ORIGINAL PAPER

Moving Up the Savings Hierarchy: Examining Savings Motives of Older Malay Muslim

Sharifah A. Haron · Deanna L. Sharpe ·
Mohamed Abdel-Ghany · Jariah Masud

Abstract Continuation ratio analysis of data from the 2004 Economic and Financial Aspects of Aging in Malaysia was conducted to assess likelihood of Malay Muslims aged 55–75 moving up in a hierarchical model of savings motives. Results indicate that more than half of older Malay Muslim has no savings. Many are barely surviving economically. Family size, educational level, health perception, income quintiles and income adequacy were important predictors of advancing from a lower level to a higher level in the savings motive hierarchy. Saving for Hajj was an important self-actualization savings motive.

Keywords Hierarchy of savings · Savings motives · Older Malay · Malaysia

S. A. Haron (✉)
Department of Resource Management and Consumer Studies, Faculty of Human Ecology, Universiti Putra Malaysia, 43400 Serdang , Selangor, Malaysia
e-mail: sh.azizah@putra.upm.edu.my

D. L. Sharpe
Personal Financial Planning, University of Missouri-Columbia, 239 Stanley Hall, Columbia, MO 65211, USA
e-mail: sharped@missouri.edu

M. Abdel-Ghany
Consumer Sciences Department, University of Alabama, Tuscaloosa, AL 35487-0158, USA
e-mail: mabdel-g@ches.ua.edu

J. Masud
Institute of Gerontology, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia
e-mail: jariah@putra.upm.edu.my

The demographic profile of the Malaysian population is shifting towards an aging population. According to the Department of Statistics (2005), the number and proportion of senior citizens aged 60 and older in Malaysia has been steadily increasing since the 1970s. Further, their number is projected to increase more than twice by the year 2020 to 3.4 million people, which will represent about 9.8 % of the total population. Malaysia will achieve the status of an aged nation in 2035 when 15 % of the population consists of persons aged 60 years or older (Yahaya et al. 2010).

Developed countries are equipped with long standing strategies to supplement the personal and family resources of an aging population should the need arise. However, social security programs in developing countries have limited coverage and only cater to those who are employed in the formal sectors. Ong (2001) reported that the percentage of working population covered by pensions or similar arrangements was only 3 % in Thailand, 11.5 % in Indonesia, 22.8 % in China and about 35 % in Malaysia. In addition, the social security system in Malaysia does not provide older persons with a base income. Therefore, the majority of older Malay must depend on co-residency with children, receipt of financial transfers from children, their own labor income and (often meager) amount of assets and stocks as their main forms of old-age support (Chi and Chou 1999; Haron et al. 2006). Consequently, savings is a prime means by which older Malay can endeavor to achieve a good quality of life and economic sufficiency for the remainder of life. Savings enable older individuals to meet financial emergencies and reduce the risk of having inadequate resources to sustain themselves through retirement. Savings also make it possible to achieve important financial goals such as educating children or grandchildren, or leaving a bequest. Therefore, the savings motives and savings behavior of older persons is an important topic to research.

Economists have proposed several different models of savings. Keynes (1936) believed that reasons for saving change little over time. Friedman (1957) proposed that saving was influenced by change in long-range expected or so-called permanent income rather than a temporary change in income. Ando and Modigliani (1963) suggested that consumption and savings patterns mirrored needs and resources over a lifetime. Mid-life earnings repaid previously acquired debt and provided means to save for retirement. Barro (1978) and Kurz (1984) viewed intergenerational transfer as an important savings motive. Others have suggested precautionary motives, noting savings can fund emergencies, or offset uncertainty related to future health, income, or longevity (Hanna et al. 1993; Kotlikoff 1989).

Xiao and Noring (1994) noted two shortcomings in these economic models. One, savings motives were assumed rather than assessed empirically. Two, the models focus on a singular savings motive, ignoring the heterogeneity of savings motives across a population. For example, a bequest motive is implicit in the permanent income hypothesis (Bryant 1990; Friedman 1957; Xiao and Noring 1994). The life-cycle model focuses on retirement savings (Xiao and Noring 1994). To address these limitations, Xiao and Noring (1994) drew on the work of Shefrin and Thaler (1988) and Maslow (1954). Shefrin and Thaler (1988) incorporated psychological theory into their analysis of savings behavior, proposing that individuals envisioned funds in different "mental accounts" rather than viewing their financial resources as interchangeable. Propensity to consume differed by account so that, for example, funds earmarked for vacation would be viewed differently than funds invested for a child's education. Consequently, an individual could have multiple savings motives. Maslow (1954) proposed individuals act to fulfill needs in a hierarchical order. Only after basic, physiological, survival needs were met would attention turn to fulfilling higher level needs.

Subsequent research by Xiao and Noring (1994), Xiao and Anderson (1997) and Devaney et al. (2007) affirmed that household savings follows a hierarchical order. Using data from the United States, these researchers investigated savings motives across the lifespan. This study extends this line of research to an international arena with a focus on older individuals. Specifically, the objectives of this paper are to use data from Malay Muslims aged 55 and older to examine their likelihood of moving from a lower to a higher level in a hierarchical model of savings motives and to determine factors affecting the likelihood of having a specific savings motive each model. Findings of this study have both theoretical and practical implications. Support of a savings hierarchy using non-United States data would lend strength to the generalizability of this theoretical approach. On a practical level, the location of older Malay Muslims in the savings hierarchy could indicate their financial well-being.

Literature Review

Economic Models of Savings

In general, economic models related to consumption and saving have been used to explain the microeconomic behavior of a household (Magrabi et al. 1991). These models portray individuals as goal-seeking and forward focused, acting in the present to fund some specific type of future consumption. The discounted utility model, which postulates that what one will receive in the future is valued less in the present than it will be at a later time, underlies all economic models (Devaney et al. 2007).

The absolute income hypothesis proposes that savings motives change little and provide a stable influence on propensity to consume over a long period of time (Devaney et al. 2007). The implication of the absolute income hypothesis is that people will increase consumption as their income increases but not by as much as the increase in income. According to the permanent income hypothesis, individuals strive to maintain a consistent consumption path across time and will adjust spending and saving to achieve that end (Friedman 1957). Further, individuals would respond to a change in long term expected income (permanent income) but not to a temporary change in income.

The life-cycle income hypothesis and the permanent income hypothesis assume that people are concerned about long term consumption. Both hypotheses suggest that one's level of savings is determined by one's current disposable income and anticipated future income (Danziger et al. 1982; Hong et al. 2002). Individuals strive to maintain more or less the same level of living throughout their lifetime. Therefore, anticipating sharply declining income upon retiring, they save when younger and dissave after retirement to achieve a relatively constant consumption level. Consequently, the pattern of saving over a lifetime is nonlinear. According to Hong et al. (2002), household savings would increase to a certain point and then decline with age. Hong et al. further explained that the permanent income and life-cycle hypotheses imply that the rate and amount of saving increases with income, especially among individuals who perceive that income changes are likely to be short term.

According to Hong et al. (2002), the conventional saving model based on the permanent income hypothesis and the life-cycle income hypothesis assumes a fairly simple economic environment with certainty and perfect foresight.

Thus, the sole purpose of saving is to fund later life consumption rather than to have a hedge against future economic uncertainty.

Some researchers (e.g., Alessie et al. 1999; Palumbo 1999) have disputed the simple life cycle hypothesis since they found no clear evidence that older individuals dissave as postulated by the hypothesis. In particular, Alessie et al. (1999) found that wealth decumulation occurs only at an advanced age.

Several alternative reasons for on-going wealth accumulation among older individuals have been proposed. Barro (1978) and Kurz (1984) extend the conventional model to include intergenerational transfers, pointing to the desire to pass on wealth to a subsequent generation. Others have incorporated precautionary motives into the standard economic savings model, noting that savings can fund emergencies, or offset uncertainty related to future health, income, or longevity (Alessie et al. 1999; Engen et al. 1999; Hanna et al. 1993; Kotlikoff 1989; Palumbo 1999).

Economic models of saving have been criticized for their singular focus on a given savings motive such as consumption smoothing or leaving a bequest (Xiao and Noring 1994). Although economists have investigated a variety of savings motives in isolation, the models do not offer an effective means to consider either the heterogeneity or the interdependence of savings motives.

Behavioral Models of Saving

Shefrin and Thaler (1988) incorporated psychological theory into the standard economic model of saving to propose a behavioral life-cycle hypothesis. They view individuals as both planners concerned about utility over the lifespan and doers that are focused on the present (Devaney et al. 2007). According to the behavioral life-cycle hypothesis, individuals do not view their financial resources as interchangeable. Rather, funds are viewed as being in different mental accounts. Each account has a different purpose and the propensity to consume from each account will vary. The implication of Shefrin and Thaler's work is that motives for saving can be richly diverse, even for one individual. Models of saving motive and behavior that can capture more than one motive for saving are needed.

Maslow's (1954) hierarchy of needs model offers an additional psychological perspective on savings behavior. Maslow characterized humans as perpetually wanting creatures who always possess some type of unfulfilled needs, arranged in a hierarchical order (Oleson 2004). Maslow emphasized the pursuit of need-fulfillment as a prime human motivation and viewed action taken to meet needs as both purposeful and sequential. Only after lower level needs were met would individuals be motivated to pursue satisfaction of higher level categories of need.

Maslow identified five sequential stages of needs: physiological, safety and security, love and belonging, esteem, and self-actualization (Oleson 2004). Physiological needs have also been termed "deficit needs" (Xiao and Noring 1994, p. 28). This lowest level in the hierarchy of needs pertains to sustaining life by securing such basic things as food, water, and shelter.

Once the deficit pertaining to physiological needs was met, an individual would turn to growth needs. With growth needs, the more one has, the more one wants (Alderfer 1989). First, one would strive to meet safety and security needs. These needs are often described as those focused on self-preservation. But, Maslow broadened the view of stability and safety by including human preferences for familiar rather than unfamiliar things as indicated by such things as preference for routine and structure in one's life (Oleson 2004).

Once safety and security needs were met, an individual would seek to satisfy love and belonging needs. These needs can also be classified as social needs related to belonging, companionship and social acceptance. After safety and security needs were met, an individual would turn attention to meeting the need for esteem. Maslow asserted that people have a general need and desire for status, self-respect, self-esteem and esteem of others. He classified these needs into (1) the desire for strength, for achievement, for adequacy, for confidence in the face of the world and for independence and freedom and (2) the desire for reputation or prestige (respect or esteem from other people), recognition, attention, importance, or appreciation. After all other needs were satisfied, an individual would turn attention to the need for self-actualization or the motivation to fulfill one's potential. Satisfaction of esteem needs leads to feelings of self-confidence, power, worthiness, adequacy and other feelings of usefulness.

Several researchers have used Maslow's hierarchy of needs model to investigate savings motives and behavior. Xiao and Noring (1994) used data from the 1986 Survey of Consumer Finances and χ^2 analysis to examine the relationship between six categories of perceived savings motives and household socio-economic and demographic characteristics. They concluded that families have numerous financial needs; financial needs are diverse and appear to be systematically related to household characteristics; and there is empirical evidence that families address financial needs in a hierarchical order. Xiao and Noring (1994) noted that, consistent with Maslow's theory, families with relatively low financial resources focused on meeting daily needs as a savings motive. By implication, daily needs would form the lowest level of financial need. Families with relatively higher financial resources (income, assets, and net worth) expanded savings motives from daily needs to encompass emergency funds, and then "retirement, children, and growth,"

implying these motives formed the intermediate and highest level of financial need, respectively.

Xiao and Anderson (1997) also used the 1986 Survey of Consumer Finances to examine the relationship between household financial needs and financial asset shares. They found that as household income increased, three distinct and hierarchical patterns of financial asset share ownership emerged. Checking and savings accounts appeared to meet the lowest level survival needs. Stocks and bonds met the highest level growth needs. Other types of financial assets such as money market accounts and retirement accounts met mid-level security needs.

Expanding the work of Xiao and Anderson (1997), Devaney et al. (2007) used data from the 2001 Survey of Consumer Finances and a continuation ratio model to examine the profile of households likely to advance to higher levels of saving motives in the hierarchy of needs. In addition to a no savings group, Devaney et al. (2007) identified six levels of saving motives corresponding to Maslow's hierarchy of human needs namely, physiological, safety, security, social, esteem and self-actualization.

Devaney et al. (2007) concluded that age, family size and length of planning horizon were all important predictors of advancing from a lower level to a higher level in the hierarchy. The current study proposes to extend the work of Devaney et al. (2007) to an international arena by using the concept of Maslow's hierarchy of needs and the continuation ratio model to examine the savings motives of Malaysian Muslims aged 55 and older. Age 55 was selected because it has been the customary retirement age in Malaysia.

Research Methods

The Data

This study used data from the 2004 Economic and Financial Aspects of Aging in Malaysia, which was funded by the Ministry of Science, Technology and Innovation, under the Intensified Research Priority Area (IRPA) initiatives. A multistage systematic sampling approach was used. First, the absolute number of older persons by age group (55–75) from all 1,173 mukims (county or territorial sub-divisions) was obtained from the Department of Statistics, Malaysia.

Due to budget and time constrains, the sampling frame for this study was comprised of 6 % of the total sub-divisions in Malaysia. A total of 75 out of 1,173 sub-divisions were selected. Consequently, the total population of those between ages 55 and 75 (i.e., N = 2,020,344) was divided by 75 to arrive at the sampling interval number of Kth = 26,938. The sub-divisions were then selected using the Kth interval in a cumulative total population list. The

first sub-division was selected from the range of interval number and then every Kth sub-division of the list was selected for the sample.

In the second stage of the sampling process (i.e., at the sub-division level), the enumeration block was utilized as the sampling frame. According to the Department of Statistics Malaysia, there were 150 enumeration blocks in one sub-district and each enumeration block consisted of about 100–150 houses. Four enumeration blocks with highest numbers of older persons age 55–75 were selected from each sub-division to minimize potential for obtaining areas with few to no older persons such as a new residential area populated with young individuals. A quota of ten respondents from each enumeration block was set for the study. Using a map provided by the Department of Statistics, Malaysia, all enumerators started from point "A" to obtain households with older person between age 55 and 75. From the first house, enumerators followed a systematic sequence interval of seven houses until they had interviewed ten respondents. A total of 3,000 older persons between the ages of 55 and 70 from the 75 mukims participated in the survey. Out of this number, 2,327 were successfully interviewed, comprising a response rate of 78 %. One person per household was surveyed.

The data were collected through personal (face-to-face) interviews conducted by trained enumerators. Questionnaires were developed in four languages: Bahasa Melayu (Malay Language), English, Mandarin (Chinese) and Tamil to facilitate interviews with the different ethnic groups in Malaysia. Data were obtained from 1,296 Malay (51 % male, 49 % female); 523 Chinese (52 % male, 48 % female), 162 Indian (38 % male, 62 % female) and 346 other ethnic group (51 % male, 49 % female). Some savings motives were unique to Muslim respondents. Since this religious group was found almost exclusively among the Malays, this study focused on a subset of 1,272 Malay Muslims who provided responses to the savings questions.

Conceptual Framework

The conceptual framework for this study draws on two hypotheses. The first hypothesis is the behavioral life-cycle hypothesis (Shefrin and Thaler 1988), which proposes that individuals mentally categorize savings by purpose of the saving. This hypothesis implies that multiple savings motives can exist and that propensities to save can vary by account. The second hypothesis is Maslow's (1943; 1954) hierarchy of human needs model, which implies that individuals will pursue these categorized savings goals in a sequence based on need fulfillment. Satisfaction of lower level basic needs is pursued first. Once these needs are met, attention turns, in sequence, to satisfaction of safety needs, security needs, love and belonging needs, esteem needs

and, finally, self-actualization. Taken together, these two hypotheses imply that people segment savings by purpose and assign a hierarchical order to purposes pursued.

Structure of specific hypotheses in this study drew on prior research using the Survey of Consumer Finances data to identify factors influencing pursuit of various savings purposes (Devaney et al. 2007; Xiao and Anderson 1997; Xiao and Noring 1994). Characteristics of the Malaysian culture were also considered in developing the hypotheses used in this study.

The lowest hierarchy of saving in this study was no saving followed by saving to fulfill basic needs, security needs, social needs, and self-actualization. Data limitations necessitated combining basic needs and security needs and precluded inclusion of esteem need in the model.

Those with no savings were at the bottom of the hierarchy. Lack of savings can be the result of limited resources, high financial demands relative to income, or choice. It is expected that those who move up the hierarchy from no savings to a higher level or levels of savings either have relatively more resources or fewer financial demands. Specifically, it is hypothesized that those moving up the hierarchy from no savings to some form of savings will have a smaller family and be relatively younger, married, better educated, employed, and have better health, ceteris paribus.

Prior research found that families with limited resources are more likely to save for basic expenses (Xiao and Noring 1994). It is expected that those who are relatively older, have less education, larger families, are single or in poorer health would work on fulfilling basic needs. Thus, it is hypothesized that these characteristics would describe those moving from basic to higher level savings.

Emergency saving and saving for the future characterize security needs. Those moving up from saving for security needs would likely have access to retirement savings plans and an expectation of a relatively long planning horizon. It is hypothesized that those in this group will be male, older, better educated and in better health. Malaysia is generally a paternal society. Especially among the Malay Muslim, men are expected to provide for the family and be concerned about the economic security of the family.

Love and social needs would include saving for children or family celebrations (Boeree 2006). It is hypothesized that those moving up from love and social needs will be older, in good health, have more income and a relatively larger family. As part of the culture, Malay parents take responsibility for paying for such things as their children's education or wedding celebrations. This type of expense fulfills a societal expectation. Having a large family would create more of these types of expenses and create a greater need to save to meet societal expectations.

Data limitations prevented inclusion of esteem need in the hierarchy. Therefore, the top of the hierarchy in this study would be savings to meet the personal growth focused needs of self-actualization. To reach this level, one would need adequate resources to have satisfied lower level human needs. It is expected that those progressing to these final levels are older, have smaller families, more income and higher education.

The Empirical Model: Continuation-Ratio Model

The continuation-ratio model was proposed by Feinberg (1980) for the analysis of categorical data with ordered responses. It is best suited to situations where the specific categories of the response variable are of intrinsic interest, and are not merely an arbitrary grouping of an underlying continuous variable. As noted by Devaney et al. (2007), the model characterizes a progression of stages, allowing one to predict movement to subsequent levels in a hierarchy. The model is linear and additive on the logit scale and uses maximum likelihood methods to estimate a summary odds ratio.

The continuation-ratio model takes the general form:

$$Log\left[Pr\left(Y = y_j | x\right) / Pr\left(Y < y_j | x\right)\right] = \alpha_j + \beta...xj$$
$$= 2, ..., s$$

where Y is a polytomous variable with s categories corresponding to the ordered values $y_1, ..., y_s$. $x = (x_1, ..., x_n)$ is a column vector of covariates. Logits are formed by transforming Y into a binary variable where the j category of Y is coded 1; categories 1 to $j–1$ are coded zero. The model is based on the probability of being in category j, conditional on being in categories smaller than j. The slope β_i, corresponding to the covariate x_i, represents the change in the relative chance of a specific ranking against a lower ranking, for a unit change in x_i. Equal slopes were not assumed across categories.

Due to very small report of saving for safety related needs, responses for this savings motive were collapsed with basic needs. Also, no report of saving for esteem related needs was given. Consequently, the response variable in this study, savings motive, has five categories: no saving, saving to fulfill physiological basic needs and safety needs, saving to fulfill the need for security, saving to fulfill love and social needs, and saving to fulfill self-actualization needs. These categories were arranged in a hierarchy based on Maslow's hierarchy of needs (Devaney et al. 2007; Xiao and Anderson 1997; Xiao and Noring 1994). Categories were coded 1 through 5, respectively. A respondent either is or is not a participant in any given category. Considering the categories as a sequential hierarchy, there is a potential sequence of ordinal responses for each respondent. For example, the ith respondent could have the following sequence of ordinal responses: 3, 4, and 5.

The response may be portioned to reflect movement up the hierarchy with the category of interest coded 1, all others zero. Consider "no saving" versus "saving." Assume respondent i has "no saving." The probability of this event occurring may be expressed by

$$Exp\,(\theta_1 + \beta\ldots x_i)/[1 + Exp\,(\theta_1 + \beta\ldots x_i)]$$

where θ_1 is the cut point specific to the first partition "no saving" versus "saving" of the original response. Conditional on respondent i saving, the probability that this respondent saves for physiological needs is

$$Exp(\theta_2 + \beta\ldots x_i)/[1 + Exp(\theta_2 + \beta\ldots x_i)]$$

where θ_2 is the cut point specific to partition 2, "physiological basic needs" versus higher hierarchal needs recorded for those who saved.

In similar manner, given the response is category j = 3 or higher, the probability of a respondent presenting with category j is

$$Exp\,(\theta_j + \beta\ldots x_i)\big/\big[1 + Exp\,(\theta_j + \beta\ldots x_i)\big]; \quad j = 3, 4, 5$$

The model will allow the estimation of the effect of the explanatory variables not only on the probability of saving, but also on the rate at which the respondents who save progress through categories 2–5.

Variable Measurement

Coding of Dependent Variables

Measures of savings motives served as categorical dependent variables: no savings, and saving to meet basic and safety needs, security needs, social needs, and self-actualization. No savings was coded 1 if respondents answered no when asked "Do you have any savings?" zero otherwise. Those with savings were the reference group.

Coding for hierarchical categories of savings motives was based on respondents' answers to questions regarding reasons for savings. Basic needs, the initial level in the hierarchy of savings motives, were measured as saving to "support daily needs" such as to obtain food and other necessities. Due to data limitations (only 21 cases reported saving for purposes consistent with this motive), it was decided to combine safety needs with basic needs. If respondents indicated the purpose of their saving was to meet their basic needs or safety needs, basic needs was coded 1, 0 otherwise. When saving for basic needs was the dependent variable, those with savings motives other than fulfilling basic needs or safety needs formed the reference group.

Second in the hierarchy of savings motives is saving to meet security needs. Two measures of security needs were used in this study: "Just to have extra money," and "saving for use after retirement." The category security needs was coded as 1 if respondent checked the option of either or both motives, 0 otherwise. Having saving motives other than security was the reference group.

Third in the hierarchy of savings motives is saving for social needs, measured in this study as saving to finance children's education and/or children's wedding celebrations. For respondents who indicated having either savings purpose, the category of social needs was coded as 1, 0 otherwise. Saving motives other than to meet social needs was the reference group.

No cases were found for saving to meet esteem needs. Consequently, self-actualization motives were at the top of the savings motive hierarchy (i.e., it is the fourth savings motive). In this study, saving for performing Hajj (i.e., completing a pilgrimage to Mecca) is used to indicate a self-actualization motive. The fifth and final pillar of Islam is performing Hajj for those who can afford to do so (in terms of finances, health and safety) (Kamus and Abdul-Hamid 2009). By completing a Hajj, one has performed all five of the pillars of Islam and thus has completed the spiritual aspects of a Muslim. Malaysia is a predominantly Muslim country. Malay Muslims, especially those who are older, strive to perform all pillars of Islam to ensure spiritual security. Indeed, this act is so important to a Muslim's faith that just having the dream to go for a Hajj is considered equal in importance to fulfilling a physiological need. Given the important role that going to Mecca for Hajj has in the spiritual life of a Muslim, saving for this journey was classified as saving for self-actualization.

Coding of Independent Variables

There are three groups of independent variables: demographic factors, human capital, and economic factors. Demographic variables included age, gender, and marital status. Age was measured as continuous variable. Being female was coded 1. Given potential for a large number of widows, marital status was coded 1 if not married, 0 otherwise.

Human capital was proxied by education level. Since this birth cohort would have had low levels of education, only three levels of educational attainment were used: no formal education, primary education, and secondary education and higher. Primary school, for children age 7–12, consists of standard one through standard six and corresponds to first to sixth grade in the American education system. Secondary schools are for children age 13 through 17. Two dummy variables were used to capture the quality of human capital of study participants. Dichotomous variables were created for those with no formal education and primary education, each set equal to 1 if their level of education is as such and 0 otherwise. Those with secondary education and higher were the reference group.

Coding of health perception was based on survey respondents' answers to the question: "How would you rate your present state of health?" Bad health was coded 1 if a respondent indicated "bad," 0 otherwise. Similarly, moderate health was coded 1 if a respondent indicated "moderate," 0 otherwise. Good health was the reference category.

Objective and subjective measures of income were used to proxy economic resources. The objective measure was based on the respondents' report of their own income measured as an annual amount of Malaysian Ringgit (RM) (at time of this study USD1 = RM3.60) received from salary or wages, profits from business, pensions, rental income, transfers from sons, transfers from daughters, transfers from grandchildren or other relatives, agricultural sales, dividends, bonuses, annuities, or other sources. Reported income was recorded into income quintiles to indicate respondent's relative position within the income distribution of the sample. The respondents' perception of income adequacy was used as subjective assessment of income status.

Findings

Sample Characteristics

Table 1 summarizes the socio-demographic characteristics of the older Malay Muslim in this study. The mean age of the elderly was about 63 years old. The proportion of male and female respondents was virtually equal at 51 and 49 %, respectively. Almost 67 % of the respondents were married with mean family size of 3.48 people per household.

As expected, the educational level of study respondents was low. These results reflect the fact that this cohort of individuals grew up during the pre-independence period where life was difficult and education was limited and not affordable. About 29 % of respondents reported never receiving any formal education, whereas 55 % indicated primary school as the highest educational level attained. This low level of education would present two problems for the older individuals seeking financial security. First, employment opportunity would be limited to menial jobs that paid a low wage. Second, the jobs available would typically demand physical strength and ability. Older individuals typically experience a significant decrease in physical endurance and strength due to aging. Consequently, they would probably have less opportunity to be employed after reaching mandatory retirement age. Therefore, it is not surprising that 73 % of the respondents reported they were no longer working.

About 46 % of respondents reported having good health, as compared with about 17 % who rated their health as bad. About one in five older Malay Muslims (20.4 %) were in the bottom 20 % of the income distribution of the sample. The modal category was the middle of the distribution (32 %). Close to 15 % of the sample was in the top 20 % of the income distribution. It is important to note that the income distribution reflected relative position within the sample. Hence, those in the top of the distribution were not necessarily well off in absolute terms. This point is underscored by the Malay Muslim respondents' assessment of their income adequacy. Approximately 65 % of the sample reported that their income was "not enough at all" or "just enough for basic needs"; about 22 % indicated that their income was enough for most things needed though it was not sufficient to cover everything. Only about 5 % of the study respondents reported having adequate income for all things they needed and the ability to save.

The Socio-Demographic Profile of Older Malay Muslims and Saving Motives

Table 2 shows the profile of older Malay Muslim related to their savings motives. Results indicate 59 % (756) do not have savings; 7.5 % (96) save to meet basic needs, 6.6 % (84) save for security needs; 6.2 % (79) save for social needs, 20.2 % (257) save for self-actualization. Interestingly, although a pattern of moving up the hierarchy is evident among those able to save, a large portion of these older Malay Muslims concentrated on a self-actualization need, specifically going for a Hajj. Malay Muslim typically become more religious as they grow older. Consequently, performing a Hajj, which is the fifth pillar of Islam, arises as a main priority despite inability to meet other needs such as social and security needs. Also, the Lembaga Tabung Haji (Pilgrimage Fund Board),[1] provides older Malay Muslim with a unique institutional resource that facilitates saving for a Hajj.

To assist in explanation of the findings, the socio-demographic profile of older Malay Muslim will be used to organize and compare results related to the different saving motives.

---

[1] The Pilgrim Fund Board (*Lembaga Tabung Haji*) is an Islamic financial institution that manages Malaysian pilgrimages. The Board takes deposits as small as RM10 from its all Muslim membership for the purpose of saving to go to Hajj. The Board pays an annual dividend to depositors as interest is forbidden in Islam. For convenience and to encourage saving for such purpose, the Board offers flexibility and ease of deposit and withdrawal similar to that of banks either from its own branches or from participating banks that link to the Board such as the Islamic Bank and *Bank Rakyat* (translation: People's Bank).

Table 1 Sample characteristics

Variable	All sample ($n = 1272$)	
	Frequency/ mean	Percentage/ standard deviation
Mean age	63.41	5.64
Sex		
Male	653	51.3
Female	619	48.7
Mean family size	3.48	2.08
Marital status:		
Not married	413	32.5
Married	859	67.5
Highest educational level:		
No formal education	368	28.9
Primary school	701	55.1
Secondary school and above	203	16.0
Employment status		
Still working	340	26.7
No longer working	932	73.3
Health perception		
Bad	212	16.7
Moderate	480	37.7
Good	580	45.6
Income quintile		
Q1 (Less than RM500)—Bottom 20 %	259	20.4
Q2 (RM501-RM2,400)—Bottom 40 %	159	12.5
Q3 (RM2,401-RM5,040)—Middle 20 %	397	31.2
Q4 (RM5,041-RM8,840)—Top 40 %	269	21.1
Q5 (More than RM8,840)—Top 20 %	188	14.8
Income adequacy:		
Not enough	184	14.5
Enough for basic needs	637	50.1
Enough for most things but not everything	275	21.6
Enough for most things needed	116	9.1
Enough for all things needed and able to save	60	4.7

Age

Age can reflect lifecycle stage and thus indicate an older person's potential commitment in life to their own selves or to others such as their offspring. Results indicated that the average age of older Malay Muslim that had no savings was 64 years old. This finding is very unfortunate since at that age the ability of older Malay Muslim to earn labor income has been reduced and they typically do not have any financial reserves to help prevent becoming economically dependent. Regardless of saving motive, those who saved had a slightly lower average age than those who did

not save at all. In fact, as one moves up the hierarchy from no saving to saving to fulfill social needs, the average age of the older Malay Muslim is lower (shifting from 64 to about 61 years old). Among those with the self-actualization motive of saving, the average age was about 63 years old. The older Malay Muslim with a self-actualization motive were those who were economically fulfilled or from higher income groups.

Gender

Older women formed the majority of those in the lower levels of the savings hierarchy, whereas older men were the majority in the hierarchies beyond fulfilling basic needs. A slightly higher percentage of older Malay Muslim women as compared with men had no savings (52 vs. 48 %) or had basic needs as a primary savings motivation (53 vs. 47 %). In contrast, moving up to higher saving motives beyond fulfilling basic needs, men dominated each saving motive category: 56 % of men saved for security needs, 65 % saved for social needs and 56 % saved for self-actualization needs.

Masud et al. (2006) found that more elderly women in Malaysia (46 %) as compared with men (13 %) had never attended school and that most elderly women were fulltime housewives. In 2007, the female labor force participation rate (LFPR) in Malaysia was 46.7 %, which is generally considered low. LFPR among women aged 55–65 years old is even lower at 24.7 % (Department of Statistics 2008). As such, gender difference in rank of saving motives was probably due to deeply held beliefs regarding different gender roles in the home and labor market among this birth cohort. Given the traditional practice of the husband as the wage earner and the wife fulltime in the home, relatively few women in this birth cohort participated in the labor force, limiting their opportunity to save or to save beyond fulfilling basic needs. As such, consistent with previous literature (e.g., Masud et al. 2006), the older women in this study were more economically vulnerable and more likely to fall into poverty than older men.

Family Size

Results indicated that the Malay Muslim elderly who saved to fulfill social motives had the largest average family size (3.9 persons), followed by the no saving group (3.6 persons) and saving to fulfill basic needs (3.3 persons). Those who saved to achieve security and self-actualization had the smallest family size at 3.18 persons. Such findings probably reflect different living arrangement and family commitments among the Malay Muslim elderly. After reviewing several studies, Caraher (2000) concluded that, in Malaysia, family is the central welfare provider, both in

Table 2 The socio-economic and demographic characteristics of the samples used in each saving hierarchy model

Variable	Respondents saving motives									
	No saving (n = 756)		Basic needs (n = 96)		Security needs (n = 84)		Social needs (n = 79)		Self-actualization (n = 257)	
	Freq/ mean	%/ SD	Freq/ mean	%/ SD	Freq/ mean	%/ SD	Freq/ mean	%/ SD	Freq/ mean	%/ SD
Age	64.01	5.57	63.75	5.97	62.12	5.07	60.65	5.35	62.81	5.66
Sex										
Male	365	48.3	45	46.9	47	56.0	51	64.6	145	56.4
Female	391	51.7	51	53.1	37	44.0	28	35.4	112	43.6
Family size	3.59	2.14	3.34	2.11	3.18	2.04	3.87	1.78	3.18	2.0
MRST:										
Not married	275	36.4	36	37.5	22	26.2	17	21.5	63	24.5
Married	481	63.6	60	62.5	62	73.8	62	78.5	194	75.5
Education:										
No formal education	268	35.4	30	31.3	15	17.9	12	15.2	43	16.7
Primary school	408	54.0	55	57.3	48	57.1	41	51.9	149	58.0
Secondary school and above	80	10.6	11	11.5	21	25.0	26	32.9	65	25.3
Employment status										
Still working	173	22.9	30	31.3	29	34.5	34	43.0	74	28.8
No longer working	583	77.1	66	68.8	55	65.5	45	57.0	183	71.2
Health perception										
Bad	160	21.2	12	12.5	8	9.5	3	3.8	29	11.3
Moderate	282	37.3	33	34.4	31	36.9	27	34.2	107	41.6
Good	314	41.5	51	53.1	45	53.6	49	62.0	121	47.1
Income quintile										
Q1 (Less than RM500) —Bottom 20 %	196	25.9	20	20.8	12	14.3	5	6.3	26	10.1
Q2 (RM501-RM2400)—Bottom 40 %	107	14.2	13	13.5	10	11.9	5	6.3	24	9.3
Q3 (RM2401-RM5040)—Middle 20 %	259	34.3	35	36.5	18	21.4	13	16.5	72	28.0
Q4 (RM5041-RM8840)—Top 40 %	120	15.9	19	19.8	23	27.4	37	46.8	70	27.2
Q5 (More than RM8840)—Top 20 %	74	9.8	9	9.4	21	25.0	19	24.1	65	25.3
Income adequacy:										
Not enough	142	18.8	11	11.5	9	10.7	4	5	16	6.2
Enough for basic needs	424	56.1	45	46.9	34	40.5	29	36.7	105	40.9
Enough for most things but not everything	130	17.2	29	30.2	20	23.8	28	35.4	68	26.5
Enough for most things needed	50	6.6	4	4.2	13	15.5	9	11.4	40	15.6
Enough for all things needed and able to save	8	1.1	7	7.3	8	9.5	9	11.4	28	10.9

monetary terms and in provision of social care. It is likely that the older Malay Muslim in this study that are without savings live with and are cared for by their adult children. Hence, they would use their living arrangement rather than savings to cushion them from poverty. Co-residence of adult children with their parents remains a common practice in Malaysia. The Malaysian government encourages this practice by providing families with economic incentives (i.e., a tax deduction against medical expenses incurred) for care of aging parents (Economic Planning Unit 2005; Caraher 2000).

Among the older Malay Muslim with large families who currently have saving, savings motives focused on meeting their daily needs or fulfilling social needs. Older Malay Muslim with a big family may have a relatively larger commitment to current consumption, thus limiting ability to save beyond meeting basic needs. The older Malay Muslim who saved to meet social needs not only had the largest average family size at 3.87 persons but also had the lowest average age at 61. Hence, these respondents were probably still saving to fund the education and/or weddings of their children. Those with a smaller size family would be

more likely to have a surplus of income over expenses, making it possible to be economically fulfilled. Thus, their saving motives would focus more towards achieving their own security and self-actualization.

Marital Status

Interestingly, results indicated that almost 63 % of married older Malay Muslim had no savings as compared with 36 % of those who were not married. However, among those who saved, married older Malay Muslim were the majority regardless of the saving motives. The largest proportion of savers was the married older Malay Muslim with saving for social needs as the saving motive (78.5 %). This result may again reflect the commitment of married older Malay Muslim parents to fund family-related social obligations.

Educational Level

Across different levels in the hierarchy of saving motives, older Malay Muslim with only a primary education formed the majority group. Education did seem to be an important correlate to moving up the savings hierarchy. Respondents with the lowest educational level (i.e., those who had no formal education) were the second largest group after those with primary education at the first and second level of the saving motives hierarchy: no saving (35 %) and saving to fulfill basic needs (31 %). However, beyond fulfilling basic needs, older individuals completing secondary school and above represented between a fourth to a third of those seeking to meet security needs (25 %), social needs (33 %), or self-actualization needs (25 %). Educational level is indicative of the quality of human capital. Consequently, it can reflect access to and ability to secure employment that pays well, which would consequently affect the ability and motive to save for study respondents.

Employment Status

Employment status can be closely linked with ability and motive to save for two probable reasons. First, inability to sustain one's life in retirement may force some older persons to go back to work after the mandatory retirement age. Results of this study suggest this outcome was not common for this sample, however. Among non-savers, more than two-thirds were no longer working. This result is probably explained by the relatively higher average age of the non-savers. Likely their opportunity and ability to be employed is limited. Second, one may work to accomplish certain goals such as saving for children's wedding and education. This fact may explain why there is almost an equal division between those who still work and no longer working when

considering social need motives (43 and 57 % respectively). Since the average age of older Malay Muslim in this group is the lowest among all groups at 60 years, employment is possible. In addition, the correlation between working and saving motive could be due to a cohort effect. That is, the younger Malaysians in the sample have greater employment opportunities given the economic development in Malaysia, thus resulting in greater ability to save.

Health Perception

Haron et al. (2010) concluded that income was related to level of self-rated health among older Malaysians. That is, older Malaysians who were in the lower income quintile and those who perceived their financial standing as bad were more likely to rate their health as bad. Having bad health is costly as one would need to allocate relatively more resources to medicine and medical services. In this study, about 21 % of those reporting bad health had no savings. Interestingly, parallel to the findings by Haron et al. (2010), about 37 % of those with moderate health and about 42 % of those reporting good health also had no savings. These relatively high percentages of no savers among those with better health could reflect either resource constraints or a perceived reduced need for precautionary savings.

Those with good health were the dominant group at higher levels of the savings hierarchy. Almost 53 % of those reporting good health had savings for basic needs as compared with about 34 % for those with moderate health and 12 % for those with bad health. Similarly, close to half of those seeking to meet security needs, social needs, or achieve self-actualization were in good health (34, 62, and 47 %, respectively).

Income Quintile

Of course, having more income creates a greater ability and opportunity to save. The middle 20 % group in the income distribution had the highest percentage (34 %) of those without savings, followed by those in the bottom quintile (26 %). Among those who had relatively more resources, savings motives were mostly concentrated at the higher level of the hierarchy. A small number of those in the top 40 % and top 20 % of the income quintiles indicated that their saving motives were to fulfill basic needs (16 % for top 40 % and 10 % for top 20 %). Most of the older individuals in these two groups reported saving for security (27 and 25 % respectively), social needs (47 and 24 % respectively) and self-actualization (27 and 25 % respectively).

Table 3 Result of continuation ratio model on saving hierarchy

Variable	Respondents' saving motives							
	No saving (n = 756)		Basic needs (n = 96)		Security needs (n = 84)		Social needs (n = 79)	
	β	Exp (β)	β	Exp (β)	β	Exp (β)	β	Exp (β)
Age	0.010	1.010	0.022	1.022	−0.020	0.980	−0.064	0.938*
Sex : (Ref = Male)	0.183	1.201	−0.219	0.803	−0.145	0.865	0.249	1.283
Female								
Family size	0.069	1.071*	−0.027	0.973	−0.082	0.922	0.079	1.082
MRST: (Ref = Not married)								
Married	−0.009	0.991	0.144	1.155	−0.083	0.920	0.487	1.627
Education: (Ref = Secondary school and above)								
No formal edu	0.710	2.034**	0.155	1.167	−0.548	0.578	−0.188	0.829
Primary school	0.420	1.522*	0.156	1.169	−0.183	0.833	−0.385	0.681
Employment status (Ref = No longer working)								
Still working	−0.282	0.754	0.282	1.326	0.240	1.272	0.343	1.409
Health perception (Ref = Good)								
Bad	0.532	0.532*	−0.610	0.543	−0.475	0.622	−1.123	0.325
Moderate	−0.011	−0.011	−0.275	0.759	0.096	1.100	−0.256	0.774
Income quintile:(Ref = Q5)								
Q1 (Less than RM500)—Bottom 20 %	0.863	2.370***	0.484	1.622	−0.395	0.673	−1.146	0.318
Q2 (RM501-RM2400)—Bottom 40 %	0.512	1.669*	0.602	1.826	−0.220	0.802	−0.583	0.558
Q3 (RM2401-RM5040)—Middle 20 %	0.562	1.754***	0.588	1.801	−0.586	0.557	−0.480	0.619
Q4 (RM5041-RM8840)—Top 40 %	−0.139	0.870	0.357	1.429	−0.110	0.896	0.753	2.123*
Income adequacy: (Ref = Enough for all things needed and able to save								
Not enough	2.698	14.855***	−0.771	0.463	−0.538	0.584	−2.249	0.106**
Enough for basic needs	2.326	10.232***	−0.710	0.492	−0.764	0.466	−1.022	0.360*
Enough for most things but not everything	1.651	5.215***	−0.339	0.713	−0.526	0.591	−0.329	0.720
Enough for most things needed	1.529	4.613**	−1.324	0.266*	−0.054	0.947	−0.694	0.500
Intercept	−3.455	0.032***	−3.588	0.028	−0.009	0.991	1.906	6.723
−2 Log Likelihood	1,417.415		624.993		561.517		485.973	

* p < 0.05

** p < 0.01

*** p < 0.001

Income Adequacy

Of those reporting inadequate income, 19 % had no savings, whereas 56 % of those who "had enough for most things needed" had no savings. The lowest percentage of the older Malay Muslim with no savings consisted of those who reported having "enough for all things needed and able to save" (1.1 %). Of those who did save within this group, an interesting pattern emerged. Moving up the saving motive hierarchy, the percentage of the older Malay Muslim in this group became larger. A similar pattern was observed among older Malay Muslim who thought that their money was "enough for most things but not everything" which formed the second lowest group without savings at 6.6 %. Conversely, among respondents who

claimed to have inadequate income, the pattern was reversed—i.e., a high percentage had no savings and of those with savings, the percentage became smaller upon moving to a higher level of saving motives hierarchy.

The Continuation Ratio Model of Saving Hierarchy

The continuation ratio analysis indicated which factors were associated with movement up the hierarchy within a multivariate framework. The coefficient of the independent variables indicates the likelihood of advancing from a given saving motive to any of the higher levels of saving motives, all else equal. Table 3 summarizes the multivariate results. To assist comprehension, results are explained on the basis of the empirical model of various saving motives.

No Savings

The results indicate that the following variables are significant factors in older Malay Muslim moving from no savings to higher level saving motives: family size, educational level, health perception, income quintile and income adequacy. Specifically, despite its small influence, the odds of older Malay Muslim moving upward from no savings to higher level of saving motives increases by 1.07 times with each additional person in family size. This result is contrary to the expectation that those with smaller families would be likely to move up the hierarchy. But, this result may suggest that family serves as a substitute for financial resources as concluded by Caraher (2000).

Results for education were also contrary to expectations. Older Muslim Malay with no formal education and those with only a primary education were 2.03 and 1.52 times as likely, respectively, to advance from no savings to fulfilling higher needs than were older Muslim Malay that had completed secondary school or above. This result may reflect the fact that only 16 % of the sample had more than a primary education. Among those with a primary education (55 % of the sample), the proportion having each of the various savings motives varied little. Lower education limits employment opportunity and/or ability to command a high wage or salary. Consequently, it could also be that those with lower education understand their limited lifetime earnings potential and, given the religious and cultural importance of Hajj, focus diligent effort on saving to fund that journey.

As expected, good health was associated with upward movement in the hierarchy. Those that perceived their health to be bad were 0.53 times as likely to move upward from no saving to higher saving motives as those that perceived their health to be good.

Those that were in the lowest income quintile were 2.38 times more likely than those in the highest income quintile to move up from no saving to higher saving motives. For individuals in the second and third lowest income quintiles as compared with individuals in the highest income quintile, the odds of moving up from no saving to higher savings motives were 1.67 and 1.75 times as high, respectively. This finding was contrary to expectations, but consistent with Caraher's (2000) observation that family in Malaysia is the central welfare provider of monetary and elder care.

As such, the findings may reflect the likelihood that older individuals with limited income co-reside with family, thus freeing financial resources to fund savings, however meager. In addition, these findings may also reflect precautionary behavior among older Malay Muslim in the lower income quintile. These individuals may understand their economic limitation and be motivated to save for

valued higher needs such as going for Hajj, whereas those in the higher income quintile might take their ability to save for such needs for granted since they have more resources. Those whose income was "not enough for all things" had odds of moving from no saving to higher savings motives that were 14.86 times as high as the odds for individuals that "had enough for all things needed and ability to save." A similar pattern was found for other groups as well. The odds of moving from no savings to higher savings motives were 10.23 times as high for those that had enough for basic needs, 5.22 times as high for those with enough for most things but not everything, 4.61 times as high for those with enough for most things needed as compared with those that enough for all things need and were able to save. These findings may reflect the priority the economically less fortunate group place on saving for the religiously and culturally important journey to Mecca as compared with those who might take their ability to make the pilgrimage for granted.

Motive:1 Basic Needs

Contrary to expectations, only one factor was statistically significant in the basic needs regression. The odds of progressing from savings for basic needs to higher level motives was lower for the respondents who assessed their income adequacy as enough for most things, as compared with those who perceived that their income was enough for all things needed and able to save. This result points to the importance of financial resources for moving up the savings hierarchy. Lack of other significant variables may be due to small sample size, a limitation of this study.

Motive:2 Security Needs

None of the independent variables were found to be significant factors in moving from security needs to higher level needs. As with the basic need saving motive, this result may be due to a small sample size.

Motive:3 Social Needs

Not all hypotheses were confirmed. Contrary to expectation, neither family size nor health status was a significant factor. Younger rather than older respondents were more likely to advance on the hierarchy. Given a 1-year increase in age, the odds of progressing from saving for social needs to saving for higher level motives decreased by 0.062. Consistent with expectations, those with more financial resources were also more likely to move up the hierarchy.

Specifically, the results show that respondents in the second highest income quintile were more likely to progress from savings for social motives to savings for higher

level motives. Respondents less likely to progress up the hierarchy were those who perceived themselves to have inadequate income or income that was just enough for basic needs as compared with those who had enough for all things needed and able to save. The odds of progressing from saving for social need to saving for higher level motives were 2.12 times that of the respondents who were in the second highest quintile as compared with those who were in the highest income quintile. The odds of progressing from saving for social to saving for higher level motives were lower for respondents who assessed their income adequacy either not enough or enough for meeting basic needs, as compared with those who perceived that their income was enough for all things needed and able to save.

Discussion

The level of savings held by older Malay Muslim largely reflects a lifetime of financial choices as well as the effects of past economic barriers, demands, and opportunities. This fact of economic life is especially important to remember when studying the financial characteristics and savings motives of the older Malay Muslim in this study. The early life of study respondents would have occurred before Malaysia gained independence. During their childhood and youth, the economy was largely agrarian. Educational opportunity was limited and prohibitively expensive. Most entered low paying employment as laborers or service workers. Low pay over a lifetime would limit ability to save. Employment in menial jobs would limit access to pensions. These types of financial constraints were certainly evident when examining the financial resources of this sample. Over 65 % reported either "having not enough income" (15 %) or "just enough for basic needs" (50 %). Nearly 6 in 10 reported "no savings." Further, in the multivariate analysis, resource constraints in the form of low education, low income, and limited income adequacy were key factors in explaining no savings, all else equal.

Still, older Malay Muslim can and do have aspirations for their remaining life and motives that guide allocation of any additional resources acquired. Given the observable pattern of savings behavior in this study, it appears that older Malay Muslim with the resources to move beyond basic needs did allocate those resources to different categories of savings in a hierarchical pattern. This observed pattern seems consistent with prior research using Maslow's hierarchy of human needs model (Devaney et al. 2007; Xiao and Anderson 1993; Xiao and Noring 1994). Resource adequacy appeared to be a key driving factor for upward movement, especially for the higher end of the

hierarchy, all else equal. Those in the highest income quintile were significantly more likely and those with not enough or just enough for basic needs were significantly less likely to move from social needs to self-actualization needs.

In Islam, religion is the way of life and fulfilling religious obligations becomes the central goal in a Muslim's life. Going for a Hajj is one of the pillars of Islam. Therefore, it is not unusual to find that older persons will make the Hajj their main priority for saving despite having to sacrifice saving for other needs such as social needs. In addition, the availability of financial institutions such as the Pilgrim Fund Board may have enhanced their motivation and ability to save for Hajj.

Several limitations of this study should be noted. First, due to resource constraints, the sample size is relatively small. Second, this study focuses on a subset of older Malaysians, specifically, older Malay Muslim. This focus was chosen for two reasons. One, given the demographics of older persons in Malaysia, the majority of the sample was Malay Muslim. The few Muslim in the sample that were Indian, Chinese, or from other smaller ethnic groups were excluded from this study as sample sizes of the non-Malay were too small to assess ethnic differences. Two, saving to travel to Mecca for Hajj is a very important savings goal for Muslims, but is not a goal shared by non-Muslim groups. Focus on Muslims only eliminated conflict of purpose related to self-actualization as a saving motive. Due to these selection decisions, results of this study cannot be generalized to all older persons (regardless of their faith) within Malaysia. It should also be noted that this study presumes that participants have comparable levels of religiosity. Future research could explore intensity of religious practice as a factor affecting savings behavior.

A second limitation is that movement up a savings hierarchy clearly requires resources. However, unlike respondents to studies conducted in the developed countries such as United States, respondents in this study were mostly low income and had very limited resources. Therefore, as we move up the hierarchy, very few respondents manage to achieve a higher level. Consequently, it is very likely that what has been measured is constrained choice versus respondents' true aspirations. As such, this study should be taken as a way to explore the saving behavior hierarchy as a conceptual framework for study of savings motives.

Third, the cohort interviewed in this study had limited ability to develop their human capital. For subsequent generations, education has become accessible and much less expensive. A similar study of the resources, savings motives and behavior of subsequent generations would likely yield results different from those found here.

Conclusions and Implications

Findings of this study underscore the reality that choice is possible only when resources are adequate. More than half of the older Malay Muslim in this study did not have savings and most of them indicated that their income was inadequate or barely sufficient to meet their needs. The no-saving group consisted mostly of those who were in the middle income quintile or lower, indicating their lesser opportunity to save. Most of the respondents in this study were only able to save for the purpose of attaining "lower level needs" in Maslow's hierarchy—that is basic necessities. Only a small number had the opportunity to save to fulfill security needs such as saving for retirement. Less than 3 % of the sample could reach toward saving for meeting social needs or self-actualization. Older females would have faced an even grimmer situation than their male counterparts in terms of opportunity to save over their working life. Study results indicate that feminization of poverty persists even to old age. Even those who reported having savings were only at the survival level.

The limited economic resources of study respondents made it challenging to track a clear cut upward movement in the saving motive hierarchy. Still, it is important to note that study results suggest presence of a savings hierarchy was among older Malay Muslim. Those that could move up the savings hierarchy appeared to do so in a systematic and ordered fashion. This finding extends the work on savings hierarchy to an international context and lends support for use of Maslow's hierarchy of human needs as a theoretical approach with broad general applicability. Since this study focused on older Malay Muslim, the self-actualization motive is specifically based on Islamic religious belief and motivation. This fact makes findings relative to the self-actualization motive not relevant to the non-Muslim. Future research should broaden the sample of non-Muslim elderly and measure the top saving motive in a form that is generalizable to both Muslim and non-Muslim Malaysians. Nevertheless, despite these limitations, the study's attempt to break down saving motives in a hierarchical manner provides a way to "visualize" one's priority in life, track one's progress towards financial freedom and it can also be used as a way to identify those who are economically vulnerable (by observing their savings "priority").

As the population of Malaysia continues to age, future decades will witness demographic changes that will require new social and economic policies to deal with the resulting challenges (Abdel-Ghany 2008). The economic well-being of the older Malaysians in this study is of grave concern since the majority appears to be quite vulnerable to poverty and destitution at advanced old age.

Recently, the Malaysian government released goals for the 10th Malaysian Plan for the years 2011–2015. Those goals include charting to become a high income nation with a target of increasing per capita income to RM38,845 (US $12,139) by 2015 (PM tables 10th Malaysia Plan 2010). To reach this goal, Malaysia must tackle issues related to ensuring support and income sufficiency among its people, especially the aged, which, as noted in this study, are clearly an economically vulnerable group.

References

Abdel-Ghany, M. (2008). Problematic progress in Asia: Growing older and apart. *Journal of Family and Economic Issues, 29*(4), 549–569. doi:10.1007/s10834-008-9129-4.

Alderfer, C. P. (1989). Theories reflecting my personal experience and life development. *Journal of Applied Behavioral Science, 25*, 351–365. doi:10.1177/002188638902500404.

Alessie, R., Lusardi, A., & Kapteyn, A. (1999). Saving after retirement: Evidence from three different surveys. *Labour Economics, 6*, 277–310. doi:10.106/s0927-5371(99)00013-5.

Ando, A., & Modigliani, F. (1963). The "life cycle" hypothesis of saving: Aggregate implications and tests. *American Economic Review, 53*, 55–84.

Barro, R. J. (1978). *The impact of social security on private savings*. Washington, DC: American Enterprise Institute.

Boeree, G. (2006). Personality theories: Abraham Maslow. Retrieved April 18, 2012 from http://webspace.ship.edu/cgboer/maslow.html.

Bryant, W. K. (1990). *The economic organization of the household*. New York: Cambridge University Press.

Caraher, K. (2000). Issues in incomes provision for the elderly in Malaysia. The Year 2000 International Research Conference on Social Security, Helsinki, 25–27 September. Retrieved April 17, 2012 from http://york.academia.edu/KevinCaraher/Papers/1446012/Issues_in_incomes_provision_for_the_elderly_in_Malaysia.

Chi, I., & Chou, K.-L. (1999). Financial strain and depressive symptoms among Hong Kong Chinese elderly: A longitudinal study. *Journal of Gerontological Social Work, 32*, 41–60. doi:10.1300/j08v32n0405.

Danziger, S., Van Der Gaag, J., Smolensky, E., & Taussig, M. K. (1982). The life-cycle Hypothesis and the consumption behavior of the elderly. *Journal of Post Keynesian Economics, 5*(2), 208–227.

Department of Statistics (2005). Population ageing trends in Malaysia, Monograph Series Population and Housing Census of Malaysia no 1, Malaysia.

Department of Statistics (2008). *Labour Force Survey* Report 2007, Putrajaya: Department of Statistics.

Devaney, S. A., Anong, S. T., & Whirl, S. A. (2007). Household savings motives. *The Journal of Consumer Affairs, 41*, 174–186. doi:10.111/j.1745-6606.2006.00073.x.

Economic Planning Unit (2005). Malaysia achieving the millennium development goal: Success and challenges, Damansara: UNDP. Retrieved August 7, 2010 from http://www.epu.gov.my/html/themes/epu/images/common/pdf/publication/UNDP1.pdf.

Engen, E. M., Gale, W. G. & Uccello, C. E. (1999). The adequacy of household saving. Brookings Papers on Economic Activity, 2,

65–187. Retrieved August 7, 2010 from http://www.jstor.org/stable/2534679.

Feinberg, S. E. (1980). *The analysis of cross-classified categorical data*. Cambridge: MIT Press.

Friedman, M. (1957). *A theory of the consumption function*. Princeton: Princeton University Press.

Hanna, S., Chang, Y. R., Fan, X. J., & Bae, M. K. (1993). Emergency fund levels of households: Is household behavior rations? In T. Mauldin (Ed.), *The Proceedings of the American Council on Consumer Interests 39th annual conference* (pp. 215–222). Columbia: American Council on Consumer Interests.

Haron, S. A., Sharpe, D. L., Masud, J., & Abdel-Ghany, M. (2010). Health divide: Economic and demographic factors associated with self-reported health among older Malaysians. *Journal of Family Economic Issues, 31*, 328–337. doi:10.1007/s10834-010-9207-2.

Haron, S. A., Yahaya, N., Paim, L., Hamid, T. A., Zainalaludin, Z., Riduan, M., et al. (2006). Living arrangement of older persons on welfare: Implication on health, economic wellbeing and satisfaction. *Asia Pacific Journal of Public Health, 18*, 26–34.

Hong, G., Sung, J., & Kim, S. (2002). Saving behavior among Korean households. *Family and Consumer Science Research Journal, 30*, 437. doi:10.1177/1077727x02030004002.

Kamus, I., & Abdul-Hamid, A. A. (2009). *Indahnya hidup bersyariat: Modul fardu ain, diri, keluarga dan masyarakat sepanjang hayat* (The beauty of living within the shariah: Life long fard-ul-ain module for self, family and society). Sungai Buloh: Telaga Biru Sdn Bhd.

Keynes, J. M. (1936). *The general theory of employment, interest, and money*. London: Macmillan.

Kotlikoff, L. J. (1989). *What determines savings?*. Cambridge: The MIT Press.

Kurz, M. (1984). Capital accumulation and the characteristics of private inter-generational Transfers. *Economica* 51(201): 1–22. Retrieved January 8, 2012 from http://www.jstor.org/stable/pdfplus/2553931.pdf.

Magrabi, F. M., Chung, Y. S., Cha, S. S., & Yang, S. (1991). *The economics of household consumption*. New York: Preager Publishers.

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50*(4), 370–396.

Maslow, A. H. (1954). *Motivation and personality*. New York: Harper and Row.

Masud, J., Haron, S. A., T.A. Hamid, T.A., & Zainalaludin, Z. (2006). Economic wellbeing of the elderly, Consumer Interest Annual, 52. Retrieved January 3, 2012 from http://www.consumerinterests.org/CIA/2006/2006Masud.pdf.

Oleson, M. (2004). Exploring the relationship between money attitudes and Maslow's hierarchy of needs. *International Journal of Consumer Studies, 28*(1), 83–92. doi:10.1111/j.1470-6431.2004.00338.x.

Ong, F. S. (2001). Aging in Malaysia: National policy and future direction. Retrieved August 30, 2010, from http://adrf.trf.or.th/Archive_data/AGEING%20IN%20MALAYSI1.doc.

Palumbo, M. G. (1999). Uncertain medical expenses and precautionary saving near the end of the Life cycle. *Review of Economic Studies, 66*(2), 395–421.

PM tables 10th Malaysia plan to power economy into first world status. (2010). The Star Online. Retrieved February 2, 2011 from http://www.thestar.com.my/news/story.asp?sec=nation&file=/2010/6/11/nation/6450721.

Shefrin, H. M., & Thaler, R. H. (1988). The behavioral life-cycle hypothesis. *Economic Inquiry, 26*, 609–643.

Xiao, J. J., & Anderson, J. G. (1993). A hierarchy of financial needs reflected by household paper assets. In: Mauldin, T., (Ed) 1993. *The Proceedings of the American Council on Consumer Interests 39th Annual Conference*, (pp. 207–214) American Council on Consumer Interests: Columbia.

Xiao, J. J., & Anderson, J. G. (1997). Hierarchical financial needs reflected by household asset shares. *Journal of Family and Economic Issues, 18*, 333–355.

Xiao, J. J., & Noring, F. E. (1994). Perceived saving motives and hierarchical financial needs. *Financial Counseling and Planning, 5*, 25–44.

Yahaya, N., Abdullah, S. S., Momtaz, Y. A., & Hamid, T. A. (2010). Quality of life of older Malaysian living alone. *Educational Gerontology, 36*, 893–906.

Author Biographies

Sharifah A. Haron is an Associate Professor in the Department of Resource Management and Consumer Studies, Faculty of Human Ecology at the Universiti Putra Malaysia. She specializes in Consumer and Family Economics. Her research focuses on consumer behavior, consumer empowerment, wellbeing and policy, household economic wellbeing and poverty. She serves on the editorial board of the Malaysian Journal of Consumer and Family Economics (MAJCAFE). She received her doctorate from the University of Missouri.

Deanna L. Sharpe is an Associate Professor in the Personal Financial Planning Department at the University of Missouri. She earned a master's degree in Economics and a Ph.D. in Family Resource Management from Iowa State University and holds a CERTIFIED FINANCIAL PLANNER^{TM} designation. Her research focuses on factors affecting later life economic well-being, including labor supply, family resource management, financial planning, consumer expenditure patterns, and retirement savings behavior. She serves on the editorial boards of the Journal of Family and Economic Issues, the Journal of Financial Planning and Counseling, and the Pertanika Journal of Social Sciences and Humanities.

Mohamed Abdel-Ghany is a professor emeritus of Consumer Sciences at the University of Alabama, Tuscaloosa. He holds a doctorate degree in family economics from the University of Missouri, a master degree in economics from Iowa State University, and a Bachelor of Science degree from Cairo University, Egypt. He is a Distinguished Fellow of the American Council on Consumer Interests, and a Distinguished Research Fellow of the International Society for Quality of Life Studies. He has written more than 120 refereed articles published in several journals and conference proceedings. His publications focus on consumption patterns, social indicators, and income distribution.

Jariah Masud is a Senior Research Fellow in the Institute of Gerontology, Universiti Putra Malaysia. Her research focuses on the economic and financial aspects of ageing. Her current research project is on the financial well-being in old age among micro credit recipients in Malaysia. She received her Ph.D in Management and Family Economics from Oregon State University, Corvallis.