + RY)/T \tag{3.5}$$

Where, W shows the initial endowed wealth

R shows the number of years earning labor income

Y shows labor income

T shows the life expectancy of the individual

S shows saving from the second model

However, some studies have generated results in conflict with the (LCH) as they indicate that even the retired people continue to save as opposed to dissaving for many reasons like uncertainty which require one to spend below their incomes.

3.2.6 The Random Walk Hypothesis

The author in [53] adds to the rational expectations postulation by claiming that people anticipate future variables such as income using all available information. Consumption will adopt a random walk if the Permanent Income Hypothesis holds true and consumers are believed to have national expectations. Because the projected variation in wealth or income has already been transformed into expected permanent income, it will have no influence on consumption. Only unanticipated changes in income or wealth that influence predicted long-term income and consumption will cause consumption to shift. As a result, saving would also follow a random walk, with no transitory part of saving. Individuals will set aside a portion of their permanent income for savings.

3.3 Econometric model

We define household saving as the household income minus household expenditure or consumption, which symbolically may be written as

$$Si = Yi - Ci \qquad (3.6)$$

Where Si shows savings, Yi shows total income, and Ci shows total consumption or expenditure of ith household respectively.

Starting with the Keynes Absolute Income Hypothesis (AIH) we relate our dependent variable-household saving to household income as:

$$Si = f(Yi) \qquad (3.7)$$

Education is a demographic variable which can affect household saving in different ways. Education can be defined as the foundation for the development of information, sense, knowledge, and some other necessary abilities of awareness, character, and general aptitude, particularly through formal directives. According to the findings of [23], the level of education has a direct influence on household saving. However, [10] have different views regarding the influence of education on household savings. They argue that impact of education on saving is ambiguous. The ambiguity was based on many reasons, the consumption expenditure of the educated households is relatively higher, despite the fact, and the earning of educated people is more likely to be higher as well. Furthermore, as the consumption of a household is affected due to the preferences and tastes of all members' household, so it is hard to define a composite index of household's educational level. Meanwhile, the decisions are generally taken by the head of the household regarding the extent of saving. Therefore, the education of the head of a household seems to be an appropriate variable. Furthermore, the educational level of a family head is not merely determining the education level but the amount and pattern of spending which in turn define savings. A study by [2] also supported the inverse relationship of education and household saving. The life-cycle model indicates an existence of association between the age of household head and saving of household. This study is going to include age square and the age of the household head as an independent variable to check the non-linear relationship with household saving. The authors in [10] found a direct

relationship between age and household saving, when age is crossing certain limits in years. Gender of a household head and marital status of household head has also taken as important demographic variables to determine the influence of head on household saving. It would also be beneficial to find the effect of marital status of household head and gender of household head on the saving of household which can help the concerned authorities in policy making. Household size correspondingly plays an important part in the determination of household saving. The author in [46] show that the size of a household contributes mainly to the savings of middle and higher income economies but in developing countries, it does not hold any important impact. The author in [46] also reaches to the similar conclusion in Turkey and observes that size of a household does not influence the saving significantly. However, [2] find that size of a household has an indirect relation with saving of household.

When we add all the above mentioned variables, the equation (3.7) becomes

$$Si = (Yi, HSi, AGEi, GENi, EDUi, MSi) \tag{3.8}$$

Where, S is dependent variable which shows household saving.

Independent variables are Y shows income of the household, HS shows the size of the household, AGE shows the age of the household head, GEN shows the gender of the household head, EDU shows the education level of the household head, and MS shows the marital status of the household head.

In the above variables, age of household head, the level of education of the household head, gender of the household head, and marital status of the household head are categorical variables. After introducing these variables in categorical form, equation (3.8) may be written in stochastic form as:

$$Si = \beta_0 + \beta_1 Yi + \beta_2 HSi + \beta_3 AGEi + \beta_4 GENi + \beta_5 EDUi + \beta_6 MSi + \beta_7 AGE2 + U \tag{3.9}$$

3.4 Data and Data sources

Data are important part of any research work. In this research, we used survey technique for data collection and the data is collected via a survey questionnaire and door-to-door personal interview. Kabul is the capital and one of the main city of Afghanistan. The total area divided into four zones (East, West, North and South). As a result, each zone have a weight of 25 percent, the sum of these four zones will be 100 percent of the sample. The questionnaire covers almost all the variables of our model. A stratified random sampling method was used in this research. Through stratified random sampling, 384 household's heads were interviewed. So by implementing a stratified random sampling approach, we have visited every fifth house in a given street. The sample size was 384 based on the confidence interval method with a 5 per cent error margin and a population size of 4.273 million.

3.5 Estimation Technique

To measure the quantitative effect of the independent variables on our dependent variable – household saving,

we used Diagnostic test and Generalized Least Squares (GLS) methods to estimate the model. The reason for using GLS instead of OLS is that there is possible problem of heteroscedasticity in our model as it is common in most of the cross-sectional data.

4. Results and Discussions

This chapter presents results and findings of the study found from the target respondents. Our findings consist on both descriptive statistics and regression analysis. Descriptive statistics provides summary statistics of each variable; while in regression analysis we regress saving of household on different economic and socio-demographic variables in order to capture their importance in the saving.

Descriptive analysis of the variables is discussed in section 4.2. It presents summary statistics frequencies, maximum, minimum, standard deviations and means of the variables. This will help us to understand the distribution of each variable in our sample. Section 4.3 portrays the picture of the regression analysis. And section 4.4 presents summary of the empirical results.

4.2 Descriptive analysis of the variables

In this section we report frequency distribution and means (where required) of all variables under discussion. There are total of 384 households in our analysis. The table-1 presents distribution of the categorical variables; location, gender of household head, marital status of household head and educational level of household head. Afghanistan is male dominated country, where most of the economic decision powers are in the hand of male member of the household. Table-1 tells us out of the total sample of 384 household heads, 361 (94.0%) household head are male and only 23 (06.0%) household heads are female. Furthermore, table-1 also shows that most of the household heads, 374 (97.4%) are married and only 10 (02.6%) of household heads are unmarried. Table-1 also reports the household heads fall in different level of education. Data reveals that majority, 99 (25.78%) of the household head either never attend school or have only 0 year of education. There are 62 (16.15%) of households whose heads have level of education up to primary. 97 (25.26%) of the household heads have matric and above primary levels of education. The household heads, who have completed their education up to the intermediate level, are 90 (23.44%). Finally, the bachelor and above levels of education are 36 (09.38%) household heads.

Table 1: Frequency Distribution of all categorical variables.

Variables	Categories	Frequency	Percentage
Gender of Household Head	Male	361	94.0%
	Female	23	06.0%
Marital Status of Household Head	Married	374	97.4%
	Unmarried	10	02.6%
Level of Education of Household Head	ED_1	99	25.78%
	ED_2	62	16.15%
	ED_3	97	25.26%
	ED_4	90	23.44%
	ED_5	36	09.38%

In Table-2 we describe quantitate variables. Results given in table-2 show that mean income of the household head is 37595.5, The Afghan afghani (AFN) with standard deviation of 23885.8 (AFN). The minimum income recorded is 8000.00 (AFN) and the maximum income is 150000.0 (AFN). Similarly, the mean of saving of household is 8420.6 (AFN) with standard deviation of 7737.1 (AFN). The maximum saving of household is 50000.0 (AFN) and the minimum saving of household is 0.0 (AFN).

The descriptive statistics of the two demographic variables, household size and age of the household head, are explained in fourth and fifth row of table-2 respectively. The mean size of household is 8.2 members with the standard deviation of 3.4 members. It also indicates that maximum 20 members live in a household while minimum of 2 members live in a household. Similarly, the mean age of the household head is 40.85 years with standard deviation of 11.23 years. The maximum age of the household head is 81 years and the minimum age of the household head is 23 years.

Table 2: Descriptive Statistics.

Variables	Mean	Std. Dev.	Minimum	Maximum
Income of Household	37595.484	23885.801	8000.0	150000.0
Saving of Household	8420.573	7737.084	0.0	50000.0
Household Size	8.221	3.416	2.0	20.0
Age of Household Head	40.849	11.234	23.0	81.0

4.3 Regression Analysis

In this section we present findings from the regression analysis by estimating equation using Diagnostic test and Generalized Least Squares (GLS) methods. We regress saving of household on different economic and socio-demographic variables after regress we applied Diagnostic test to test the problem of heteroskedasticity, the result in table 3 shows that the p-value of chi2 is less than 5 percent so we reject the null hypothesis of no heteroskedasticity and accept the alternative hypothesis of there is problem of heteroskedasticity.

Table 3: Diagnostic Test.

chi2 (46) = 126.58	Prob. > chi2 = 0.0000

Since there is problem of hereroskedasticity we applied (GLS) method in our model. Results of regression analysis are shown in Table 4. The R-Square value for the model shows goodness of fit, R^2 value was 0.615 which is significant value for coefficient determination.

Amongst the determinants of household saving in table-4, income has a positive coefficient and found highly significant at p-value 0.000. Likewise, age of household head has also positive coefficient and found significant at p-value 0.000. Whereas, we include age square to capture the non-linear relationship of the age and saving, the coefficient of age-square indicates that household savings are inversely related to that age-square. Household size was also found significant determinant for household saving and has negative coefficient and p-value 0.000. Education of household head was also found significant determinant for household saving and has negative impact on saving of household. From the estimated coefficient of marital status we can infer that the coefficient

of a married household head is positive means that married household head will to have more saving in comparison to unmarried household head. Finally, we analyze the effect of gender of household head on household saving and the result is showing a coefficient for female gender with negative sign means that female household head save less as compared to male household head.

Table 4: Dependent variable Household Saving.

Variables	Coefficients	P-values
Income of Household	1.518 (0.068)	0.000***
Age of Household Head	17.606 (3.105)	0.000***
Age-square	-2.264 (0.407)	0.000***
Size of Household	-0.779 (0.102)	0.000***
Up to Primary	-0.004 (0.082)	0.960
Matric and above primary	-0.381 (0.075)	0.000***
Intermediate	-0.301 (0.106)	0.005***
Bachelor and above	-0.037 (0.106)	0.726
Married	0.146 (0.164)	0.375
Female	-0.172 (0.088)	0.052**
Constant	-24.433 (5.895)	0.000***
R-Square = 0.615	**F-test = 34.77**	**Prob. > F = 0.000**

Standard errors are in parenthesis. Significance Levels: $P \leq 0.10*$, $P \leq 0.05**$, $P \leq 0.01***$

Income of household: The estimated result given in Table-3 show that income is an important factor that determines the saving of household. The estimated coefficient of income variable is presenting a significantly positive relationship with household saving as inferred by theory. The positive coefficient of income indicates that as the level of income of the household increase, they will likely to increase their savings accordingly. Our finding is reliable with the earlier results of different studies carried out by [12,25,34,35,43].

Age of Household Head: The estimated result given in Table-3 show that age of household head is a significant factor that determines the household saving. The result for age variable indicates that household saving is positively influenced by age. However, the coefficient of age-square indicates that household savings are inversely related to that age-square, where age-square included in the model to capture the non-linear relationship of the age and saving and to check the validity of life-cycle-hypothesis. The positive sign of the coefficient of age and negative sign of the coefficient of age-square identifies those initially household saving increases with the increase in age of household head with decreasing rate and eventually reaches to the point where the household saving start declining. As the life-cycle income hypothesis (LCH) states that initially individuals consume some of their income and saves the rest of income, but as the time passes and they reach to

retirement, then they will start consuming from their savings or start dissaving. Contrary to this, [1] investigated the factors that define the household saving in Morrocco and [3] studied the factors influence household saving in Pakistan and ended with a positive and negative result for age and age-square respectively. The authors in [30,43] also found the same type of result for age for district Multan and India respectively. On the other hand, [10] investigated the effect of age and age-square on household saving for Pakistan and found negative and positive results for age of household head and age square respectively. Likewise, the influence of age on household saving was also checked by [25] and found negative impact. The author in [23] found that age has no major effect on saving of household.

Household size: The finding of the size of household and household saving shows that the influence of household size on household saving is significantly negative at 1% significance level. When the size of a household increases its expenditure also increases and saving decreases. The estimated coefficient in Table-3 for household size is negative indicating its negative relationship with household saving. It is quite rational that when the size of a household increases, the expenditure will also increase and hence led to reduction in saving. On the contrary as the size of the household declines, the households' consumption expenditure will also decline and as a result increase in household saving. The association between the household size and household saving was studied by [1] and found it negative. The negative impact was also confirmed by [5] who studied household saving for the case of India and China. Following these other researchers [2,3,23,25,38,42,43] also confirmed a negative association between the saving of household and the household size.

Education of household head: The finding of the educational level of household head and saving indicates that the impact of household head's education on household saving is significantly negative. The estimated coefficient illustrates that as the level of education of the household head increases the negative coefficients becomes bigger and bigger. This explains that a household head having more years of schooling will comparatively save less than those having less years of schooling. This negative coefficient may be due to the fact that educated household heads are tend to spend more money on their children's human capital as compare to less educated heads of household. Some earlier studies came up with the similar findings, a negative relation between the level of education of the household head and saving of household. Amongst these studies, [10,17,25,43] determine that education level of household head and household saving are negatively related. The author in [10] state the negative association between education of household head and household saving. In contrast past studies also finds a positive association between these two variables the studies [27] for Brata a Kenyan district, [20] for Australia and [23] for Turkey reach to the findings that the association of education of head of a household and household saving is positive.

Marital status of Household Head: From the estimated result of marital status we can infer that a married household head will to have more saving in comparison to unmarried household head. This surprisingly means that marriage has positive relationship with saving of household. The estimated coefficient of marital status is positive but insignificant. Our findings are different from the findings of [43] who find a negative association between marriage and household saving in district Multan by using a survey data. The reason behind positive coefficient of a married household head is that the responsibility of a married household head is greater than an unmarried household head. The responsibilities may make the married household more cautious to save for their

children's better education, health, weddings, health, dowry, and other precautionary measures.

Gender of Household Head: We examined the influence of gender of household head on household saving and the finding is showing a coefficient for female gender with negative sign. This describes that a female headed household are likely to save less as compare to a male headed household. Our finding is compatible with an earlier study by [25] who conclude that the saving rates of male-headed households are higher than female-headed households. Similarly, [3] conclude that household headed by female saves less as compared to household headed by male. In contrast, [38] also examines the impact of gender on household saving and shows that households headed by male are likely to save less as compare to female headed households. The finding of our estimated coefficient of gender is significant. There can be many reasons to the lower saving of a female household heads. First reason is that the services of females are lowly paid in the market as compared to male. Second reason is that the personal expenses of female heads are relatively high as they spend more on their fashion. Third, that female heads care more for the status and involve in competition with other relatives and spends more. Fourth, it is more likely that female heads spend more on their family's health, as they are more inclined to diseases and care more for their children's health. Finally, that female heads are more cautious about the dowry of their daughters and buy lots of durables even many years before the weddings so spending more and hence reduces savings.

4.4 Summary

We estimated the equation in this section to find the factors that determine the saving of households for Kabul, Afghanistan. Wherein, we observed a positive or strictly direct relation between the household income and household saving in the equation. The household size and household saving was negatively related consistently in the equation. Similarly, the education level of household head was also appeared to have an indirect relation with the household saving. In addition to this, the household saving of married head and male headed household was higher from unmarried and female headed household respectively. Furthermore, the relationship between age of household head and household saving were analyzed and it was concluded that both are positively related.

5. Conclusion

Saving may be regarded as the difference between income and consumption expenditure. It is a significant factor in stimulating the growth of a country. Several studies have been carried on positive relationship between the economic growths and saving at macro level and between saving and household's income at micro level. As an important determinant of a growth of economy, it is important to find factors affecting saving at household level. Following our objectives, we put research questions regarding the possible impacts of economic variables and socio-demographic variables households' savings.

Saving has been under discussion among economists for a long time and many studies have been carried out by researchers on various aspects of saving. Different scholars used different models and different data sets on different countries. Researchers used Life Cycle Model, Permanent Income Model, Absolute Income Model and

Relative Income Model in their empirical researchers for different countries. However, due to the nature of our data we used the Absolute Income Model in our study to find the factors that determines the household savings in Afghanistan. We used survey data for our statistical analysis. In the first step we presented descriptive statistics and then we estimated regression analysis. We observed from the estimated findings that income is a major and the most important determinant of household saving. The finding for income was highly significant with positive sign, showed that household income and household saving vary in same direction. Size of the household was observed to have significantly adverse effect on saving of households. Similarly, the level of education of the household head and household saving was also appeared that both are indirectly related. Besides this, it was also noted from the estimated result that the household saving of married head were larger in comparison to an unmarried household head. The household saving headed by a female was found to be lower as compared to those households headed by male. Moreover, the result of age was also observed from the results that initially age had a positive influence on household saving.

5.2 Policy Implications

The results of this study suggest that income is one of the key explanatory variable which positively determines the household saving, thus the government should take the initiative to increase the salaries and wages of the working people and create new earning opportunities both on entrepreneurial level and industrial level to boost the income of individuals. They should provide the facilities of work in a manner in which people can work hourly, daily, weekly and much more flexible timing so that everyone can easily participate in the market.

Due to high education costs people has to spent more on education which make them unable to save much, hence the government should play its role to provide free education at every level (school, college and university). Even if free education for all level is difficult, they should at least provide scholarships to maximum students they can.

Similarly, the size of household is also negatively affect the household saving which is due to same fact that additional child will consume, get education, and spent on their health. Thus, the government should provide free education and health along with some easy housing finance schemes that maximum people should obtain their own houses. This can lessen the hurdles in saving and can possibly boost the household saving in the Afghanistan.

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