

# Facilitating and Inhibiting Factors of Entrepreneurial Activities of OFW-Dependent Households<sup>1</sup>

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## ABSTRACT

One of the competitive advantages of the Philippines is the export of manpower, through its Overseas Filipino Workers (OFWs). This has stimulated the economy and improved the welfare of households through enhanced expenditures in various family sustenance activities financed by remittances. In this study, we highlight how OFW-dependent households use remittances in entrepreneurship. By utilizing a qualitative response model (QRM) approach, we estimated the effects of facilitating and inhibiting factors on the decision of OFW-dependent households to engage in entrepreneurial activities. Results provided a framework on their decision-making process regarding the productive use of their remittances - invest in additional income generating activities, that is, through entrepreneurial activities. Moreover, it was generalized that the more influential factor is savings and/or wealth. In the Philippines, being an entrepreneur engaging in micro and small enterprises is a “coping up mechanism” to those who cannot or are having difficulties entering the formal labor force; otherwise, they will work.

**Keywords:** *entrepreneurship, logistic regression, Overseas Filipino Workers, remittances*

## I. Introduction

The Philippines has been a manpower exporting economy registering 10 percent of its 90 million people, as of 2010, living and working in at least 200 destinations across the globe as professionals, skilled, and unskilled workers. In addition, Remo (2012) reported that about 10 percent of Filipino households are considered to be partly or fully dependent on remittances sent by overseas-based families. Limited domestic employment opportunities and the high compensation package relative to the Philippines attract them to seek overseas employment. According to Macaraeg (2005), Filipinos are in demand abroad because of their aptitude in English, their schooling in Western standards of education, their reputation of being hardworking, ingenious, pliable, and patient employees with a willingness to accept a lower compensation, and as a value added to some employers, their observance to some religious (Christian) values. In contemporary periods, this scenario has become a fixture in the country affecting the social, economic and cultural make-up of Filipinos. The magnitude of Overseas Filipino Workers (OFWs) and the

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increasing amount of remittances that they sent to their families on a regular basis amounting to USD 20,116,992,000.00 as of 2011 and USD 17,498,157,000.00 as of January to October 2012 as per the statistics from the Bangko Sentral ng Pilipinas (BSP). OFW remittances contribute so much to the economy's growth on a macroeconomic level since it promotes competitiveness in terms of the exchange rate. On a microeconomic level however, the effects vary. Typically, OFWs are strained to work abroad in order to augment family income. Hence, remittances affect a household's consumption patterns, which results in more expenditure on food, education, and leisure. It also enhances the household's propensity to save. Accumulated earnings allow investments that would not have otherwise been made due to credit constraints and large capital requirements (Yang, 2008). The vast opportunities abroad stimulate the desire of Filipinos to earn more. This international migration continues to be an important component of Philippine development especially among households with migrant workers, the proportion of which is steadily increasing (Orbeta, 2008).

Existing literature have not exhaustively mentioned how OFWs and their households utilize remittances in terms of new business creation. Human capital and entrepreneurial ideas however, may be accumulated when working overseas which may be used for business (McCormick & Wahba, 2001). OFWs, who engage in business, venture into different types of businesses. Some settle for a micro-store that caters to the needs of the immediate community while some engage in a more complex business model like real estate (Aldaba, Chua, Guarnes & Ong, 2010). Furthermore, food franchises were ranked as the top business ventures that OFWs likely go into (Llamas, 2010). This type of venture has the potential for quick profit and requires minimal capital which makes it attractive. A successful business venture primarily depends on the skills and training the entrepreneur possesses. Engaging in business further augments household income of OFW families and for most, serve as the incentive for going into business further. Knowledge transfer is also positively related to business creation (Brinkerhoff, 2006). This allows a concept of "brain gain" as opposed to the concept of "brain drain."

Given this backdrop, we shall investigate the behavior of OFW-dependent households towards business creation with respect to individual and household characteristics and their receipts of remittances. Hence, our primary research question is: How do OFW-dependent households' characteristics affect their decision to invest their money in entrepreneurial activities? Specifically, we have the following objectives:

- To determine the effects of various selected factors on an OFW-dependent

hand, the government will incubate policies on how to aid and provide support for the OFWs through helping them manage and grow their money.

An important component of this strategy is to enhance the potential of remittances and other migration benefits to develop the country's micro, small, and medium enterprises (MSMEs). In fact, there is ample international evidence supporting the case that indeed remittance from OFWs can be harnessed for generating local investment opportunities. However, despite policies providing an enabling environment for the growth of MSMEs, this sector still suffers from low access to capital and technology, low productivity, unskilled workers, and lack of access to productive inputs. It is argued that gains from OFWs (i.e., remittances, new skills, new technology, social capital, and others) can help create opportunities for enterprise development and entrepreneurial activities.

## **II. Literature Review and Conceptual Framework**

### **2.1. Factors of Entrepreneurial Activities**

There are certain personal characteristics that may facilitate or inhibit individuals to pursue entrepreneurial activities. Although it is very difficult to measure certain qualities that may engender entrepreneurship, there are certain indicators such as, but is not limited to, education, age, wealth, and work experience. Likewise, existing literature has documented various key determinants of self-employment or entrepreneurship wherein environmental factors, demographic factors, and individual intrinsic characteristics influence decisions on becoming an entrepreneur as shown in Figure 1.

As argued by Pinoy-Business (n.d.), OFWs must not rely on favorable exchange rate and must not consider working abroad simply as workers – they must become entrepreneurs since they are better equipped since they are exposed to foreign cultures that force them to work harder, be on time, be disciplined, and be confident. That is, they are naturally exposed to new ideas abroad.

#### **2.1.1. Education**

Education is deemed to be a facilitating factor because the skills and knowledge acquired in higher education can be applied through entrepreneurial activities. The educational attainment of a potential entrepreneur may have a positive effect on engaging

Various literatures have posited that education is also an essential factor in the decision to engage in entrepreneurial activities - that the educational attainment of an individual has a direct relationship with the creation of businesses and its success. According to Bruderl, Preisendirfer & Ziegler (1992), the chance of survival of a new business is positively affected by the length of stay that the owner had in school. Also, Mata (1996) suggested that entrepreneurs and business owners who are better educated create larger companies. Hisrich & Brush (1988) found out that research experience, educational level, managerial skills have impacts on success of entrepreneurship.

The reason for this positive relationship has been argued by Rogoff, Lee & Heck (2001) that education increases an individual's personal confidence and self worth, which are considered to be necessary characteristics for entrepreneurial success. Venturing into business is always accompanied by risks. Based on the findings of Robinson & Sexton (1994), increases in educational attainment amplify the probability of venturing into business; leading to increased business longevity; which also leads to a direct relationship with revenue brought about by increases in self-confidence that mitigate the risk that an entrepreneur has to experience. Light & Rosenstein (1995) provided empirical evidence wherein each additional year of education increases the chances of a worker venturing into self-employment by 0.7 percent. Meanwhile, Robinson & Sexton (1994) measured this relationship at 0.8 percent together with the USD 1,208.00 increase in revenue for each additional year of education.

Hence, education plays a significant role for the success of salaried workers and the success of those who are self-employed. Furthermore, Rogoff, Lee & Heck (2001) emphasized that highly educated entrepreneurs have the tendency to utilize technology as a tool of success that aid businesses to be more successful in terms of financial and size scale. Finally, results by Hosseini, Mirdamadi & Nejad (2009) revealed that there is a need for more training and education especially for rural women to improve their entrepreneurial activities.

### **2.1.2. Age**

Age is another important personal characteristic (Bates, 1995; Beugelsdijk & Noorderhaven, 2005; Davidsson & Honig, 2003; Dunn & Holtz-Eakin, 2000; Hout & Rosen, 2000; Thurik, Carree, Van Stel & Audretsch, 2008). Usually, young people are more entrepreneurial since they are more mobile occupationally, more creative, and have lower

Hisrich & Brush (1988) found that age the age of the entrepreneur may affect entrepreneurial activities indirectly due to the other key determinants such as accumulation of human capital (Carroll, Holtz-Eakin, Rider & Rosen, 2000; and Millán Tapia, 2008), financial capability, social capital (Millán Tapia, 2008), risk aversion (Holtz-Eakin, Joulfaian & Rosen, 1994) and health status (Weber & Schaper, 2003). However, the study of Mata (1996) suggested that older entrepreneurs are more inclined to create larger companies which may be attributed to the higher human capital gained through years of prior work and experience. However, it can also be perceived that entrepreneurs and business owners is not restricted to older people due to changing trends in the business community. Still, the literature is not converging on a unified conclusion. Delmar & Davidsson (2000) derived a negative relationship while Borjas & Bronars (1989) and Lin, Picot, & Compton (2000) concluded on a positive relationship. Meanwhile, Rees & Shah (1986) and Georgellis, Sessions & Tsitsianis (2005) reported a non-linear relationship. On the other hand, most experimental studies suggested a positive and concave shaped relationship between the individual's age and entrepreneurial activities.

### **2.1.3. Wealth, Income, and Savings**

Similar to labor force participation rate, a large wealth, mostly physical and land, may hold back a wealthy individual from seeking employment, formally or informally. These individuals are satisfied with the income they receive from the returns of their accumulated assets. Retired individuals may have relative wealth and may not be willing to gamble their wealth in entrepreneurship activities. On the other hand, the wealth that they possess is a viable source of capital that can be used to further increase income and their stock of wealth.

Likewise, there are inconsistent findings on the influence of income on the level of self-employment – (1) if the wage rate is high then the opportunity cost of self-employment is high; and (2) high salaries are an indicator of an affluent economy with above average rates of small business survival; and (3) high income levels indicate that founders find start up financial capital and at a lower cost Verheul, Wennekers, Audretsch & Thurik (2001).

According to the Asian Development Bank [ADB] (2006) and Ang, Guntur & Shikha (2009), the households who receive remittances earn more from their investments and save more than their non-receiving counterparts. This can be a source of motivation for

Likewise, according to Lingelbach, De La Vina & Asel (2005), entrepreneurs rely on informal sources of financial funds, which include personal savings and household savings to start their own business. Hence, it can be concluded that external funding plays a limited role in entrepreneurial funding. Also, Basu & Parker (2001), agreed that self-financing is a key determinant in starting up a business.

According to Woodruff & Zenteno (2001), "access to capital provided by savings of returning migrants or remittances from family members may affect the decision to start an enterprise, the size of the enterprise conditional on start-up, or the probability the firm remains in business." Moreover, Woodruff & Zenteno (2001) concluded that entrepreneurs finance their investment almost entirely through personal savings and loans from family and friends. About 24 percent only of the firms reported having received loans to start their business and 80 percent of which reported that the source of loan was from a family or friend, meaning only 20 percent of those that received loans are from sources other than savings (i.e., financial institutions and microfinancing). Similarly, according to McCormick & Wahba (2001) and Mesnard (2004), individuals who have higher savings are much more inclined to become entrepreneurs. McCormick & Wahba (2001) established that increase in overseas savings, defined as the money kept within the migrant worker's pockets, results in an increase in probability of entrepreneurial activity. Overseas workers usually face capital constraints in fuelling productive investments but given overseas savings, capital constraints will be less likely a problem once they return home (McCormick & Wahba 2001). Likewise, Mesnard (2004) indicated that there is no evidence to reject the exogeneity of savings and further results showed that savings positively affect the probability of migrant workers upon return to be self-employed.

According to the ADB (2006), remittances in the Philippines are used for basic financial activities wherein aside from consumption, 82 percent of recipients maintain a savings account, while 19 percent uses the remittances to keep a small family or commercial business and 15 percent uses remittances to take out a mortgage loan. Thus, savings can reinforce entrepreneurial behavior due to the increase in excess income.

#### **2.1.4. Work Experience**

An individual's work experience is related with his or her age. Most of the entrepreneurial activities were learned from the formal employment sector, locally or internationally. It may be that the experience they have acquired may be a facilitating

more apt to become entrepreneurs (Evans & Leighton, 1989 and Delmar & Davidson, 2000).

### **2.1.5. Family Size**

Household size is also regarded as a factor of entrepreneurship. Ciarilli, Parto & Savona (2009) reported that household size has a positive effect on the probability of entrepreneurship. A large household size in a labor-abundant economy is more inclined to have small businesses due to survival and risk diversification. This implies that in the Philippines, larger households are more likely to engage in entrepreneurship. However, Gajigo (2007) observed the number of individuals in a household has little effect on the probability of individuals engaging in business or self employment. Meanwhile, on a macroeconomic level, according to the International Labor Organization [ILO] (1990), the population growth rate is a statistic that can have various interpretations for enabling entrepreneurship - economies experiencing population growth have a larger portion of entrepreneurs in their workforce than population not experiencing growth. However, population changes have other indirect effects on entrepreneurship levels. First, according to Storey (1994), if a nation is experiencing rising levels of immigration, levels of entrepreneurship tend to increase as well. Population growth, as per Verheul, et al. (2001), has the tendency to put pressure on wages; thus, lowering the opportunity cost of starting a business. This would make entrepreneurship a more attractive career option. Third, population growth has the effect of increasing demand for consumer goods which increases market opportunities for new products and services.

### **2.1.6. External Remittances**

By and large, according to Rivera & Reyes (2011), the reasons why an overseas worker prefers to work abroad revolve around the ultimate objective of achieving financial security. A migrant worker can be deployed in white and blue collared jobs. These migrant workers, who are often deployed in developed countries, are able to earn a higher income relative to what they can earn in the Philippines. Hence, due to the much higher income, in the form of remittances, earned by overseas workers; the probability of entrepreneurship rises because they are able to provide the financial resources to start their own business. Therefore, remittances can induce entrepreneurship of OFW-dependent households as seen by the positive and statistically significant impact of remittances on the probability that a household will engage in entrepreneurial activities. However, it must also be noted

reside in the Philippines, there is now an alternative source of income since getting another contract abroad is not guaranteed. Meanwhile, MSMEs will provide employment and contribute to national income growth. In addition, investing in a business means placing remittances into productive use and a rational entrepreneur will always drive its business to its maximum potential (Rivera & Reyes, 2011).

For instance, as per the reports of Remo (2012), more OFW-dependent households reliant on remittances are expected to venture into business as the appreciation of the Philippine currency has cut the value of the foreign currency they receive from abroad. According to *Esquire Financing Inc.*<sup>2</sup> as cited by Remo (2012), with the strong domestic currency pulling down the value of remittances, recipient households may be pushed to engage in business to boost or augment their income. Entrepreneurship among OFW-dependent household is being driven by the positive outlook on the economy and the strengthening of the PHP, which is expected to continue in the years ahead. Hence, if this continues, the income of OFW-dependent household will shrink if the family will not engage in other income-generating activities. Moreover, according to the BSP, there is a gradual rise in the number of OFW-dependent households who are investing the money received from family members abroad. As cited by Remo (2012), in a survey conducted by the BSP, during the first quarter of 2012, "8.5 percent of remittance-dependent households in the country reported to have invested some of the money sent home by family members working abroad. This was up from 6.4 percent recorded in the same period last year." Moreover, as cited by Remo (2012), "the BSP has projected that remittances will grow by at least 5 percent this year from last year's USD 20.1 billion. In Peso terms, however, economists expect remittances in local terms to post minimal growth because of the appreciation of the Peso against the greenback. Meanwhile, according to Pinoy-Business (n.d.), businesses oftentimes require a huge capital - something that the small entrepreneurs may not have at their disposal; however, imagine if the OFWs liaise to form a cooperative, they will indeed benefit from it not only because they themselves are the customers, but they'll generate income from it. However, its feasibility is still something to be seen.

According to Andes (2012), there are many success stories of OFWs that turned into entrepreneurs; however, some also fail (who were not able to build their own homes; whose children did not finish school; and whose business ventures flopped). Likewise, some OFWs begin establishing businesses while still abroad that in addition to their savings, they take out additional loans for their venture: when their venture suffer financial

again because nothing happens to the businesses they establish (Andes, 2012). The succeeding paragraph presents some success stories of OFWs turned entrepreneurs.

Back in December 2006, five OFWs were renowned for their success in entrepreneurship as listed by Pinoy-Business (n.d.). These inspiring and successful OFW-entrepreneurs are the following: (1) *Agnes Marrero from the Mountain Province* – now managing a family resort, a dry goods store, and a banana plantation in Tadian, Mountain Province, a mother of four, she worked as a domestic helper in Hong Kong SAR, China for 15 years; (2) *Eugenio Tayag from Tuguegarao, Cagayan Valley* – a medical doctor, now has a farm and a ranch in Tuguegarao, while at the same time working as the City Health Officer of Tuguegarao, he previously worked in Jeddah, Saudi Arabia; (3) *Consuelo Valencia from London, United Kingdom* – became a successful businesswoman by setting up remittance, freight and travel services, ventured into the sales of phone cards and real estate and recruitment and publishing house business, she was a domestic drudge in London; (4) *Michael Abubakar from Sulu* – a civil engineer, he returned home to build homes for the homeless in conflict-stricken Sulu, he worked in the Saudi Arabia for 27 years; and (5) *Norma Macalindong from Batangas* – successfully ventured into selling Filipino food and products in Rome, Italy, she previously worked in Rome as a part-time domestic helper.

## **2.2. Environmental Factors of Entrepreneurial Activities**

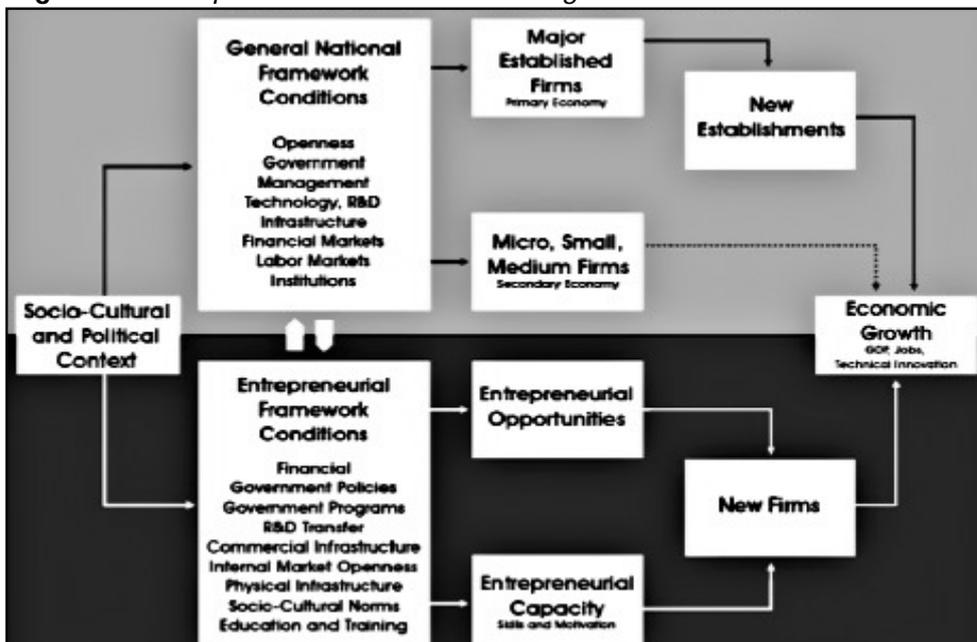
### **2.2.1. Economic Environment**

Entrepreneurship exists under any economic condition; that is, the state of an economy influences the tendency and form of entrepreneurial activity. According to Fuduric (2008), economic conditions affecting the type of opportunities available are: the stability of macroeconomic conditions and the level of economic growth, employment levels, income disparity, capital availability and taxation. When an economy experiences stable macroeconomic conditions and sustained economic growth, investor confidence increases and the higher the likelihood that the form of entrepreneurship being manifested is also of a higher value to society. Often in such environments, low-value, low-innovation entrepreneurship will decrease in favor of employment and high value, innovative entrepreneurship will increase because the environmental conditions have improved enough to provide higher value resources.

The state of economic health and enhanced entrepreneurial activities possesses a

As a matter of policy on a macroeconomic level, Motohashi (n.d.) emphasized on (1) foreign direct investment regulation through growth by inward FDI, which can be a national strategy for industrial development; (2) differentiation in industry and product architecture, for instance between modular electronics vis-à-vis integral automobile; (3) positioning oneself inside the global supply chain is vital to build indigenous capabilities. That is, innovations in SMEs become an important policy. Moreover, as reported by Beduya (2011), the incumbent Aquino Administration included entrepreneurship and innovation policy to its flagship programs to achieve inclusive development. In the Philippines, enterprise by necessity is entrenched in the social framework, expediting the process from entrepreneurship to innovation by policy is a viable option to achieve real inclusive development. Beduya (2011) asserted that even if modern macroeconomic planners can say that innovation and entrepreneurship do not matter in their models; pragmatic individuals managing actual businesses say they do matter. For instance, infrastructure-focused public-private partnership is a trickle-down strategy designed to bridge a financing gap between savings and investment since investment and growth are related.

**Figure 2. Entrepreneurial Process Affecting National Economic Growth.**



Source: Beduya (2011); Global Entrepreneurship Monitor (GEM), Website: <http://www.gemconsortium.org>

capital is widely assumed to be a pivotal asset affecting the probability of funding for new ventures and their longer-term success, the concept has attracted the attention of policy-makers who aim to promote new business venturing as a strategy to improve economic performance among their constituencies. That is, assisting individuals to build their social capital by forging links between inventors, potential entrepreneurs, venture capitalists and other related key actors who control start-up resources.

Meanwhile, Audretsch, Aldridge & Sanders (n.d.) as cited in Thornton, Ribeiro-Soriano & Urbano (2011) provided evidence that networking is a determinant for individuals to establish new business ventures. Overall, their findings revealed that the networking event they have established in the study did facilitate entrepreneurship and innovation by those who participated. This can be explained by the fact that entrepreneurs require help to mobilize social capital. However, it is not just building networks that is important but also how they are built that counts in terms of the value of an entrepreneur's social capital and the capacity of their relationships to manifest strategic resources whether it be finding a job (Granovetter, 1985) or discovering and maximizing value on an entrepreneurial idea (Burt, 2004). Thus, according Thornton, Ribeiro-Soriano & Urbano (2011), the contingent value of different network structures in the start-up context is vital wherein under what conditions it is better for the entrepreneur to have cohesion or structural holes in their networks represents important unexplored areas in which to elaborate and apply existing network theory to entrepreneurship scholarship. Lastly, according to Zhang, Soh & Wong (n.d.) as cited in Thornton, Ribeiro-Soriano & Urbano (2011), social networks are useful information channels and entrepreneurs are more likely to turn to interpersonal ties for seeking contacts or acquiring resources. It revealed the importance of both formal and informal institutions and organizations in understanding the contingent value of social capital to entrepreneurial activity.

### **2.2.3. Institutional Factors**

One of the most common ways by which individuals become entrepreneurs is through starting-up their own business, in the form of a micro-store, by using the savings they have from working either in the domestic labor market or abroad. These stores are a viable option especially for households in the lower income margin. Another productive way on how individuals can use up their savings is to invest in franchising or by pooling funds to invest in a larger business ventures and to harness economies of scale. Investing in small businesses may potentially result in having a higher income than working abroad.

Department of Labor and Employment (DOLE) provide benefits and services to migrant workers through reintegration programs that provide business counselling, financial literacy seminars, and livelihood programs to returning OFWs. Furthermore, OWWA partnered with the National Livelihood Development Corporation (NLDC) to provide OFW households with seed money through loans. (Overseas Welfare Workers Administration [OWWA], n.d)

On the other hand, NGOs also have their own programs to help Filipinos become entrepreneurs. For instance, *Unlad Kabayan* has developed the Migrant Savings and Alternative Investment for Community Development and Reintegration (MSAI-CDR), which provides workers with investment mobilization, credit services, business incubation, enterprise development services, technical skills training, and partnership building (Unlad Kabayan, n.d.).

The opportunity to become an entrepreneur in the Philippines is indeed feasible. The government, together with NGOs, has been doing initial steps by establishing several programs that will help OFWs enter into entrepreneurship. Venturing into business enterprises through the use of remittances can potentially increase household income on the microeconomic level and address national issues specifically poverty through the provision of employment. One of the advocacies that see the opportunity of entrepreneurship as means of poverty reduction is the *Go Negosyo*. It is an advocacy of the Philippine Center for Entrepreneurship (PCE) that aims to change the risk aversion of Filipinos towards entrepreneurship. Through their caravans, business seminars, multimedia campaign, and publications, *Go Negosyo* believes that it can influence entrepreneurship as an alternative for unemployment and temporary labor migration. Generally, it is an advocacy serving as an avenue for Filipinos seeking business opportunities to various programs, partnerships, and seminars that will potentially entice them to engage in business. Likewise, it aims to develop entrepreneurship among Filipinos which could serve as a catalyst in spearheading the Philippine economy.

There is also the Flexi-Fund Program of the Philippine Social Security System (SSS), a voluntary provident fund that caters to OFWs' financial security. It encourages OFWs to save while they work abroad. Also, it is a program where OFWs can save more for the future by paying an amount aside from regular monthly SSS premiums. Alternatively, an OFW can pay his or her contribution to the provident fund anytime after the payment of the maximum required regular SSS membership monthly contribution has been made. Hence.

funds for the accumulation of the funds for financial needs, early withdrawals for financing, holding onto the fund until retirement, as well as business ventures (GMANews.TV, 2008).

### **III. Operational Framework and Methodology**

#### **3.1. Maximum Likelihood Estimation: The Multinomial Logistic Regression**

Qualitative Response Model (QRM) involves a dependent variable that indicates in which one of  $m$  mutually exclusive categories the outcome of interest belongs in which no ordering is required for the categories (Gujarati & Porter, 2009). From the household survey data of the merged FIES-LFS-SOF from the National Statistics Office (NSO), only the households with OFWs with remittances are considered whether they are engaged in entrepreneurial activities or not; hence, the sample would only be composed of OFW-dependent households.

The Family Income and Expenditure Survey (FIES) provides data on family income and expenditure which include among others levels of consumption by item of expenditure as well sources of income in cash and in kind. It specifically discusses levels of living and disparities in income and spending patterns of families belonging to different income groups. Likewise, it also includes related information such as number of family members employed for pay or profit or as wage, salary, or own-account workers; occupation, age, and educational attainment of household head; and other household characteristics. This dataset is released by the NSO every three years. Meanwhile, the Labor Force Survey (LFS) captures Philippine labor force and its socioeconomic characteristics. It is conducted every quarter by the NSO. It provides users with additional insights on the size, structure, composition, and implications of the growing work force to the country's economy. In addition, the Survey of Overseas Filipinos (SOF) is released in response to the need for more accurate data on the number of OFWs and their socioeconomic characteristics. This report provides figures and insights that serve as basis for drawing up policies and plans for development programs.

For this study, categorization is done on whether an OFW-dependent household is engaged in some significant entrepreneurial activity with an annual total income of greater than or equal to PHP 100,000.00; an OFW-dependent household is engaged in some entrepreneurial activity with an annual total income of less than PHP 100,000.00; an OFW-dependent household who is not engaged in any entrepreneurial activity (indicating a PHP

different depending on the type of organization and creativity involved – it ranges in scale from solo projects (even involving the entrepreneur only part-time) to major undertakings creating many job opportunities. Many high-valued entrepreneurial ventures seek venture capital or seed money coming from angel capitalists in order to raise capital to establish a business. However, this is not plausible with the existing dataset because we would also be eliminating those households that do not engage in entrepreneurial activities, defeating the purpose of the logistic regression, and those who just incurred net income losses.

We implement a qualitative response model, specifically the multinomial logistic model enabling us to determine the probabilities of the different possible outcomes of a categorically distributed variable given independent variables of different natures.

Culled from Cameron & Trivedi (2005) on the multinomial logistic model, there are  $m$  categories in the model, and the dependent variable  $y$  is defined to take the value of  $j$  for the  $j$ th outcome where  $j = 1, \dots, m$ . The probability that alternative  $j$  is chosen is represented by Equation 1:

$$p_j = \Pr[y = j] \text{ for } j = 1, \dots, m. \quad (1)$$

Introduce  $m$  binary variables for each observation  $y$ ,

$$y_j = \begin{cases} 1 & y = j \\ 0 & y \neq j \end{cases} \quad (2)$$

Therefore, if the observed outcome is  $j$ , then  $y_j$  equals 1 and the remaining observations  $y_k$  will equal zero. For each observation on  $y$ , there will be only 1 nonzero value of  $y_j$ ,  $j = 1, 2, \dots, m$ . The multinomial density a single observation can be written as:

$$f(y) = p_1^{y_1} \times \dots \times p_m^{y_m} = \prod_{j=1}^m p_j^{y_j} \quad (3)$$

We introduce a subscript  $i$  for the  $i$ th respondent and regressors  $x_i$  for the regression models. Specify a model for the probability that individual  $i$  chooses the  $j$ th alternative,

In Equation 5, the subscript  $i$  denotes the  $i^{\text{th}}$  of  $N$  individuals and the subscript  $j$  denotes the  $j^{\text{th}}$  of  $m$  alternatives. The log-likelihood function is given by:

$$\ell = \ln L_N = \sum_{i=1}^N \sum_{j=1}^m y_{ij} \ln p_{ij} \quad (6)$$

where  $p_{ij} = F_j(x_i, \beta)$  is a multinomial logit probability function of parameters  $\beta$  and regressors defined in Equation 4 and the maximum likelihood estimation (MLE) is used to estimate the parameters. Hence, the first order conditions for the MLE  $\beta$  are that it solves

$$\frac{\partial \ell}{\partial \beta} = \sum_{i=1}^N \sum_{j=1}^m \frac{y_{ij}}{p_{ij}} \frac{\partial p_{ij}}{\partial \beta} = 0 \quad (7)$$

which is nonlinear in  $\beta$ . The distribution of  $y_i$  is necessarily multinomial so correct specification of the data generating process means correct specification of the functional form  $F_j(x_i, \beta)$  for the probabilities  $p_{ij}$ . This ensures consistency as then  $E[y_{ij}] = p_{ij}$ , so taking expectations of Equation 7 yields  $E[\partial \ell / \partial \beta] = \sum_{i=1}^N \sum_{j=1}^m \frac{\partial p_{ij}}{\partial \beta} = 0$  since  $\sum_{j=0}^m p_{ij} = 1$ .

The usual asymptotic theory applies and the variance matrix is minus the inverse of the information matrix. Differentiating the double summation in Equation 7 with respect to  $\beta'$  and using  $E[y_{ij}] = p_{ij}$  yields upon Equation 8. For the details of the above derivations, refer to Cameron & Trivedi (2005).

$$\beta \sim N \left[ \beta_0, \left( \sum \sum \frac{1}{p_{ij}} \frac{\partial p_{ij}}{\partial \beta} \frac{\partial p_{ij}}{\partial \beta'} - \frac{\partial^2 p_{ij}}{\partial \beta \partial \beta'} \Big|_{\beta_0} \right)^{-1} \right] \quad (8)$$

Equation 8 is correct provided that observations are independent over  $i$ , there is no need to use more general sandwich form of the variance matrix since that data is definitely multinomially distributed and the information matrix equality will hold (Cameron & Trivedi, 2005).

## 2.2 Model Specification

dependent household will engage in some significant entrepreneurial activity is given by Equation 11.

$$ENTRP_i = \begin{cases} 1 & \text{if } ENINC_i \geq PHP100,000.00 \\ 2 & \text{if } ENINC_i < PHP100,000.00 \\ 3 & \text{if } ENINC_i = 0 \end{cases} = f(REMIT_i, SVING_i, DMINC_i, WELTH_i, AGEHH_i, AGEHHSQ_i, ELEMU_i, ELEMG_i, HSUND_i, HSGRD_i, COLUN_i, COLGR_i, HSIZE_i) + \varepsilon_i \quad (11)$$

$ENTRP_i$  is the probability that the OFW-dependent household is engaged in an entrepreneurial activity with an annual total income of greater than or equal to PHP 100,000.00 (assumes a categorical value of 1); the probability that an OFW-dependent household is engaged in an entrepreneurial activity with an annual total income of less than PHP 100,000.00 (assumes a categorical value of 2); and the probability an OFW-dependent household is not engaged in any entrepreneurial activity (assumes a categorical value of 3). On the other hand,  $ENINC_i$  is the total annual income of the household  $i$  from entrepreneurial activities.

$REMIT_i$  represents the actual amount of remittance income an OFW-dependent household receives. Based on the findings of Mesnard (2004), Ang, Guntur & Shikha (2009), together with Hosseini, Mirdamadi & Nejad (2009), this should have a positive impact on the probability that households will engage in entrepreneurial activities since remittances relieve their liquidity constraints inducing them to take entrepreneurial activities.

$SVING_i$  represents the amount of savings the household has. This is determined by subtracting the total household expenditures from the total income of the household (sum of remittance income and domestic household income). Based from the findings of Basu & Parker (2001), McCormick & Wahba (2001), Woodruff and Zenteno (2001), Hisrich and Peters (2002), Mesnard (2004), and Lingelbach, De La Vina & Asel (2005), this should have a positive impact on the probability that households will engage in entrepreneurial activities wherein individuals possessing more savings are inclined to become entrepreneurs.

$DMINC_i$  represents the actual amount of domestic income a household receives. Based on the findings of Mesnard (2004), Ang, Guntur & Shikha (2009), as well as

recreational expenditures, total recreational goods, and total durable goods expenditures. According to Sullivan & Sheffrin (2003), a durable good or a hard good is a good that does not quickly wear out. That is, a good that yields utility over time rather than being completely consumed in one use. Examples of highly durable goods are but are not limited to home appliances, consumer electronics, furnitures and fixtures, refrigerators, cars, or mobile phones usually continue to be useful for three or more years of use.

$AGEHH_i$  indicates the age in years of the household head regardless whether the household head is the OFW or not. A household head is defined as the person in the household who has the final say in any household decision including budget allocation. Meanwhile,  $AGEHHSQ_i$  is just the squared term of  $AGEHH_i$  to capture the curvature of the impact of age. Age cannot continuously increase due to a finite life period; hence, its impact must diminish. Based on the findings of Rees & Shah (1986), Borjas & Bronars (1989), Mata (1996), Delmar & Davidsson (2000), Lin, et al. (2000), and Georgellis, et al. (2005), it is expected that age will have a positive impact on the probability that households will engage in entrepreneurial activities but at some point will have a turning point causing a negative impact.

$ELEMU_i$ ,  $ELEMG_i$ ,  $HSUND_i$ ,  $HSGRD_i$ ,  $COLUN_i$ , and  $COLGR_i$  are dummy variables indicating whether the OFW in the household, which is assumed to be the household head, is an elementary undergraduate, elementary graduate, high school undergraduate, high school graduate, college undergraduate, and college graduate. It assumes a value of 1 if the household head falls on a specific category and 0 otherwise. The no grade completed category was dropped to avoid the dummy variable trap. Based on the findings of Hisrich & Brush (1988), Bruderl, Preisendirfer, & Ziegler (1992), Robinson & Sexton (1994), Light & Rosenstein (1995), Mata (1996), Rogoff, Lee & Heck, (2001), and Hosseini, Mirdamadi & Nejad (2009), the educational attainment of entrepreneurs will have a positive impact on the probability that households will engage in entrepreneurial activities.

$HSIZE_i$  represents the number of members in the household. Family size is expected to have a positive impact on the probability that households will engage in entrepreneurial activities based from the study of Ciarili, Parto & Savona (2010) wherein a large household size in a labor-abundant economy is more inclined to have small businesses due to survival and risk diversification.

less than PHP 100,000.00 (at 54%), followed by those with annual income of PHP 0.00 (at 38%), and the smallest proportion, at 8 percent, is from those with entrepreneurial annual income of PHP 100,000.00 and above. As such, most of the households that partake in these businesses earn a fairly relative annual income. Additionally, the statistics for each income class increase from 2003 to 2009 as more households are included in the surveys and also due to population growth. At most, approximately 62 percent of remittance-dependent household are engaged in some form of entrepreneurial activity. It is interesting to note that these households who have businesses receive less remittances, have lower savings; less wealth; lower income; and whose household heads are not college graduates as compared to households with no entrepreneurial income.

For further analysis, we classify two different income levels which comprise of those with total annual income of the household from entrepreneurial activities equal to PHP 0.00 and those greater than PHP 0.00. For 2003, 5,403 households earn a positive annual income from such activities while 3326 earn none; for 2006, 5,562 households for the former and 3,409 for the latter; and for 2009, 6,068 households from the former and 3,920 for the latter. Average remittance income received by OFW-dependent households increases through the years where it is PHP 63,452.90 for 2003; PHP 76,273.23 for 2006; and PHP 83,930.16 for 2009. However Table 4.1 shows that a greater share of household remittances come from those households who have income from engaging in business – registering 62 percent. As for household savings, the average amount has declined from PHP 73,055.80 in 2003 to PHP 40,144.64 in 2006, and increased again to PHP 44,767.19 in 2009. This implies an increase in the potential for households to partake in entrepreneurial activities. As seen in the table, mean savings is higher for households who receive no income from such activities for all three years.

Moreover, in terms of domestic household income received, the mean values for households who earn positive income from entrepreneurial activities are lesser than those who do not earn which are reflected from 2003 to 2009. On the other hand, average wealth for households engaging in entrepreneurial activities is greater only for the years 2003. As for the average age of the household head, it has increased through the years and there is greater for those who partake in such activities. It can be construed that it is mostly the elderly ones or those nearing retirement who are more likely to start up these businesses. Finally, household size has mean value of roughly 5 members consistent in all three years.

As for the dummy variables, descriptive statistics are presented in Table 4.2 which

## 4.2. Regression Results

Results shown in Table 4.3 indicate the likelihood of OFW-dependent households consisting of their individual and household factors to their engagement in entrepreneurial activities. As a general result, the predicted probability is highest for households that earn a total annual income of less than PHP 100,000.00 for years 2003 and 2006. However for 2009, it is highest for those with no entrepreneurial income.

For the specifics, there is a wider spread of insignificant estimates across each year and for the three possible outcomes. However, of the significant estimates, there is an emerging pattern. An increase in household remittances show a decrease in the probability that the household engages in entrepreneurial activities and earns above PHP 100,000.00 as well as an increase the probability that a household does not pursue such activities. That is, it is considerable to note that the primary use of remittances is not intended for venturing into these activities which is contrary to previous literature (Mesnard, 2004; Ang, Guntur & Shikha, 2009; Hosseini, Mirdamadi & Nejad, 2009).

On the other hand, household savings indicate the opposite signs. As household savings increase, households are more likely to engage in entrepreneurial activities and earn annual incomes equal to or greater than PHP 100,000.00. Subsequently, there is a lower probability that the household will not engage in these activities as household savings increase. It is consistent with our a-priori in that households are more inclined to engage in entrepreneurial activities financed by their higher levels of savings. Results for savings then are contrary to those of remittances, indicating savings as the stronger source of financing drives households to engage in entrepreneurship.

However, domestic income lacks the influence to engage households in entrepreneurial activities evidence by the non-robust estimates across all classifications for all years. It can be construed so since these households are OFW-dependent in which a larger share of total household income is from remittances. It is possible that domestic income alone is not enough to jump-start the business. For wealth, it remains consistent with a-priori in that it has a positive impact in engaging in business but it is statistically insignificant. However, for higher levels of entrepreneurial activities, wealth becomes more significant indicating that wealth to some extent is a relevant factor.

On the socio-demographic factors of the household heads, age remains intuitive and

graduate and high school undergraduate increases the probability that the individual engages in entrepreneurial activity with total annual income less than PHP 100,000.00. This could be due to finances earlier available that allowed them to pursue such businesses. However, in relation to Rogoff, Lee & Heck (2001) and Hosseini, Mirdamadi & Nejad (2009), the same individuals are hindered from achieving even higher total income from such business activities due to lower educational attainments.

Lastly for household size, an increase in the number of members living under the same roof decreases the likelihood that the household will not engage in entrepreneurial activities. That is, there is a higher probability that they will venture into small businesses. This is consistent with Ciarili, Parto & Savona (2010) in that this becomes an opportunity to increase their income earning activities to better provide for their necessities.

In summary, our regression results indicate savings and to some extent, wealth as facilitating factors to engage in entrepreneurial activities for these OFW-dependent households. While domestic income and foreign income through remittances significantly increase household welfare, they lack the necessary influence to drive entrepreneurship in micro-enterprises. That is, it does not go to say they inhibit chances to pursue business venture rather they are appropriately financed elsewhere. Also, for those who possess higher educational attainment, education is not a facilitating factor to induce entrepreneurship.

## **V. Conclusions**

Almost close to forty years of temporary labor migration have established the Philippines as one of the world's top economies of origin of migrant workers. Undoubtedly, money transfers from OFWs significantly improve the Philippines' state of economic health by increasing foreign exchange reserves specifically USD and boosting consumption levels. Nevertheless, there is an escalating concern that while remittances keeps the Philippine economy afloat, it has not led to sustained and long-term development.

Based on the descriptive statistics and results of the maximum likelihood estimation revealed that remittances are not used really utilized to fund a business but rather used to augment household income. On the other hand, it is savings that is used to finance entrepreneurial activities. While there are entrepreneurial activities in the country, there is an approximately 60 percent of all OFW-dependent households that have businesses. It can

enterprises using their savings. This is because households need larger capital requirements to establish small, medium, and large enterprises. From the results, remittances is not a strong facilitating factor in fostering entrepreneurship as shown by lack of statistical significance; however, it must be noted that statistical insignificance does not imply lack of power for it may simply reflect the lack of influence.

The results of the maximum likelihood estimation accompanied by the descriptive statistics have generally shown that the facilitating factor is savings, and to some extent, wealth. It is not the flow of remittances that is powerful but the stock of wealth that allows a household a higher probability of venturing into an entrepreneurial activity. Meanwhile, wealth - real or financial is a strong facilitating factor but what households need more financial resource for enterprise development. Another explanation is - being an entrepreneur is a "coping up mechanism" to those who cannot or are having difficulties entering the formal labor force; otherwise, they will work and also because of the risk appetite of OFWs – results show that they are risk averse. Lastly, being an entrepreneur can finance the needs of a larger household size, which has an implication on population management. Given the data that we have, we cannot make a conclusion that external remittances lead to entrepreneurship. However, based on the results, since savings was found to be the facilitating factor, there is a need to encourage savings among households and there is a need to accumulate stock of resources.

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## VII. Tables and Figures

**Table 4.1. Descriptive Statistics of Nominal Variables**

Year	2003					2006					2009					
	Variables	N	%	Mean	Min	Max	N	%	Mean	Min	Max	N	%	Mean	Min	Max
	<b>ENTRP<sub>i</sub></b> (with annual income of ≥PHP 100,000.00)	715	8.1911	1	1	1	842	9.3858	1	1	1	1,152	11.5338	1	1	1
	<b>ENTRP<sub>i</sub></b> (with annual income of <PHP 100,000.00)	4,688	53.7060	2	2	2	4,720	52.6140	2	2	2	4,916	49.2191	2	2	2
	<b>ENTRP<sub>i</sub></b> (with annual income of =0)	3,326	38.1029	3	3	3	3,409	38.0002	3	3	3	3,920	39.2471	3	3	3
	<b>REMIT<sub>i</sub></b> (with ENINC <sub>i</sub> > 0)	<b>8,729</b>	<b>100</b>	<b>63,452.90</b>	<b>100</b>	<b>2,140,000</b>	<b>8,971</b>	<b>100</b>	<b>76,273.23</b>	<b>100</b>	<b>5,043,120</b>	<b>9,988</b>	<b>100</b>	<b>83,930.16</b>	<b>100</b>	<b>600,000</b>
	(with ENINC <sub>i</sub> = 0)	5,403	61.8971	53,360.11	10	2,140,000	5,562	61.9998	5,562	100	5,043,120	6,068	60.7529	69,449.70	494	143,000
	(with ENINC <sub>i</sub> = 0)	3,326	38.1029	79,848.37	200	1,800,000	3,409	38.0000	96,895.85	200	1,760,000	3,920	39.2471	106,345.30	200	600,000
	<b>SVING<sub>i</sub></b> (with ENINC <sub>i</sub> >0)	<b>8,729</b>	<b>100</b>	<b>73,055.80</b>	<b>-586,037</b>	<b>7,128,727</b>	<b>8,971</b>	<b>100</b>	<b>40,144.64</b>	<b>-887,844</b>	<b>3,781,755</b>	<b>9,988</b>	<b>100</b>	<b>44,767.19</b>	<b>-1,672,539</b>	<b>484,5410</b>
	(with ENINC <sub>i</sub> =0)	5,403	61.8971	72,808.83	-586,037	7,128,727	5,562	61.9998	40,328.18	-840,065	3,781,755	6,068	60.7529	35,459.44	-922,391	-4,845,410
	(with ENINC <sub>i</sub> =0)	3,326	38.1029	73,456.99	-358,284	1,412,421	3,409	38.0000	96,895.85	200	1,760,000	3,920	39.2471	42,233.09	-1,672,539	3,673,445
	<b>DMINC<sub>i</sub></b> (with ENINC <sub>i</sub> >0)	<b>8,729</b>	<b>100</b>	<b>4,917.65</b>	<b>0</b>	<b>294,000</b>	<b>8,971</b>	<b>100</b>	<b>6,319.71</b>	<b>0</b>	<b>610,000</b>	<b>9,988</b>	<b>100</b>	<b>8,288.56</b>	<b>0</b>	<b>558,000</b>
	(with ENINC <sub>i</sub> =0)	5,403	61.8971	4,282.40	0	210,000	5,562	61.9998	5,592.36	0	610,000	6,068	60.7529	7,842.03	0	404,000
	(with ENINC <sub>i</sub> =0)	3,326	38.1029	5,949.60	0	294,000	3,409	38.0000	7,506.43	0	370,000	3,920	39.2471	8,979.76	0	558,000
	<b>WELTH<sub>i</sub></b> (with ENINC <sub>i</sub> >0)	<b>8,729</b>	<b>100</b>	<b>7,562.15</b>	<b>0</b>	<b>1,712,440</b>	<b>8,971</b>	<b>100</b>	<b>8,062.80</b>	<b>0</b>	<b>1,400,000</b>	<b>9,988</b>	<b>100</b>	<b>9,217.25</b>	<b>0</b>	<b>1,800,000</b>
	(with ENINC <sub>i</sub> =0)	5,403	61.8971	8,265.58	0	1,712,440	5,562	61.9998	7,941.77	0	1,200,000	6,068	60.7529	8,947.12	0	1,500,000
	(with ENINC <sub>i</sub> =0)	3,326	38.1029	6,419.45	0	9,07,740	3,409	38.0000	8,260.27	0	1,400,000	3,920	39.2471	9,635.40	0	1,800,000
	<b>AGEHH<sub>i</sub></b> (with ENINC <sub>i</sub> >0)	<b>8,729</b>	<b>100</b>	<b>48.75931</b>	<b>15</b>	<b>97</b>	<b>8,971</b>	<b>100</b>	<b>50.56894</b>	<b>13</b>	<b>99</b>	<b>9,988</b>	<b>100</b>	<b>52.09792</b>	<b>11</b>	<b>99</b>
	(with ENINC <sub>i</sub> =0)	5,403	61.8971	49.72552	15	97	5,562	61.9998	51.29738	13	97	6,068	60.7529	52.89436	11	99
	(with ENINC <sub>i</sub> =0)	3,326	38.1029	47.18972	15	95	3,409	38.0000	49.38046	15	99	3,920	39.2471	50.86505	13	99
	<b>HSIZE<sub>i</sub></b> (with ENINC <sub>i</sub> >0)	<b>8,729</b>	<b>100</b>	<b>4.78497</b>	<b>1</b>	<b>18</b>	<b>8,971</b>	<b>100</b>	<b>4.750975</b>	<b>1</b>	<b>29</b>	<b>9,988</b>	<b>100</b>	<b>4.684622</b>	<b>1</b>	<b>18</b>
	(with ENINC <sub>i</sub> =0)	5,403	61.8971	4.98945	1	18	5,562	61.9998	4.953254	1	29	6,068	60.7529	4.923039	1	18
	(with ENINC <sub>i</sub> =0)	3,326	38.1029	4.452796	1	16	3,409	38.0000	4.420945	1	15	3,920	39.2471	4.315561	1	17

(\*\*) In the FIES, the variable *Cash Receipts, Support, etc. from Abroad (CONAB<sub>i</sub>)* is the basis for being an OFW-dependent household since the 2009 merged FIES-LFS-SOF is not yet available.

**Table 4.2. Descriptive Statistics for Dummy Variables**

Year	2003			2006			
Variables	<i>ENINC<sub>i</sub>&gt; 0</i>	<i>ENINC<sub>i</sub>=0</i>	TOTAL	<i>ENINC<sub>i</sub>&gt; 0</i>	<i>ENINC<sub>i</sub>=0</i>	TOTAL	<i>ENINC<sub>i</sub>&gt;</i>
<i>ELEMU<sub>i</sub></i> *	918	346	1,264	880	371	1,251	918
%	72.6266	27.3734	100	70.3437	29.6563	100	72.626
<i>ELEMG<sub>i</sub></i> *	1,071	457	1,528	986	371	1,357	1,071
%	70.0916	29.9084	100	72.6603	27.3397	100	70.091
<i>HSUND<sub>i</sub></i> *	673	348	1,021	712	316	1,028	673
%	65.9158	34.0842	100	69.2607	30.7393	100	65.915
<i>HSGRD<sub>i</sub></i> *	1,517	1,001	2,518	1,353	811	2,164	1,517
%	60.2462	39.7538	100	62.5231	37.4769	100	60.007
<i>COLUN<sub>i</sub></i> *	1,003	730	1,733	844	680	1,524	1,003
%	57.8765	42.1235	100	55.3806	44.6194	100	57.876
<i>COLGR<sub>i</sub></i> *	782	1,002	1,784	684	829	1,513	782
%	43.8341	56.1659	100	45.2082	54.7918	100	43.834
<b>TOTAL</b>	5,964	3,884	9,848	5,459	3,378	8,837	5,964
%	60.5605	39.4395	100	61.7744	38.2256	100	60.499

(\*) dummy variable from 0 to 1

(\*\*) In the FIES, the variable *Cash Receipts, Support, etc. from Abroad (CONAB<sub>i</sub>)* is the basis for being household since the 2009 merged FIES-LFS-SOF is not yet available.

**Table 4.3. Marginal Effects After Multinomial Logistic Regression**

Year	2003						2006							
Category	1		2		3		1		2		3		1	
Variables	dy/dx	p	dy/dx											
lnREMIT <sub>i</sub>	-0.019	0.075	-0.007	0.651	0.026	0.030	-0.022	0.224	-0.031	0.115	0.053	0.000	-0.046	0.000
lnSVING <sub>i</sub>	0.094	0.046	-0.076	0.061	-0.018	0.162	0.059	0.210	-0.044	0.153	-0.015	0.485	0.099	0.000
lnDMING <sub>i</sub>	0.002	0.765	-0.002	0.798	0.000	0.984	-0.002	0.769	0.002	0.805	-0.001	0.920	0.009	0.000
lnWELTH <sub>i</sub>	0.015	0.109	-0.008	0.406	-0.007	0.145	0.016	0.238	-0.006	0.611	-0.010	0.266	0.029	0.000
AGEHH <sub>i</sub>	0.028	0.053	-0.017	0.224	-0.012	0.053	0.008	0.299	0.020	0.038	-0.028	0.000	0.009	0.000
AGEHHSQ <sub>i</sub>	0.000	0.054	0.000	0.176	0.000	0.064	0.000	0.301	0.000	0.060	0.000	0.000	0.000	0.000
ELEMU <sub>i</sub> *	-0.088	0.220	-0.071	0.485	0.158	0.044	-0.024	0.787	0.065	0.642	-0.041	0.741	-0.081	0.000
ELEMG <sub>i</sub> *	-0.091	0.201	-0.104	0.297	0.195	0.011	-0.013	0.881	-0.025	0.758	0.038	0.758	-0.123	0.000
HSUND <sub>i</sub> *	-0.094	0.188	-0.094	0.352	0.188	0.017	-0.021	0.807	0.062	0.659	-0.040	0.747	-0.104	0.000
HSGRD <sub>i</sub> *	-0.073	0.307	-0.149	0.132	0.222	0.003	-0.021	0.812	-0.025	0.855	0.046	0.709	-0.116	0.000
COLUN <sub>i</sub> *	-0.081	0.259	-0.214	0.032	0.295	0.000	-0.010	0.906	-0.129	0.356	0.139	0.267	-0.114	0.000
COLGR <sub>i</sub> *	-0.076	0.293	-0.360	0.000	0.436	0.000	-0.011	0.904	-0.183	0.190	0.194	0.123	-0.123	0.000
H SIZE <sub>i</sub>	0.008	0.175	0.002	0.756	-0.010	0.062	0.007	0.313	0.017	0.074	-0.023	0.004	0.021	0.000
<b>Predicted Probability</b>	0.12756099		0.72800979		0.14442922		0.09754164		0.57813408		0.32432428		0.212541	
<b>Number of Households</b>			1,985						1,477					
<b>Wald chi2(26)</b>			313.86						248.63					
<b>Prob &gt; chi2(26)</b>			0						0					
<b>Pseudo R<sup>2</sup></b>			0.0925						0.0986					

(\*) dy/dx is for discrete change of dummy variable from 0 to 1

(\*\*) In the FIES, the variable *Cash Receipts, Support, etc. from Abroad (CONAB<sub>i</sub>)* is the basis for being household since the 2009 merged FIES-LFS-SOF is not yet available.

**Figure 1. Literature Map / Conceptual Map**

