UNDERSTANDING THE FACTORS INFLUENCING BANKING CUSTOMERS' FINANCIAL ASSET OWNERSHIP

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ABSTRACT

The objective of this study is to evaluate the factors which influence banking customers' financial asset ownership. Using the pyramid of Maslahah framework, the study classifies the needs of banking customers into four levels: those for basic financial services (hajjiyat); for financial assets for security or as a precaution (darruriyat); for financial assets for investment (tahsiniyah); and those for financial assets for religious purposes. To answer the research questions, a binomial logistic model was applied and the primary data were collected using a questionnaire survey with 300 respondents in Indonesia. It was found that the pattern of ownership of financial assets follows the order proposed in the theory of the pyramid of Maslahah. The study also found that financial asset ownership for transaction needs was mainly influenced by the variables of income and credit and that ownership of such assets for security or precautionary needs was largely determined by life cycle variables. In addition, ownership for investment needs was strongly influenced by the level of education, and for religious needs it was mainly determined by income levels and life cycle variables. The study findings provide important information for mapping the financial needs of Islamic banking customers.

Keywords: Islamic banking, Saving, Life cycle model, Financial needs.
JEL classification: D14; G21; G51.

I. INTRODUCTION

1.1. Background

Individual asset ownership consists of both financial and non-financial assets, with ownership determined by the different financial needs of individuals. According to the pyramid of Maslahah, financial needs can be classified into three levels, namely basic financial needs, emergency financial needs and financial needs for asset growth (Ahmed, 2011b). Individuals will use various types of financial and non-financial assets to meet their various financial needs.

Previous research on the factors influencing asset ownership has proposed that the distribution of asset ownership is based on different levels of income and welfare (Xiao, 1996; Xiao & Anderson, 1997). Individuals with different income levels will have different types of assets in varying proportions. Those with limited income will choose a financial asset that is only used for transaction purposes, namely one that has high liquidity and low risk. They will start to consider having riskier and higher return assets in line with increasing income. In addition to income, the patterns of asset ownership can be explained using life cycle theory. This theory explains that asset ownership is influenced by a person's life cycle; variables such as age, marital status and children have a significant influence on such ownership. The theory also posits that individuals with different life cycles will have various types of assets, which are used for different purposes (Bodie et al ., 2007).

Study of the patterns of ownership of financial assets based on the life cycle theory will provide important information for financial planners, bankers and related financial authorities in understanding the financial needs of potential customers in order to meet these.

1.2. Research Objectives

The main objective of the study is to understand the patterns and factors influencing financial asset ownership, specifically those of banking customers in Indonesia. As mentioned by Ahmed (2011b), understanding the factors that affect customers' asset ownership is very important for banking in its development of consumer-oriented products. By extending the pyramid of Maslahah, the study evaluates the factors that influence banking customers' ownership of various types of financial assets that are used to meet basic financial needs, as well as security, investment and religious needs. Specifically, the objectives of this study are as follows:

1. To examine the factors influencing banking customers' financial asset ownership.
2. To map banking customer financial needs based on the pyramid of Maslahah framework.

The paper is organized as follows. First, after discussing the motivation for the study and the research objectives in the section 1, the related literature on the pyramid of Maslahah, life cycle theory and asset ownership is reviewed in section 2. In section 3, the paper discusses the model development and research method employed to answer the research question . Further, in section 4, the findings of the study are discussed, while in section 5 and important conclusions are drawn and recommendations made.

II. LITERATURE REVIEW
2.1. Background Theory

Ahmed (2011), in his book *Product Development in Islamic Bank*, explains that the main objective of product development in Islamic banking is to realise *Maqasid Al Shariah*, which enables the creation of growth and justice. Product development in Islamic banking must follow two main provisions, namely compliance with sharia and realising the social goals of financial institutions to provide comprehensive financial services for all people, including the poor. Furthermore, to be able to compete in the industry, Islamic banking product development must pay attention to the needs and desires of its customers. The needs of clients can be explained using the pyramid of Maslahah approach (Ahmed, 2011a; Aris et al., 2013). This theory contends that Islamic banking should be able to meet three consumer needs, namely those of necessity/essentiality (*daruriyat*), of complementary requirements (*hajiyyat*) and of beautifications or embellishments (*tahsiniyat*).

Source: Ahmed (2011a)
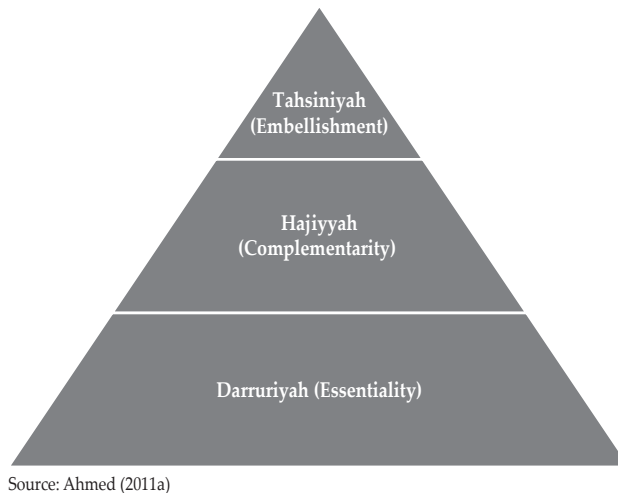
Figure 1 .
The Pyramid of Maslahah

The pyramid of Maslahah explains that there are three levels of human needs that must be met. At the bottom level, darruriyah refers to the basic needs for all humans to survive. Currently, in the era of distruptive technology, it is necessary for Islamic banking to be able to provide basic financial products that are easily accessible, flexible and inexpensive After the basic needs are met, people will have a need for security. This security requirement is a complementary requirement (hajiyat) and is located at the middle level of the pyramid of Maslahah. Financial institutions can fulfil this need for security by providing financial products that can be used to protect and maintain financial stability in the future. Related products include planned deposits, insurance, pension plans, and time deposits, all of which can satisfy the needs for security and protection. Once these needs are fulfilled, people's needs will rise to the next level, namely embellishment/

tahsiniyah. At this top level, people have the need to grow and develop, both in terms of assets and as individuals. Developing assets can be achieved through investment activities, which allow assets to grow faster against inflation and taxes. Products in this category include investments in stocks, sukuk/bonds, mutual funds and other investment products. Using the three levels of financial needs, financial institututions must be able to provide three types of financial products, namely:

1. Survival products: demand deposits, savings, and mortgages.
2. Security products: insurance, pension savings, and deposits.
3. Growth products: investment-based banking products to reduce tax and inflation risks.

Households will allocate assets to meet their various financial needs using a variety of financial assets available on the financial market. Several theories explain how people allocate assets, including the life cycle theory of Modigliani and Brumberg (1954) and the bequest theory of Bernheim et al. (1986). Life cycle theory proposes that individuals will maximise their utility and maintain their level of consumption over their life time, assuming they have a stable income throughout their lives. As a consequence, in order to smooth consumption, they will make a greater proportion of their savings during their working periods, and spend more during their retirement. This theory has been widely used as a framework for explaining household asset allocation.

To meet the various financial needs, ownership of financial assets is often influenced by the life cycle variable. Previous studies have found evidence of different types of asset ownership depending on different birth cohorts (Poterba & Samwick, 1997). In the early phase of the life cycle, households tend to have debt, with financial products related to loans and mortgages being popular among young households. In the intermediate phase, households will start accumulating assets, pay off their debts, and start owning financial products for saving and investment purposes. On the other hand, older households use their reserves to cover daily expenditure. The traditional life cycle model shows a positive correlation between savings and income growth. The level of saving will increase when someone starts working and fall when they marry and have children.

One important motivation for saving is to maintain consumption stability in the event of unexpected contingencies (Cagetti, 2003). People will start saving for retirement only when they are nearing retirement age. Various kinds of financial assets are used to fulfil the precautionary motives, such as insurance, time deposits, and planned savings. Financial assets for such needs are classified as liquid assets, which are easy to convert into cash, but with higher transaction costs compared to current saving accounts.After meeting the precautionary needs, people will start thinking about investment allocation, since insured households will invest more in stocks and bonds compared to uninsured ones (Qiu, 2016). Asset allocation for investment often follows the life cycle pattern; as such, someone's knowledge about investment and risk increases along with age (Peijnenburg, 2018). The proportion of wealth allocated to investment over the life cycle follows a hump shape pattern due to uncertainty aversion; that is, the allocation of assets for investment will peak in the middle of life cycle period and begin to decline people approach retirement age.

Although life cycle theory is widely used to explain asset allocation, some phenomena, such as an increase in saving among the elderly, cannot be explained by it. Bequest theory is another theory that is often used to explain ownership and allocation of assets. This explains that a people's desire to hand down an inheritance to their descendants is one important factor in the allocation of assets. Empirical studies have found that this bequest motive can explain the allocation of household assets in various countries such as America and China in order to meet the need for greater medical treatment costs (Ameriks et al., 2011).
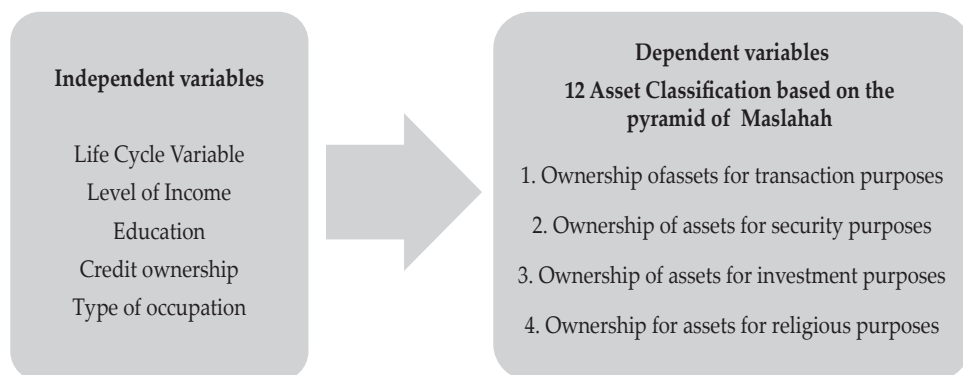
2.2. Previous Studies

Previous research on the factors influencing financial asset ownership has discussed the fact that individuals with different income levels will have different types of assets in varying proportions. In addition, asset ownership is significantly influenced by life cycle variables. The use of the life cycle model to explain the ownership of financial assets has identified a different pattern of financial asset ownership in each life cycle stage (Lansing & Morgan, 1955). Similarly, Bodie et al. (2007) also state that financial asset ownership involves different decisions made by individual families based on their life cycle. An empirical study conducted by Xiao (1996) shows that life cycle proxy variables such as the age of the head of the family, the number and age of children, and marital status, significantly affect families' financial asset ownership. The study also confirms previous research by Shefrin and Thaler (1988), who found that a person's desire to save will be greatly influenced by the level of their life cycle and their family resources. Most studies have made similar findings regarding the significant influence of life cycle on asset ownership, meaning that individuals with different life cycles will use different types of assets for different purposes. The studies imply that financial institutions must pay attention to the family life cycle when offering savings or investment products to their clients.

In addition to income and life cycle, the pattern of asset ownership is also influenced by other factors such as financial goals (Ramaswami et al., 1992); risk appetite (Hallahan et al., 2004); education (Longobardi & Pagliuca, 2016); and the possession of credit cards and a home (Xiao, 1996). The level of education also greatly influences a person's decision to own assets. Those with a high level of education and good knowledge about investing will prefer to invest in riskier assets in order to obtain higher returns (Sung & Hanna, 1996). Conversely, those with limited education will own fewer financial assets for investment.

Apart from education, a person's desire to own various financial assets is also influenced by their financial resources such as credit card and home ownership (Xiao, 1996). People who have a credit card also have the tendency to own various other financial assets because they have the opportunity to use the card to meet their needs. Another variable that affects ownership of financial assets is the type of occupation; Hira (1987) explains that the type of work influences the ownership of riskier assets.

2.3. Conceptual Framework

From the background theory discussed above, previous studies have demonstrated the influence between life cycle, income level, education, credit and type of occupation, with the ownership of various financial assets meeting three types of needs, namely transaction needs, security needs, and investment needs, together with financial assets for religious purposes. The framework is shown in Figure 2.

Independent variables

Life Cycle Variable
Level of Income
Education
Credit ownership
Type of occupation

Dependent variables
12 Asset Classification based on the pyramid of Maslahah

1. Ownership of assets for transaction purposes

2. Ownership of assets for security purposes

3. Ownership of assets for investment purposes

4. Ownership for assets for religious purposes

Source: Adapted from Xiao (1996) and Ahmed (2011a)

Figure 2.
Conceptual Framework

III. METHODOLOGY

3.1. Data

Primary data were collected by conducting a semi-closed questionnaire survey. The study sample comprised banking customers with different age ranges. We employed convenient sampling techniques; in order to find respondents, researchers went to several public places such as cafes, libraries and universities and people were randomly selected to be interviewed after being asked screening questions related to age, income level and bank accounts held. Questionnaire responses were collected from 304 respondents and 300 of these were used for estimation. The respondents included Islamic and conventional banking customers. The survey was conducted in several provincial capital cities in Indonesia, including Jakarta, Surabaya, Yogjakarta, Pekanbaru and Padang.

3.2. Model Development

To understand customers' financial needs, the study used the dependent variable related to asset ownership. A person's ownership of a specific asset indicates that there is a financial need to be met in using that asset (Xiao, 1996; Xiao & Anderson, 1997). For example, someone's education savings indicate that they needs funds to finance education. Ownership of a financial asset is strongly influenced by several factors, including a person's life cycle, income, credit, education level and any mortgage held.

Using a binomial logit model, this study examined the effect of independent variables relating to life cycle, income, credit, education and occupation of respondents on the ownership of various types of financial assets for transaction, security, investment and religious purposes. The dependent variables used in this study related to ownership of 12 financial and non-financial assets, consisting of (1) assets for transaction needs including savings and current accounts; (2) assets for security and precautionary purposes, including time deposits; (3) planned savings; (4) education savings; (5) assets for investment purposes including mutual funds; (6) unit links ; (7) stocks; (8) bonds/sukuk; (9) property; (10) and gold (11); and finally (12), assets for religious purposes, including pilgrimage savings.

The independent variables included life cycle classification and/or life cycle proxy variables. The life cycle proxy variables included age, marital status and number of children in the family. In addition, other explanatory variables were used, including income, credit card ownership, mortgage, education and type of work.

Based on the scale of the variables, the dependent variable used in this study was categorised as dummy variables , given the value of 1 if the customer had a certain financial asset and 0 if otherwise. The independent variables consisted of categorical and numerical ones. The logistic regression model was applied to analyse the relationship between the dependent and independent variables (King, 2008).

The logistic regression model used was:

$$\widehat{Y} = P = \frac{\exp(\hat{a}+\hat{b}_1 X1 + \hat{b}_2 X2 + \cdots + \hat{b}_n Xn)}{1 + \exp(\hat{a}+\hat{b}_1 X1 + \hat{b}_2 X2 + \cdots + \hat{b}_n Xn)} \tag{1}$$

Because Y is an exponential variable, it must be transformed by multiplying each side by

$$1 + \exp(\hat{a} + \hat{b}_1 X1 + \hat{b}_2 X2 + \cdots + \hat{b}_n Xn) \tag{2}$$

Therefore, the logit model used was:

$$Y = \exp(\hat{a} + \hat{b}_1 X1 + \hat{b}_2 X2 + \cdots + \hat{b}_n Xn) + e \tag{3}$$

where
Y   : Dependent variable - ownership of 12 types of financial assets
X1   : Income
X2   : Gender in dummy variable
X3   : Length of schooling
X4   : Marital status (single, married with children, married without children, single parent)
X5   : Age category (five categories : ≤ 24 years; 25 to ≤ 34 years; 35 to ≤ 44 years; 45 to ≤ 54 years; and ≥ 55 years old)
X6   : Mortagage held (dummy variable)
X7   : Outstanding car financing

X8   : Credit card ownership
X9   : Type of occupation (formal or informal sector)

IV. RESULTS AND ANALYSIS
4.1. Results
4.1.1. Characteristics of the Respondents

The study respondents fell into five age level categories: ≤ 24 years old; 25 to ≤ 34 years old; 35 to ≤ 44 years old; 45 to ≤ 54 years old; and ≥ 55 years old. The proportion of respondents in each age range is almost the same, except for young respondents ≤ 25 years (8.3%) and respondents at retirement age ≥ 55 years (19 %). The majority of participants were male (65%). Regarding marital status, most of the respondents were married (76%), with 20% unmarried and 4% with single parent status They had an average of 1-2 children (44%); 27% had more than three children and 28% no children. In addition, most of the respondents had a diploma, or a bachelor's or graduate degree (78%). In general, those chosen for the study had different life cycles in terms of age, marital status and number of children. Their characteristics are shown in Table 1.

Table 1.
Characteristics of the Respondents

Variable	Percentage (%)
Gender	
Male	65
Female	35
Age range	
≤ 24 years	8.3
25 to ≤ 34 years	25
35 to ≤ 44 years	23
45 to ≤ 54 years	24.3
≥ 55 years old	19.3
Marital status	
Unmarried	20
Married	76
Single parent	4
Number of children	
1-2 children	44
≥ 3 children	28.3
No children	27.7
Education level	
Below high school	4
High school	17
Diploma, bachelors or graduate	79
Income (per year)	
≤ 50,000,000	21
50,000,000-100,000,000	20
≥ 100,000,000	59

Source: Survey data

4.1.2. Financial Asset Ownership and Conditional Financial Asset Ownership of the Respondents

Table 2 shows the percentage level of ownership of the 12 financial assets and the conditional ownership if the respondent had other financial assets. Assets for transaction needs were held by almost all the respondents; 93% had a savings account at a bank, with the remaining 6% having a current account, whereas the percentage of respondents owning security-based financial assets was mostly lower than that of those owning financial assets for transactions. The survey results show that only around 39% of the respondents had planned savings, 35% had education savings and only 22% had time deposits. In addition, the ownership of investment-based financial assets was the least popular financial aset type. Only fewer than 4% of the respondents owned bonds and mutual funds, and 8% chose investments in shares. The most popular financial asset for respondents' investments was unit link, but still only at around 10%. Compared to investment in financial assets, the respondents preferred to invest in real assets; 31.3% chose investment in property and more than 34% chose investment in gold.

Table 2 shows the conditional ownership of a financial asset if the respondent had another. Some of the interesting results from the conditional ownership of financial assets show that if someone has a savings account, then the percentage of those having a security-based financial asset is around 20-40%, while the percentage of those having an investment-based financial asset is less than 10%. On the other hand, someone who has a current account has a higher probability of owning assets for security and investment than someone who has a regular savings account.

Another interesting finding was the high probability that individuals will have more than one financial asset for security; for example, 83% of individuals who have education saving also have education insurance. The respondents were also likely to combine more than one type of insurance product. For example, someone who has education or life insurance has a high probability of having health insurance. Table 2 also shows the pattern of the relationship between ownership of security-based and investment-based assets, which indicates the possibility that someone who has assets for investment also has ones for precautionary needs, in the form of planned saving, time deposits or various types of insurance.

In general, the results of the conditional ownership analysis also support the pyramid of Maslahah theory of Ahmed (2011a). The results show that transaction-based financial assets are owned by almost all respondents, whereas security-based financial assets are owned by only around 30%, and an even lower percentage have investment-based financial assets, at less than 10%. The study shows that respondents who have investment-based assets have a high probability of owning other financial assets based on security or transactions, but not vice versa. Interestingly, in Indonesia people will start to think about having assets for special needs; in this case, saving for pilgrimages before owning other financial assets. 36% of the respondents had hajj savings, indicating that ownership of financial assets for such needs was considered relatively important, beyond the needs for investment. A summary of asset ownership patterns is shown in Table 2.

Table 2.
Pola Kepemilikan Asset Keuangan

Type of Ownership	% Owning if Owning												% Total Sample Asset Ownership
	Assets for Transactions			Assets for Security			Assets for Investment						
	Savings	Current Account	Planned Savings	Education Savings	Time Deposit	Mutual Fund	Unitlink	Stocks	Bonds	Property	Gold	Hajj Savings	
Savings		94	99	99	99	100	100	100	100	95	95	96	93
Current Account	6		13	11	17	10	21	22	42	11	9	9	6
Planned Savings	41	83		73	64	60	79	75	92	47	53	46	39
Education Savings	37	61	64		61	80	66	63	75	41	44	48	35
Time Deposit	24	61	36	39		60	45	54	58	31	34	31	22
Mutual Fund	4	6	5	8	9		21	21	8	4	2	5	3
Unitlink	10	33	19	18	19	60		33	25	12	10	15	10
Stocks	9	28	15	14	19	50	28		50	10	15	14	8
Bonds	4	28	9	9	10	10	10	25		7	8	7	4
Property	32	56	37	38	43	40	38	38	58		51	36	31
Gold	34	50	46	42	51	20	34	63	67	54		46	34
Hajj Savings	37	56	42	49	49	50	55	63	58	41	49		36

Source : Survey data

4.1.3. Logistic Regression Results

The logistic regression model was used to analyse the factors that affect ownership of the four types of financial assets as indicators of financial needs, namely transaction-based financial assets; financial assets for security and precautionary purposes; financial assets for investment purposes; and financial assets for religious purposes.

4.1.3.1. Factors Influencing the Ownership of Financial Assets for Transaction Purposes

The results of the analysis of the factors that influence the holding of savings are shown in table using 3 . The results shows that such holding is significantly influenced by the type of occupation, credit card ownership, income, and age. Respondents who had jobs in the formal sector had a 2.82 times greater probability of having savings compared to those who worked in the informal sector. The likelihood of someone having savings will increase by 3.07 times if they own credit cards. In addition, when respondents' income increases, their probability of having savings will increase by 1.82 times.

Age category 5 was used as a base variable to make comparisons between the age categories. Compared with respondents aged ≥ 55 years, the likelihood of someone in age categories 1, 2, and 4 having savings compared with respondents in age category 5 did not differ significantly. However, respondents in the 35 - ≤ 44-year old category were less likely to have savings than those aged over 55 years. This finding disagrees with traditional life cycle theory, which suggests that people will save more in their youth and less in retirement. The results of this study show that banking customers have more savings in retirement compared to the lower age category, because at a younger age customers may allocate more to other types of assets for security or investment purposes.

4.1.3.2. Factors Influencing the Ownership of Financial Assets for Security Purposes

Table 3 shows the findings on the factors influencing financial asset ownership for security purposes, namely planned savings, education savings and time deposits. The results show that the holding of planned savings is influenced by mortgage and credit card ownership, while none of the life cycle variables significantly influences ownership of savings plans. The likelihood of people having a savings plan will increase when they have a mortgage and credit cards. The obligation to pay regular installments makes people maintain financial security by having a savings plan product.

The study has also made some interesting findings regarding the holding of education savings. In addition to being significantly influenced by the level of income and ownership of mortgages, the holding of education savings is greatly influenced by the respondents' marital status. Compared to single respondents, the possibility of married respondents having educational savings increases by 3.63 times and the likelihood of having educational savings products increases by 7.57 times if the respondent is a single parent.

In contrast to planned and education savings, the ownership of time deposits is significantly influenced by certain life cycle variables, namely age and marital status. Compared with respondents in age category 1 (≤25 years), those in the age categories 2, 4 and 5 have more possibility of having deposit products, meaning that the older the respondent, the greater the chance of having such a product. However, the possibility of someone having a deposit product decreases if they are married compared to someone who is unmarried. Those who are married prefer to have education savings. Other significant variables influencing the ownership of time deposits are income level, and the ownership of mortgages and credit cards.

In general, the ownership of banking products for security purposes, especially educational savings and deposits, is strongly influenced by the life cycle variables of age and marital status. The levels of income and credit are also important variables determining the ownership of financial products for security. The holding of a mortgage may indicate financial stability in the banks' eyes. Someone in a fairly stable financial condition will start thinking about having a security-based financial asset to be used for precautionary purposes.

4.1.3.3. Factors Influencing the Ownership of Financial Assets for Investment Purposes

Table 3 also show the findings on the factors influencing the ownership of financial assets for investment purposes, including ownership of shares, bonds, unit links and mutual funds. The results show that the variables that significantly affect ownership of investment-based financial assets are the respondent's length of study, holding of a mortgage and life cycle variables. As the length of education increases, the likelihood of having shares, bonds, unit links and mutual funds also increases.

In addition, there are several other variables, such as age and life cycle ones, that affect the ownership of stocks and unit links . In terms of share ownership, respondents aged 35 - ≤44 has a greater likelihood of owning shares compared to those aged ≤55 years. The age variable also clearly explains unit link insurance ownership; i.e., respondents aged 45- ≤54 years are eight times more likely than those aged over 55 years to have such insurance.

This study also examines the factors influencing the ownership of real asset investments in property and gold. The tests conducted on the ownership of such investments show that credit card and mortgage ownership are significant variables explaining property and gold ownership. Someone who is a single parent has a greater possibility of having investment property than someone who is not married. Age is another significant variable explaining the ownership of real asset investments; someone who is in age category 4 has a greater chance of owning property compared to those in age category 5. Furthermore, it can also be seen that gender significantly influences the ownership of gold, with the chance of women owning gold higher than that of men.

This finding shows that life cycle variables only affect property ownership and do not affect that of other investment-based financial assets. The important variables determining this type of assets are the level of education and of credit.

4.1.3.4. Factors influencing the ownership of financial assets for religious purposes

Finally, Table 3 also shows the findings on the factors influencing the ownership of financial assets for religious purposes, namely hajj savings products. The results show that the ownership of such products is influenced by several factors, including income level, gender, status, age and mortgage ownership. The likelihood of someone having hajj savings will increase in line with their income and if they already have somewhere to live. Regarding the age factor, younger respondents (those aged 25- ≤34 years) had a lower probability of having hajj savings than those aged over 55. Those who are married also have a greater likelihood of having such savings. The findings of this study can be summarised as follows.

1. Ownership of financial assets for transaction needs is largely determined by the variables of income, credit ownership and type of work. Savings products are not influenced by life cycle variables because such products are needed by all people for their daily transactions.
2. Ownership of financial assets for security or precautionary needs is largely determined by life cycle variables such as age and marital status. Those of a certain age and marital status are likely to have this type of financial asset.
3. Ownership of financial assets for investment needs is strongly influenced by the level of education of the respondents and their economic welfare. Life cycle variables do not influence the decision to own assets for investment needs.
4. Ownership of assets for special needs, namely those of pilgrimages, is mostly influenced by income levels and gender. Several life cycle variables also affect the holding of such savings, including marital status and the age level of the respondents.

Table 3.
Logistic Regression Results: Factors Influencing Financial Assets Ownership

Asset Ownership	Income	Gender	Length of Schooling	Married/ Single	Single Parent	Odd Ratio Variable					Mortagage	Car Financing	Credit Card	Type of occupation
						Age_1	Age_2	Age_3	Age_4	Age_5				
Savings	1,8157**	0,4422	0,9401	0,8478		0,5357	1,1959	0,2133*	0,2596	BV	0,6954	1,1676	3,0799*	2,8266**
Current Account	1,14	1,19	1,014	2,32	2,3199	BV	1,949	0,389	0,799		1,1369	1,545	3,955	0,5856
Planned Savings	1,1563	0,9877	0,986	1,3658	2,5477	1,3364	1,3106	1,3813	1,6469	BV	1,7243*	1,4574	2,2321**	1,159
Education Savings	1,3051*	0,63868	0,9779	3,6311**	7,5779**	0,5371	1,2062	1,7576	1,7953	BV	2,5974**	1,2432	1,473	1,5417
Time Deposit	1,5070**	0,9758	0,9907	0,3158**	0,4367	BV	4,0451*	3,5399	5,2214*	4,9976*	1,81*	0,817	2,7496**	0,9323
Stock	1,0309	0,897	1,652**	1,512	OMT	1,708	0,8818	2,904	1,468	BV	1,23	2,644**	6,746**	0,3689**
Bonds/Sukuk	0,7284	0,2759	1,075	2,0248	OMT	OMT	1,858	0,676	1,131	BV	0,954	2,023	1,537	1,607
Unitlink	1,1146	2,1404	1,2319*	1,5746	12,346**	6,022	4,393*	3,45	5,355**	BV	2,907**	2,265**	2,708**	1,18198
Mutual funds	1,1600	0,59	1,94726**	0,8346	OMT	OMT	2,2518	3,8709	5,0236	BV	4,5283*	1,4742	1,7236	1,5826
Property	1,2073	0,9915	0,9366	2,21	5,001**	1,821	1,127	0,893	1,958*	BV	1,644	0,556*	1,891**	0,8438
Gold	1,0018	0,523**	0,948	1,799	2,031	0,3194	1,211247	0,9069	1,6978	BV	1,72**	0,6258	2,275**	0,663748
Hajj savings	1,7360**	0,53**	0,985	2,808**	3,105	OMT	0,4431**	0,8844	0,7507	BV	2,2282**	0,6827	1,4925	0,8969

Source: Authors' findings

Note: ** indicates a significant variable. BV is the base variable which is used as a comparison for other variable categories. For categorical variables such as age, sometimes BV age category 1 and sometimes use BV age category 5 are used. BV is selected based on the model that provides the most significance value and the best model suitability. OMT is the omitted variable I. A variable is omitted if none of the respondents who fall into that category has the financial asset in question.

4.2. Robustness Test

To check the robustness of the study, a chi-square test was used to examine whether the overall constructed model was significant in predicting the actual cases, and pseudo R-squared to show that the probability of having a specific financial asset can be explained by the explanatory variables. The results of the robustness test are shown in Table 4.

Table 4.
Robustness Test

Asset	Chi- Square	Prob	Pseudo R2
Savings	20,7 *	0,0509	0,1412
Current Account	15,09	0,2365	0,1157
Education Savings	56,73**	0,0000	0,1476
Planned Savings	28.56.00**	0,0075	0,0717
Time Deposit	28,65**	0,0073	0,0909
Stocks	48,9**	0,0000	0,2929
Bonds/Sukuk	8,69	0,6509	0,0922
Mutual Funds	22,02**	0,0242	0,2591
Unitlink	40,97**	0,0001	0,2154
Property	23,6**	0,0350	0,0638
Gold	32,36**	0,0021	0,0848
Hajj Savings	51,55**	0,0000	0,1325

Source: Authors' findings

The chi-square value shows the ability of the overall model to significantly predict the factors that affect ownership of financial assets. The test results show that the chi-square value is significant at 5% for ten of the financial assets, namely education savings, planned savings, time deposits, stocks, mutual funds, unit link , property investment, gold investment and hajj savings, while it is significant at 10% for ordinary savings. However, the model as a whole is not significant for current accounts or bonds/sukuk due to the small number of the sample that owned these two assets. Therefore, we can eliminate the findings on current account and bond/sukuk ownership. The pseudo R-square shows the explanatory variables' ability to explain the dependent variable. The test results show that this value is below 20%, indicating that there are many other variables that can explain ownership of financial assets.

4.3. Analysis

The results indicate that ownership of the 12 types of financial asset is influenced by different factors. The life cycle variable only affects ownership of assets for security and special purposes. Ownership of security-based financial assets such as education savings and time deposits is significantly influenced by life cycle variables such as marital status and number of children. The results of this study are in accordance with the research of Cagetti (2003), who explains that the motivation to save for precautionary purposes will increase when a person marries and has

children. Another product, hajj savings, is also influenced by life cycle variables, namely age and marital status (Longobardi & Pagliuca, 2016; Xiao, 1996)

It was also found that ownership of financial assets for transaction purposes and for investment such as stocks, deposits, and mutual funds is not influenced by life cycle variables. This research indicates that the traditional life cycle theory of Modigliani and Brumberg (1954), which states that someone will save more during their working period in order to smooth their consumption and spend more during the retirement period, cannot be applied to every type of financial asset. Consumers' financial behaviour for investment products is strongly influenced by needs and other factors such as income levels, education levels and level of credit held.

The results of the study indicate that financial investment products are owned by less than 10% of the respondents; that is, only those who have a high level of education. These results are consistent with research conducted by Sung and Hanna (1996), who found that those with a higher education level had better asset analysis and evaluation skills, and therefore preferred riskier asset types for investment. However, for unit-linked investment products, life cycle variables, in the form of single parent status and age, significantly influence ownership of this type of asset. The unit-linked characteristic, which combines elements of investment and protection, is in demand by single parent respondents, who want more protection for their financial situation. It was also found that certain groups of respondents (those married with children and single parent respondents) used a combination of several financial assets to protect their financial situation. These groups of respondents used extra protection by having several types of financial products for security, including planning savings, education savings and time deposits. A high correlation between ownership of investment-based financial assets and security-based financial assets was found; that is, respondents who already had investment-based assets generally also had security-based assets. This finding confirms the previous study by Qiu (2016), who found that households who owned insurance products would invest more that those who did not. The study findings are also in line with the pyramid of Maslahah, which explains that people will need growth products after their security needs have been met.

Another interesting finding is the significant influence of the credit variable, including home ownership credit, car ownership credit and/or credit card possession, on the ownership of financial assets based on security and investment. This finding indicates that credit ownership information can be used by banks to sell other banking products . Housing loans indicate that a person has met their housing needs, so have more resources to enable them to own other types of financial assets. This confirms the previous study of Xiao (1996), who indicated that families who owned credit cards and a place to live were more likely to have various other financial assets. The findings of this study could be used by the Islamic banking sector to conduct customer mapping, optimise marketing strategies and develop Islamic banking financial products. To map customers' financial needs, this study used the pyramid of Maslahah framework, by dividing financial needs into four types of financial products, comprising basic products, security products, investment products and financial products for religious purposes (Ahmed, 2011a) . The results of the study can map consumers in the following way shown in Table 5.

Table 5.
Customer Mapping

Product	Objective	Type of Product	Customer Characteristics	
			Life Cycle Variable	Other Variables
Darruriyat/ basic products.	Providing daily transaction needs.	Saving and current accounts	The entire population with various life cycles.	
Hajiyyat / security products.	Products for security and protection purposes.	Planned savings. Education savings. Time deposits.	Married customers. Single parents.	Individuals who have a mortgage, credit cards, and a high income.
Tahsiniyat /growth products for investment.	Products aimed at asset growth.	Stocks. Bonds/sukuk. Mutual funds.	No specific characteristics.	Individuals who have a credit card, housing credit (KPR) and a high level of education.
		Unitlink	Single parents.	Individuals who have a credit card, housing credit (KPR) and a high level of education.
Hajj savings.			Females in various age ranges.	Individuals who have high incomes and KPR are more likely to have hajj savings.

Source: Authors' findings

V. CONCLUSION AND RECOMMENDATIONS
5.1. Conclusion
This study aimed to determine the factors that influence banking customerss ownership of financial assets. The information is intended to be used to map customer characteristics by Islamic banking in order to develop banking products that meet three levels of financial needs, namely basic needs (darruriyah), complementary needs (hajiyyah) and development needs (tahsiniyah).

The results indicate that the pattern of ownership of financial assets follows the order of the level of need based on the pyramid of Maslahah; financial products for transaction purposes are owned by almost all the respondents, those for precautionary purposes are owned by around 30%, and products for investment are only owned by 10% of the respondents. There is an interesting pattern in which ownership of one financial asset is closely related to that of another. Security-based financial asset ownership is also closely related to asset ownership for investment. Those who have one security-based financial asset product will tend to have another. Likewise, someone who has investment-based financial assets will certainly have other financial assets for transaction and precautionary needs.

Using logistic regression, it was found that financial asset ownership was influenced by several different factors. Ownership of financial assets for transaction needs is largely determined by the income variable, credit ownership and type of work, while ownership of financial assets for security or precautionary

needs is largely determined by life cycle variables such as age and marital status. Ownership of financial assets for investment needs is strongly influenced by the level of education of the respondents and their economic welfare, while ownership of assets for special needs, namely that of pilgrimage, is more influenced by income levels and gender. The results of this research could be used for developing products and services in Islamic banking.

5.2. Recommendations

Several important findings were made related to factors influencing banking customer financial needs. These can be compiled into several recommendations and research implications, as discussed below. The first recommendation is related to the research result that there is a close correlation between security-based financial asset ownership and other security-based financial asset ownership , and also a close correlation between security-based financial assets and investment-based ones. These findings could be used by banks to optimise their marketing strategies by using cross-selling and up-selling approaches. Cross-selling strategy is used to market similar products to existing customers. This study considers the tendency of consumers who already have security-based financial products such as deposits to have a greater interest in other security-based financial products, such as education savings and savings plans.

Moreover, Islamic banking could also use up-selling strategy to market products at a higher level, which in this case are marketing investment banking products to existing customers who use security-based financial products. Islamic banking has an opportunity to develop investment-based financial products that are currently needed by respondents.

There are several obstacles to investing through a Sharia bank, which are related to the lack of types of investment products and the lack of facilities offered by the banks. Islamic banks can respond by creating halal investment products to meet the financial needs of customers at the embellishment level. For regulators, it is important to provide support in the form of regulations and incentives for Islamic banking to create new products, especially investment-based ones.

The study has several limitations, one of which is that the research has not been able to explain further the needs of the poor. Therefore, it is suggested that this issue be further explored, as according to the pyramid of Maslahah, one of the basic needs that must be met by Islamic banks is that for financial products and services for the poor.

Acknowledgments

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