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A Tobit Analysis of the Determinants and Potentials of Savings in the Case of Payatas Households

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Abstract: This case study aims to identify the factors affecting household savings in the Area B of Payatas, Quezon City. Particularly, the variables included in the analysis are economic expectations, homeownership, household consumption, household debt, household disposable income, and number of dependents in the household. This paper also aims to analyze the saving potentials of households in Payatas. A total of 422 conditionally and randomly selected households were interviewed through a guided survey questionnaire. The researchers utilized Tobit regression and computed for the conditional marginal effects for both the censored and truncated sample. The results of the study were divided into three: Tobit regression results, conditional marginal effects results on all respondents, and the conditional marginal effects results on household savers. Significant variables such as economic expectations and household disposable income were found to be positively related to household savings, and household consumption was negatively related to household savings. This case study shows that Payatas B households do have saving potentials irrespective of their low income showing high request for accessibility on formal saving institutions.

Keywords: *Tobit model, household savings, disposable income, consumption, economic expectations*

1. Introduction

Household savings rate in the Philippines is one of the lowest in East Asia. From 1994 to 2006, the average household saving rate in the Philippines declined by 5.2 percentage points to about a mere 5 per cent of disposable income (Hagiwara, 2012). This indicates that Filipinos are likely spending a larger portion of their income on immediate consumption rather than on savings for the future (Bersales & Mapa, 2006). According to Orbeta (2005), the saving rates in the country are low, even lower than those of Indonesia, which has lower per capita income. Bangko Sentralng Pilipinas reported that household saving rate had dropped to an all-time low of 0.50 percent in February of 2014. In the same year, it was reported that the number of households with outstanding savings decreased from 30.3 percent during the second quarter to 26.9 percent in the last quarter. Low savings rates have been identified as one of the main reasons why the Philippines has not grown as fast as her neighbors. Growth theories have shown that saving is important for economic growth. According to Misztal (2011), savings and economic development have a one-way relationship for both developed and developing countries. With this in mind, savings can be said to be instrumental in attaining a number of economic goals. Thus, a strong saving performance is an important precondition for achieving economic growth, macroeconomic balance and financial and price stability (Adewuyi, Bankole & Arawomo, 2007). While the impact of saving at the macro level is well documented, research on the micro level of the saving behavior of households especially in the Philippines are still quite a few and much is left to be deliberated.

Given the situation at hand, it is of utmost importance to study the different factors that may affect household savings and appraise Filipinos on the possible ways of how they can save more. In this research, the 2nd district of Quezon City particularly in Payatas is the main focus. It remains a poverty-stricken area though several foundations operate and help improve the living conditions of residents in the said place. In line with this, the researchers are proposing that saving is an important factor in improving the lives of Payatas households and will greatly influence their way of living. To shed more light on the saving behavior of Payatas households, this paper aims to analyze how homeownership, household consumption, household debt, household disposable income, economic expectations, and number of dependents in the household affect savings. This study also analyzes the saving potentials of Payatas B households. This study is structured as follows. Following the introduction section, section II discusses the related studies on household saving in the

Philippines and in other countries, as well as the existing possible factors affecting household saving. Section III presents the data sources used for this paper, describes the method of data gathering, and the econometric model used. Results are then presented and interpreted in section IV and finally, concluding remarks are given in section V.

2. Literature Review

Household Savings: Savings is measured as the excess of income over consumption expenditure. Transforming the given definition to the household perspective, household savings is the difference between household's disposable income and its consumption or expenditures on goods and services. In recent microeconomic studies, household savings is commonly measured in terms of interval data or the continuous data given by respondents in the respective currencies; however, some researchers have utilized household savings as a binary variable of 1 if the household possess savings in any form, or 0 otherwise. Such studies will be discussed at the later part of this paper.

Both theoretical and empirical work on savings, specifically private or household savings, have been explored by many economists; explaining the different determinants of savings that can be grouped loosely under the headings of income and growth, demographic structures, macroeconomic stability, government policy, uncertainty measures, and external variables in different approaches. Among the commonly studied variables in influencing household saving behavior were age (Hailu & Mirach, 2014; Kibet, Mutai, Ouma, Ouma & Owuor, 2009), family size (Orbeta Jr., 2005; Akpan, Udoh & Aya, 2011), educational attainment of the household head (Egwu & Nwibo, 2014; Ahmad & Asghar, 2005), gender (Mumin, Razak & Domanban, 2013) civil status (Rehman, Bashir & Faridi, 2011; Bashir, Hassan, Nasir, Baber & Shahid, 2013) and financial literacy (Mahdzan & Tabiana, 2013; Egwu & Nwibo, 2014). The studies differ from each other in terms of both the method of estimation and the set of data used. Researchers like Alberto & Bersales (2010) and Minh, Nhat, Anh, Duc and Son (2013) exploited the use of secondary data provided by government or private institutions obtained from household income and expenditure surveys in periods of time. On the other hand, some studies employed the use of primary data in gathering household level information by using survey questionnaires or conducting interviews (Bersales & Mapa, 2011; Shitu, 2012).

Economic Expectations: Economic expectations or specifically consumer economic expectations, is the level of optimism or pessimism an individual has on the future economic conditions of the country.In most previous studies, a rise in economic uncertainty, i.e. if households believe there is a larger risk of losing their job, a possibility of increase in the level of prices of goods in the future, or a tendency of receiving less income in the years to come, likely leads to an increase in the amount of precautionary saving that households choose to undertake (Guariglia & Kim, 2004; Chamon, Liu & Prasad, 2013). Researchers like Giavazzi and McMahon (2012) and Cho, Fang and Hanna (2007) utilized consumer surveys in which households answered a number of past and future expectations about the economy and were given an option to answer in better or worse. Using OLS method, Giavazzi and McMahon (2012) focused more on the forward-looking questions and showed a statistically significant coefficient of negative 5.2, indicating that German households save more during uncertainty on the future economic condition. On the other hand, Cho et al. (2007) utilized logistic regression and the results were in line with the hypothesis that U.S households having positive expectations about the economy are less likely to list emergency fund as a saving goal.

Possible proxy variables for economic expectations are consumer sentiment index and consumer confidence index, which Gough (2011) and Klopocka (2013) have utilized in analyzing household saving behavior in the U.S. and Poland, respectively. Generally, both studies used OLS method and have concluded that households save less, if they expect their financial situation to improve. More specifically, Gough (2011) found out that the CSI has a very minor effect in the annual saving rate of U.S. households. If the consumer sentiment index were to increase by 10 units, the model predicts a 0.70% decrease in the annual saving rate, holding other variables constant. Similarly, Klopocka (2013) observed that changes in the propensity to save of households in Poland showed a negative coefficient of 0.16. Though the relationship is negative, the impact is still quite small.

Some micro and macroeconomic studies about household saving have also suggested that positive relationship exists between future economic expectations and household saving (Chowa, Masa & Ansong, 2012; Alessie & Teppa, 2010). Chowa et al. (2012) proved this relationship in Uganda by examining psychological factors and common human characteristics such as optimism or pessimism about future economic conditions, perceived locus of control, attitude towards saving, and self-control. Using hierarchical multiple regression, a 1 unit increase in future economic expectation increases saving by 61%. Likewise, Alessie & Teppa (2010) focused on the role of habit formation in individual preferences. The estimated coefficient of the predicted income change for the next 12 months is an expected negative 0.009, whereas the estimated coefficient for the future income change has the unexpected sign of 0.023. Utilizing logit model, Fisher (2010) explored the Black-White distinction in saving behaviour. The results showed that income uncertainty is statistically significant and positively related to the household saving for white people and the opposite transpired for black people. The coefficients were 0.265 and negative 0.293 respectively. Kostakis (2012) found that upon using OLS model, results were consistent with the precautionary saving hypothesis with the expected positive sign coefficient of 0.483.

Homeownership: For most families, homeownership is the primary form of wealth accumulation (Grinstein-Weiss, Chowa & Casalotti, 2010; Salotti, 2010). In trying to analyze the influence of wealth on household savings, homeownership was used as a proxy in most studies over the past decade. The reason for this is that the estimation of wealth is not easily measurable (Amhad & Asghar, 2005). Several researches have utilized a dummy variable for homeownership, indicating 1 if the respondent is a homeowner or 0 if the respondent is a renter (Chen, Kuan & Lin, 2007; Anong & Fisher, 2012; Rha, Montalto & Hanna, 2006; Mengesha, 2015; Gedela, 2012; Chhoedup, 2013; Chamon & Prasad, 2010). Chen et al. (2007) discovered wealth effect exists for homeowners across the conditional distribution of saving in Taiwanese households. Likewise, Anong and Fisher (2012) examined how saving motives are related to saving habits. Using multinomial logistic regression, results showed those homeowners neither save regularly nor irregularly with a coefficient of negative 0.002 and negative 0.150 respectively, indicating that homeowners do not save.

However, Rha et al. (2006), who also used logistic regression, showed that households who own a house increase their probability of saving with an estimated coefficient of 0.1906. Moreover, Mengesha (2015) investigated the saving behaviour of the households in Jimma zone of Oromia Region, Ethopia. From the total sampled households that have their own homes, 93.4% of them have saving habits whereas from those non-home owners, 78.6% of them have saving habits. The descriptive statistics indicated that household heads that have their own home are better in their saving status compared to those who don't have their own home. The Chi-square test further revealed that there is a statistically significant difference between household who have their own home and household who don't on their saving status.

Although several studies showed that individuals who own a house are saving less, there are some findings that households save more when individuals have their own dwelling. For instance, Fisher (2010) empirically explored Black-White differences in saving behavior by using data from the Survey of Consumer Finances in the U.S and Yao, Wang and Weagley (2011) used the 2008 Survey of China Consumer Finance in determining the saving behavior of Chinese households. Using logistic regression model in both works, either races with own homes have positive impact on household saving showing a coefficient of 0.195 and 0.218, respectively. On the other hand, results showed a significant positive coefficient of 0.223 on Chinese households. Wan (2015) focused on the Chinese urban and rural area, a positive coefficient of 0.063 and a negative coefficient of 0.090, homeowners in urban area are seen to have a higher saving rate than those in rural area. According to Fontes and Gutter (2006), the explanation behind the positive relationship is that those buying a home are more likely to be forward thinking and might be quicker to engage in other forms of savings despite the costs associated with home acquisition.

Household Consumption: Household consumption is defined as the annual sum of the total value of food, other goods, and services that were consumed by the household, the value of gifts and donations given away, and the imputed value of an owner-occupied or a rent-free dwelling unit (Alba & See, 2006). In the Family Income and Expenditure Survey (FIES) in the Philippines, household consumption consists of durable consumption and nondurable consumption. Most studies made use of either of the two categories or both as a measure of total household consumption.

Soharwardi, Khan and Sherani (2014) used children expenditures in determining its effects on household saving in Pakistan. Using the OLS method, a negative 0.782 estimate was found which implied that saving will decrease if the total children expenditures increased. In the same country, Bashir et al. (2013) evaluated gender dissimilarities in saving behavior and its determinants among males and females. A total of 400 questionnaires were selected for study which includes 124 female respondents and 276 for males. In the study, the consumption variable was patterned into four dummy variables: household expenses, medical expenses, education expenses and miscellaneous expenses. Using also the OLS method, household expenses had positive impact for males and negative impact for females on saving behavior with coefficients of 0.257 and negative 0.467, respectively. More so, educational expenses have negative impact on saving behavior of males and vice versa to females garnering coefficients of negative 0.201 and 0.16 respectively. Finally, both medical and miscellaneous expenses have negative coefficient for males and females.

Summing up all of the expenses, Rashid, Nasir, Mustapha, and Kamil (2011) used total expenditures as a measurement of consumption to identify the relationship between household consumption and savings. Utilizing correlation and two stage least square regression, the results showed that an increase in total expenditures increases household savings by 0.04215 units. In the rural area, Teshome, Kassa, Emana and Haji (2013) assessed the saving behaviors of households in East Hararghe Zone, Oromia Regional State, Ethiopia using survey data generated from 700 sample households. From the Tobit model used for analysis, annual expenditure in Birr accumulated a negative coefficient of 0.0010067 but not significant. While studies have concluded that there is negative relationship between household consumption and household saving, there were also studies on rural households in different countries showing positive relationships (Tesfamariam, 2012; Obi-Egbedi, Soneye & Alawode, 2014).Tesfamariam (2012) randomly selected 120 rural household financial co-operators from six rural saving and credit cooperatives through a simple survey in Tigrai Region of Ethopia. Using OLS method, it was found that an increase in consumption leads to an increase in household saving by 0.0379 units. Utilizing the same method, Obi-Egbedi et al. (2014) studied the factors influencing rural household saving in Akinyele local government area of Oyo state, southwestern Nigeria. The result of the regression is consistent with the previous study with a 465.262 coefficient.

Household Debt: Household indebtedness has grown considerably in most developed countries over the past 25 years, sustaining consumption growth and contributing to the decline in the household savings rate (Barba & Pivetti, 2009). Most researchers have used a continuous variable for debt and at the same time exploited the use of OLS method for the analysis (Chhoedup, 2013; Kim, 2010; Nwankwo, Ewuim, & Asoya, 2013). These studies arrived with consistent findings that household debt is negatively associated with household saving. However, using the same econometric method but different approach in the study, Rehman et al. (2011) selected households from lower, middle and higher income group to examine the saving behavior of various income groups in Pakistan. It was concluded that household liabilities in medium and higher income households is a reducing factor of household saving while liabilities in lower income households have no significant effect on their level of saving. On the other hand, various researchers have measured household debt as dummy variable indicating 1 if a debt exists and 0 if otherwise. The same studies have utilized logistic regression model (Niculescu-Aron, 2012; Fisher, 2010). Niculescu-Aron (2012) highlighted some particularities of the Romanian households saving behavior from the perspective of the importance for economic recovery and financial stability of the economy. The model showed a negative coefficient of 0.33 which were in contrast to the hypothesis statement of the study. Fisher (2010) utilized 2007 Survey of Consumer Finances. For both Black and White races, results showed that there is a positive relationship between credit card existence and household savings with a 0.092 coefficient.

In South Africa, Mongale, Mukuddem-Petersen, Petersen, and Meniago (2013) utilized time series data from the South African Reserve Bank. The household savings model is estimated by using the co-integrating vector autoregressive (CVAR) framework. The results of the VECM estimation showed that household debt is negatively associated with household savings through a negative coefficient of 65.49179. Contrastingly, some economic studies proved that household debt can be positively related to household savings knowing that individuals who have liabilities to be paid tend to increase their savings in order to pay for it. According to Mengesha (2015), the proportion of households who have taken credit and not taken credit with savings was 96.2% and 86.2%, respectively. This indicates that households who have taken credit are relatively better in

their saving status than households who have not taken credit. Using Johansen co-integration technique, Krishnan (2012) examined the impact of selected variables on the personal savings behavior from 1980 to 2008 in the United States. One of the selected variables was household debt. It had a 14.055 and was greater than the 5 percent critical value of 3.841.

Supporting the relationship stated above, Sebhatu (2012) using OLS model, investigated the determinants of saving behavior of cooperative members in Tigrai region of Ethiopia. The amount of money borrowed has a positive coefficient and significant at 10%, as expected by the researcher, indicating that a one *birr* increase in credit, raises the household savings by 0.9428 *birr*. From the same perspective but a different approach, Hailu and Mirach (2014) and Teshome et al. (2013) tackled about the household debt using access to credit services as a measure. Using Tobit model, both research have suggested that there is a positive relationship between these variables. Albeit the works of Hailu and Mirach (2014), the variable showed an insignificant result, in the study conducted by Teshome et al. (2013), the variable was significant with a 5685.91 coefficient.

Household Disposable Income: Income has been regarded as the chief determinant of the saving function (Teshome et al., 2013). According to OECD, household disposable income is the sum of wages and salaries, mixed income, net property income, net current transfers and social benefits other than social transfers in kind, less taxes on income and wealth and social security contributions paid by employees, the self-employed and the unemployed. Numerous studies, either using primary or secondary data, have suggested that income is positively related to saving which supports the saving function. Using probit and tobit regression respectively, Shitu (2012) and Hailu and Mirach (2014) analyzed income and saving pattern in South-Western Nigeria and Ethopia. Shitu (2012) found that there is positive and statistically significant effect of income to saving of a probability of saving of 0.044 as income increases 1 unit of *Naira*, while Hailu and Mirach (2014) found that saving increases 0.2258 *Birr* as income increases by 1 unit. Using OLS method, Odoemenem, Ezuhe and Akerele (2013) explored the saving and investment pattern of small scale farmers in Makurdi local government area of Benue State, Nigeria. Evidently shown in the results was that a unit increase in the income of small scale farmers will lead to about 0.573 *Naira* increase in saving. Kibet et al. (2009) investigated the factors that influence savings among households of teachers, entrepreneurs and farmers in rural parts of Nakuru District. It was found that the marginal propensity to save out of income ranges from 0.0605 in the case of teachers to 0.2558 in the case of businessmen, 0.1937 for farmers, and averages 0.1578 for all households. Athukorala and Sen (2004) examined the determinants of private saving in the process of economic development by utilizing estimation, in the light of the Indian experience. It is found that the private saving rate rises with both the level and the rate of growth of disposable income. The results showed that when there is a 1 percent increase in per capita income, there will be an increase of 0.09 percentage point in the private saving rate.

Ahmad, Atiq, Alam, and Butt (2006) employed the use of Johansen co-integration method and error correction model technique in order to examine the long run and the short run dynamics of household saving in Pakistan. It was revealed that both per capita income and its growth rate have significant positive impacts on household saving. The long run elasticity from the coefficients of growth rate and per capita income suggests that a 1 percent increase of both variables yield 0.29 and 0.39 percent increase in household saving, respectively. Khan, Gill and Haneef (2013) also used the same method as the previous researcher in determining the factors affecting private saving in Pakistan and arrived at a 1.18% increase in household saving as per capita income increases by 1 percentage point. Also, Abou and Seoud (2014) analyzed the same variables and utilized the same method. The study resulted to a 0.049 percentage point increase of saving when 1 percent of per capita income increases in Bahrain. Using OLS method, on the other hand, Ahmad and Asghar (2005) concluded that large and rapid increase in income tends to raise the rate of household saving in Pakistan because households' capacity to save increases with household income with a positive coefficient of 0.886. More specifically, their study analyzed that there is 0.794 coefficient exists between savings and income of urban households while a 0.940 coefficient for rural households.

Vast researchers have concluded that household disposable income is positively related to household savings. Asrat and Precious (2014) revealed that contrary to a theoretical expectation, the level of income and household savings are negatively related. Using Johansen co-integration and the error correction mechanism,

the determinants of household savings in South Africa over the period 1990-2011 and were examined. The results were divided into two; short run and long run effects. In the short run, households choose to dissave by a negative coefficient of 0.000178 as income increases by 1 percentage point while in the long run; households have greater chance of decreasing their savings by 180.79.

Number of dependents in the household: Based on provisions in the Philippine Labor Code of 1974, the official working ages in the Philippines is 15 to 64 years old. Basing on the legal delineation for working ages, the implied dependent individuals are age 14 years old and below and 65 years old and above; thus, dependents participate in household activities rather than in the workforce. In relating this variable to household savings, studies have utilized headcount of youth and old dependents, a continuous variable, as a measure (Issahaku, 2011; Odoemenem et al., 2013). Using OLS method in both studies, it showed that the number of dependents negatively relates to household saving. More specifically, increasing the number of dependents by 1 decrease the household saving by 50.8% (Issahaku, 2011). A number of studies analyzed through the OLS method and utilized dependency rate as a measure for this variable (Kibet et al., 2009; Chhoedup, 2013; Rehman et al., 2011). Kibet et al. (2009), focusing on a sample of 359 in the rural parts of the Nakuru District in Kenya, showed a significant result with a coefficient of negative 202.205, presenting a big decline in household saving when the dependency rate is larger. Chhoedup (2013) provided an analysis and documents the extent of saving in Bhutanese households. Results of the regression implied that the total dependency ratio in the household is negatively related to household saving presenting a coefficient of negative 2260.52. Likewise, Ahmad and Asghar (2005) analyzed the household saving behavior in Pakistan. The dependency ratio is found to have a negative influence on household savings for overall Pakistan with a negative coefficient of 0.036 that is statistically significant at the 5 percent level of significance. The results suggest that as the number of the dependent population increases, household saving tends to decline because the expenditure on them increases accordingly.

Using OLS method, Rehman et al. (2011) arrived at different conclusions in Pakistan. The results showed that total dependency rate and income are inducing factors for household saving of lower income groups showing a coefficient for the dependency rate of 2415.21, and saving of middle income group is positively related to total dependency rate of 4644.43. However, for high-income groups, total dependency rate showed a coefficient of negative 2004.56 but not statistically significant. Using the tobit model respectively, Teshome et al. (2013) tried to assess the saving behavior among rural household in Ethiopia. Dependency rate showed a positive coefficient of 77.91499 but was not statistically significant. Ndirangu, Burger, Moll, and Kuyvenhoven (2010) analyzed seasonal demographic factors affecting household savings. Using a sample of 196 households, the estimate for the dependency ratio had the expected negative sign of 6330.44, significant at 5 percent; thus, households with more elderly members save less.

Essentially, Ismail and Rashid (2013) analyzed the determinants of household saving rate in Pakistan using a time series data analysis. Young dependency ratio became statistically significant and followed the expected sign that the short run and long run relationship between household saving and old dependency ratio is also statistically significant with negative 0.550 and negative 0.38 respectively (Khan et al., 2013). However, Asrat and Precious (2014) examined the determinants of household savings in South Africa over the period 1990-2011. The results of the analysis showed that dependency ratio have a positive long run relationship with household savings rate. On the other hand, Alberto and Bersales (2012) identified significant determinants of Philippine agricultural household saving using aggregate regional household panel data from the Family Income and Expenditure Survey (FIES) for the period of 1991 to 2006. Using General Least Squares (GLS) method, the Philippine agricultural household saving with two-way error component fixed effects showed that every percentage point increase in the proportion of young dependents at agricultural households suggests around 1.17 percentage point decrease in estimated mean agricultural household saving rate, all other things being the same.

3. Methodology

To analyze the determinants of household savings, Tobit regression (Tobin, 1958) was used as specified in **Equation 1** and was derived from the works of Teshome et al. (2013) and Hailu and Mirach (2014). The explanatory variables were measured as follows: Economic expectations as an index derived from the Likert

scale; homeownership as a binary variable; 1 if households own their homes and 0 otherwise, household consumption, household debt, household disposable income, and number of dependents in the household as a discrete variable of the total headcount of young and old dependents.

Equation 1: Tobit regression equation

$$Y_i^* = X_i\beta + \mu_i \qquad i = 1,2 \dots 422 \qquad Y_i = \begin{cases} Y_i^* \; If \; Y_i^* > 0 \\ 0 \; If \; Y_i^* \leq 0 \end{cases}$$

where, Y_i = the observed amount of household savings
Y_i^* = the latent variable which is not observed
β = vector of unknown parameters
X_i = vector of independent variable affecting household savings (HSAV)
μ_i = normally distributed error term with mean zero and variance σ^2

4. Results and Discussion

Only household disposable income (HDINC), economic expectations (ECOEXPEC), and consumption (HCONSUMP) are statistically significant and conform to the hypothesis of the researchers. The income and economic expectation variable show a positive relationship to savings. As income increases by one unit or in this case 1000 PHP, the desired savings increase by 359.17 PHP all things constant. Moreover, a one unit increase in economic expectations increases the desired propensity to save of households by 1,145.39 PHP. The consumption variable has the expected negative impact to savings which explains that as consumption increases by 1000 PHP, the desired savings decrease by 297.42 PHP.

Table 1: Tobit regression Results

Variables	Coef.	P>|t|
Home	541.3991	0.324
Numdep	8.695617	0.955
Hdinc	.3591741	0.000
Hconsump	-.2974215	0.000
Hdebt	.0188268	0.697
Ecoexpec	1145.391	0.011
_Cons	-4821.707	0.000

The researchers are also interested on the marginal impact of the explanatory variables on the mean value of the actual values observed in the sample to compare it to the desired values. Consistent with the previous results, income and economic expectations have positive relationship to savings, and negative relationship for consumption manifested in **Table 2**. As household disposable income (HDINC) increases by 1,000 PHP, the average actual amount of savings by individuals in Payatas, increases by 149.22 PHP. Moreover, an increase in economic expectations *i.e.* when individuals expect next year to be worse than the current year, their average actual amount of savings increases by 474.86 PHP. On the other hand, as consumption increases by 1,000 PHP, the average amount of savings decreases by 123.57 PHP.

Table 2: Conditional marginal effects results on all households

Variables	dy/dx	P>|z|
Home	224.9322	0.324
Numdep	3.612722	0.954
Hdinc	.1492242	0.000
Hconsump	-.1235681	0.000
Hdebt	.0078219	0.697
Ecoexpec	474.8695	0.011

On the other hand, to assess the effects of changes in the explanatory variables on the intensity of households who are savers, **Table 3** shows the result of the conditional marginal effect on the truncated sample. To expound, as household disposable income increases by 1,000 PHP, the average actual amount of savings by households who save in Payatas, increases by 114.74 PHP. Moreover, when household savers expect next year to be worse than the current year, their average actual amount of savings increases by 365.89 PHP and as consumption increases by 1,000 PHP, statistics show that their average actual amount of savings decreases by 95.01 PHP.

Table 3: Conditional marginal effects results on Household Savers

Variables	dy/dx	P>|z|
Home	172.9461	0.324
Numdep	2.777704	0.954
Hdinc	.1147356	0.000
Hconsump	-.0950092	0.000
Hdebt	.0060141	0.697
Ecoexpec	365.8872	0.011

In the Tobit model, a unit change in the value of a regressor has two effects: (1) the effect on the mean value of the observed regressand, and (2) the effect on the probability that Y* is actually observed (Gujarati, 2012). In relation to this, **Table 4** illustrates the second effect of the Tobit model. To interpret, for every increase in household disposable income and economic expectation, the change in probability of household to save increases by .003% and 9.6%, respectively. On the other hand, as consumption increases, the change in probability of households to save decreases by .00249%.

Table 4: Conditional marginal effects on the probability of being Household Savers

Variables	dy/dx	P>|z|
Home	.0452444	0.324
Numdep	.0007267	0.954
Hdinc	.00003	0.000
Hconsump	-.0000249	0.000
Hdebt	1.57e-06	0.697
Ecoexpec	.0957197	0.011

5. Conclusion and Recommendations

The researchers conclude that there is a propensity to save in Payatas B despite the low income earned by households. It was found that Payatas households desire to increase their savings further and there are significant differences on their desired and actual savings. It was concluded that both household disposable income and economic expectations (worsening prospects of the economy) have positive influence on saving, while consumption has negative influence on saving. On the other hand, the other remaining variables such as homeownership, household debt, and number of dependents were proven to be statistically insignificant and have failed to form a link with household savings. Given the significant findings of the income factor, Barangay Payatas should provide job opportunities, business investments, and medium and long run loans in order to boost households' income level through partnerships with financial and non-financial institutions. The government should reach out conditional cash transfers such as the 4Ps or the *Pantawid Pamilya Pilipino Program* to the barangay. In this manner, a significant portion of households in Payatas B will shift to a higher income bracket, giving way for more opportunities to save. Furthermore, household heads should be given adequate information about being mindful of the spending behavior of their families as the consumption variable was proven to be statistically significant.

This can be achieved through seminars and conferences initiated by banks and other financial intermediaries.

Earlier in 2015, residents of Payatas have been given easier access to formal financial services with the launch of mobile banking. This savings movement should be monitored and vigorously pursued to provide opportunities for saving to households with low income earners. In order to self-insure against uncertainty, Barangay Payatas should provide financial and economic education to Payatas residents that will increase awareness and will enable them to forecast and perceive the economy more accurately. One way is to distribute a weekly publication of a simplified economic update and to encourage them to engage in talks and discussions about the current events in the country. These recommendations boil down to the pursuance of formal education where individuals can now practice specialization and move to a higher income bracket, leading to an increase in their household saving. Another way to increase the welfare of Payatas residents is to continue to empower them in engaging in *Payatas Poverty Alleviation Foundation.* It is a non-stock, non-profit organization that was set up to be an anti-poverty, non-government organization (NGO) primarily to benefit the residents of Barangay Payatas and also the other less advantaged people of Quezon City. Residents should take advantage of the livelihood activities and programs it offers such as skill training programs, values workshops, cooperative development, microcredit/microfinance, etc. The government should not hesitate in allocating budget to these kinds of communities since it will definitely enhance the lives of many in Payatas.

While this paper provides significant results, it is recommended that more in-depth studies on household savings be conducted in order to address other problems, enlighten the general public, and push national and local governments to set policies and programs related to it. If the main focus is whole of Payatas and all its residents, it would be better to include other areas of Payatas, such as Payatas A and LupangPangako. In this case, the sample size will be bigger and more respondents will be examined. Future researchers may also focus on other areas may be it rural or urban with low income earning households or on other possible determinants not considered in the study. Paper wise, this study also does not guarantee accurate results because of some possible errors respondents might have committed during the survey process. Bias and/or dishonest answers of the respondents are unknown from the researchers. As far as the researchers' knowledge, the pieces of information gathered during the survey are accurate.

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