Who demands which type of life insurance? various factors in life insurance ownership

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Abstract

This study examined factors related to the ownership of life insurance by focusing on the role of the psychological characteristics of the respondents. Using a recent online consumer survey, logistic regression analyses were utilized based on four groups: (a) not having any term life insurance or cash value life insurance; (b) having term life insurance policy only; (c) having cash value life insurance policy only; and (d) having both term life insurance policy and cash value life insurance policy. We found that all of the financial status and psychological characteristics were significant, while some of the demographic characteristics were not significant. The specific effects of the characteristics differ by types of ownership. The ownership of term value life insurance was better explained by financial and psychological characteristics, whereas demographic characteristics factored more in the ownership of cash value life insurance. Discussion and implications are provided. © 2021 Academy of Financial Services. All rights reserved.

Keywords: Life insurance; Term life insurance; Cash value life insurance; Psychological characteristics

1. Introduction: The need to understand the demand for life insurance

Life insurance is primarily designed to protect the insured against the possibility of losing an income stream, such as the premature death of the family breadwinner, which is the purpose of all types of life insurance (Thoyts, 2010). Term life insurance is specifically

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designed to provide a death benefit with a relatively cheaper insurance premium (Gitman, Joehnk, & Billingsley, 2014). On the contrary, cash value life insurance charges a higher premium to provide a savings element in addition to a death benefit; this savings element is called the "cash value" element (Rejda & McNamara, 2016).

The main differences between term life insurance and cash value life insurance, as well as suggestions for consumers, can be discussed with a financial planner. Whereas term life insurance has the sole purpose of protecting lost income, cash value life insurance is more likely to be the product of financial planning. For example, cash value life insurance can have a strategic financial planning purpose, with tax-deferred savings on estates, income, and bequests (Clark, 2010; Cymbal, 2013; Kait, 2012; Whitelaw, 2014). In addition, cash value life insurance can be a financial option for retirement savings (Tannahill, 2012) and investment tools (Cordell & Landgon, 2013). Therefore, many strategies in financial planning can be related to the purchase of cash value life insurance (Grable, 2016).

Theoretically, the choice between term life insurance and cash value life insurance depends on consumers' specific financial needs and situations (Gitman et al., 2014; Grable, 2016). However, the decision regarding which life insurance policy is the best option is still in question for many individual consumers. Although roughly three types of life insurance can be discussed and evaluated—term life insurance, cash value life insurance, and group life insurance—the focus of such an argument made by practitioners is often placed on the first two types of life insurance, considering the fact that group life insurance provided by employers often comes without multiple options for individual purchases (Rejda & McNamara, 2016). Although this question is repeatedly asked by numerous individual consumers, it is debatable even among financial practitioners as to who actually needs term life insurance versus cash value life insurance.

The question is unlikely to be answered when factors come into play beyond classical demographic and functional characteristics and expected demand, accordingly. The functional characteristics of life insurance purchases, such as maintaining or improving financial security, as well as the psychological characteristics of such purchases, including feelings of comfort and recognition, can lead to these purchases being made (Grable & Goetz, 2017). Song, Park, Park, and Heo (2019) also emphasized that the consumer's personal experience (i.e., death of a family member) can spark a life insurance purchase, in addition to his or her financial circumstances. If a financial planner leans only on the functional characteristics of the purchases, there may arise communication conflicts between the financial planner and the consumer, meaning that the consumer's needs will ultimately not be fulfilled (Grable & Goetz, 2017). Therefore, it is important to better estimate the effect of consumers' psychological characteristics on demand for life insurance purchases to increase the accuracy of the suggestions and relevance to consumers' different life situations.

Therefore, the primary goal of this study is to analyze the role of psychographic factors in the ownership of life insurance through the use of an online consumer survey. Specifically, to investigate how these various factors are related to the ownership of life insurance, this study distinguished the type of ownership into four categories: (a) none of either term life insurance or cash value life insurance; (b) term life insurance only; (c) cash value life insurance only; and (d) both types of life insurance. In this study, three aspects of explanatory factors of life insurance ownership were assessed: financial status characteristics,

psychological characteristics, and demographic characteristics. Financial status characteristics include household net balance, the ownership of emergency funds, financial risk tolerance, and subjective financial knowledge. Psychological characteristics include locus of control, financial satisfaction, financial self-efficacy, and life satisfaction. Demographic characteristics include the gender of the respondent, household income level, the working status of the respondent, the number of children in the household, education level, age, race, and the marital status of the respondent, as well as the perceived health condition of the respondent. The findings of this study, based on psychographics that include a combination of demographic factors and psychological factors (Heo, 2020), can provide an empirical understanding of their effects on the ownership of life insurance by type. Through this study's analysis of the psychographic factors' associations with life insurance, it is expected that financial practitioners and researchers will be able to better accommodate and identify various consumer needs for the ownership of life insurance.

The research questions in this study are as follows: In what ways are financial status characteristics, psychological characteristics, and demographic characteristics associated with life insurance ownership by type of life insurance? Understanding the associations between various factors and life insurance ownership, as well as the ways in which the associations differ across the subsamples by type of life insurance, will provide financial professionals with important insights when they offer financial counseling and planning services in the future.

2. Literature review

2.1. Different needs of life insurance by types

There should be different levels of consumer demand, pure protection, or an additional investment purpose. Term life insurance is well-known for its pure protection purpose, whereas cash value life insurance can offer an additional saving purpose beyond the pure protection of the lost income of the insured (Gitman et al., 2014; Grable, 2016; Rejda & McNamara, 2016). Thus, there can be conceptual and empirical differences in understanding influential factors in the demand for life insurance by type.

However, to our knowledge, there has been little empirical and conceptual research distinguishing the different demand for life insurance by type and applying psychological characteristics to an empirical analysis for financial practitioners. Based on studies from a conventional perspective with regards to life insurance, life insurance has been considered to be a substitute for future savings or a potential income source of the deceased (Li, Moshirian, Nguyen, & Wee, 2007). Many studies based on this perspective in the current literature have identified factors related to life insurance purchases regardless of type. Predictors of the demand for overall life insurance ownership or purchase primarily include three areas (Anderson, & Nevin, 1975; Heo & Grable, 2017; Liebenberg, Carson, & Dumm, 2012; Zietz, 2003): (a) socio-demographic characteristics; (b) financial characteristics; and (c) psycho-behavioral characteristics.

Other studies (e.g., Heo, Grable, & Chatterjee, 2013) have discussed the idea that cash value life insurance should be analyzed differently from term life insurance because it can function as a complement to savings. Heo et al. (2013) suggested that it is important to

further discuss practical considerations for financial services when financial planners and advisors provide suggestions to clients. Thus, placing a greater emphasis on the distinction of life insurance ownership by type can extend the current discussion of the literature and add more empirical evidence to existing body of knowledge.

2.2. Determinants generally known for term life insurance

Term life insurance policies provide insurance coverage for limited periods of time at fixed payment rates. The policies only pay death benefits to the beneficiaries if the person insured dies within the time period. After that period, term life policies do not provide any additional benefits to the insured, and the policies must be renewed with different payments or conditions if coverage is desired for another time period (Brown & Goolsbee, 2002). This is why term life insurance policies are often described as pure protection and can act as car or homeowner's insurance (Garman & Forgue, 2018).

Although extensive studies in the current literature have examined the determinants of life insurance purchasing without distinguishing between type, some studies have found that the ownership of term life insurance is related to various household characteristics. Anderson and Nevin (1975) found that young married couples were more likely to purchase term life insurance when they had greater net worth, the spouse already had life insurance before marriage, and there was no influence of an insurance agent on the life insurance decision. Goldsmith (1983) also examined the demand for term life insurance by focusing on the human capital of spouses in married-couple households. He found that the spouse's higher educational level and the spouse's employment status (e.g., the spouse's participation in the labor force) decreased the spouse's likelihood to purchase term life insurance. The spouse's existing insurance coverage exceeding the sample mean, a greater household asset level, and larger household size were also negatively associated with the spouse's likelihood to purchase life insurance. However, a greater household income level increased the likelihood of the insurance purchase.

Liebenberg et al. (2012) used the 1983-1989 Survey of Consumer Finances (SCF) panel dataset to investigate the determinants of the demand for a new life insurance policy, as well as a change in life insurance policy. They found that households whose statuses changed over the two periods (i.e., 1983 and 1989)—including having new children, experiencing relatively high levels of income growth, and launching new jobs—were more likely to purchase new term life insurance policies in the next period if they had new children. In addition, a large increase in income and a net worth increase were also related to the larger face value of the term life insurance purchased.

2.3. Determinants generally known for cash value life insurance

Cash value life insurance policies (also known as whole life or permanent life policies) are not term-dependent (Brown & Goolsbee, 2002). These policies provide insurance over the lifetime of the policyholder and pay a death benefit upon the death of the insured. Cash value insurance life policies also provide a savings element that is invested separately under the policy and builds up over time, either at a fixed rate or at a variable rate (Garman &

Forgue, 2018). The cash value element can pay a living benefit to the policyholders before the death of the insured, and policyholders can cborrow against the accumulated cash value and pay policy premiums using cash value. Cash value life insurance policies typically charge higher premiums and come with less homogenous options because they come with a greater variety of options and plans (e.g., premium payment, borrowing, rate of return, investment types, fees, and charges) than term life insurance does (Brown & Goolsbee, 2002).

Few studies have empirically examined the effects of household characteristics on the ownership of cash value life insurance. Mulholland, Finke, and Huston (2016) examined the determinants of ownership of cash value life insurance using the SCF dataset, but despite changes in the effects of the determinants across different survey years, they found that the following were more consistently related to the likelihood of the ownership of cash value life insurance: net worth, educational level, whether or not the insured was married, having retirement saving plans (e.g., IRA/Roth, DC, or DB plans), having a child, and financial sophistication. Meanwhile, younger age and ownership of term life insurance were negatively related to the likelihood of owning cash value life insurance.

Liebenberg et al. (2012) found that changes in the statuses of households over the two periods, such as newly married couples' households experiencing relatively high income growth, were more likely to have new whole life insurance policies. Meanwhile, new employment, growth in income, and amount of term life insurance dropped were each positively related to the amount of new cash value life insurance.

Using data from the National Longitudinal Survey of Youth 1979 (NLSY79), Song et al. (2019) examined the changes in life insurance ownership during the two waves of the survey (i.e., 2008 and 2012). The researchers found that the respondents with increases in savings, as well as those who had experienced the recent deaths of family members, were more likely to purchase cash value life insurance policies.

2.4. Risk tolerance, financial knowledge, and perceived health condition

Risk attitude has attracted significant attention from researchers as a determinant of life insurance demands, and it is conceptualized by various terms, including risk tolerance, risk aversion, risk preference, and risk-taking, depending on the definitions presented in the studies. However, no matter which term is used, risk attitude has been found to be closely associated with life insurance ownership (Outreville, 2014). However, the effect of risk attitude has shown mixed results. For example, some researchers have found that consumers with less risk tolerance were likely to buy life insurance in their asset allocation (Chen, Ibbotson, Milevsky, & Zhu, 2006; Finke & Huston, 2003). Others found that people with a higher tendency to take risks were likely to purchase life insurance because they sought greater risk exposure (Burnett & Palmer, 1984; Xiao, 1996). Baek and DeVaney (2005) found that an above-average level of risk-taking was positively associated with term life insurance ownership, but it was not associated with cash value life insurance ownership. Song et al. (2019) also discovered that the impact of risk-taking was not significant in purchasing cash value life insurance.

Financial knowledge has been considered to be an important element of financial decision-making. However, there are limited studies that have investigated the impact of

financial knowledge on life insurance demand. Using the sample of adult residents of a single state, Tennyson (2011) assessed the respondents' insurance knowledge about general insurance principles, as well as the features of specific types of insurance policies. Although the level of insurance knowledge was relatively low among the respondents, it was significantly related to their confidence in insurance decision-making.

In life insurance markets, health status and medical history are the basic factors for pricing on term policies. Thus, some researchers believe that subjectively evaluated health status is one of the most important predictors of determining the ownership of life insurance, as well as the choice of the insurance type. For example, Baek and DeVaney (2005) found that excellence in health status was negatively associated with cash value life insurance ownership; however, they did not find any significant influence of perceived health status on term life insurance ownership decisions.

To fill in the gap in the existing literature, this study included risk tolerance, financial knowledge, and perceived health condition as independent variables of consumers' financial status characteristics in determining the purchase of life insurance.

2.5. Locus of control, financial satisfaction, financial self-efficacy, and life satisfaction

Locus of control has been defined as the concept of a person's perceived controllability about a situation, which can be explained with internal or external control of reinforcement (Rotter, 1966). While the external locus of control denotes that any outcomes took place because of external reasons, such as fate and luck, the internal locus of control indicates that lifetime consequences occurred because of a person's own actions (Cobb-Clark et al., 2016). Because the locus of control drives a person to believe that an outcome occurred based on a certain circumstance (i.e., internal or external factors), locus of control is expected to be associated with financial behavior.

Specifically, locus of control was found to be related to personal finance and financial decision-making (e.g., Cobb-Clark et al., 2016; Danes & Rettig, 1993; Nowicki, Ellis, Iles-Caven, Gregory, & Golding, 2018; Perry & Morris, 2005; Prawitz & Cohart, 2016; Tokunaga, 1993). For example, Cobb-Clark et al. (2016) found that internal locus of control was significantly associated with the tendency toward saving, which can be explained by Perry and Morrison's (2005) argument that a person with a higher level of external locus of control tended to have a lower willingness to manage their financial situation. However, the association between locus of control and the ownership of life insurance was rarely found in the existing literature. Therefore, in this study, the association between external locus of control and the ownership of life insurance was explored further.

Financial satisfaction indicates a perceived assessment of one's own financial situation (Hira & Mugenda, 1998; Xiao, Chen, & Chen, 2014; Xiao & O'Neill, 2018). There is no universal consensus on the measurement of financial satisfaction, which has been previously measured using either single or multiple items. For example, some studies used a single measure, such as: "Overall, thinking of your assets, debts, and savings, how satisfied are you with your current personal financial condition?" (e.g., Robb & Woodyard, 2011; Xiao et al., 2014; Xiao & O'Neill, 2018). Others have used multiple items (e.g., Loibl & Hira, 2005; Montalto, Phillips,

McDaniel, & Baker, 2019), including financial situation and the ability to understand and make sound financial decisions.

As an element of general life satisfaction and well-being, a positive relationship between financial behaviors and financial satisfaction has been found (Robb & Woodyard, 2011; Xiao et al., 2014; Xiao & O'Neill, 2018). In particular, Robb and Woodyard (2011) found that a higher financial satisfaction level was associated with more positive financial practices defined by six items including having an emergency fund, high credit report, no overdraft, credit card payoff, having a retirement account, and effective risk management. However, despite extensive studies having been done about financial satisfaction, the existing literature about the association between financial satisfaction and ownership of life insurance is limited.

Self-efficacy refers to an individual's belief in their ability to perform a specific task successfully (Bandura, 1977, 2006). A person with a strong sense of self-efficacy can execute the cognitive and behavioral efforts required to obtain the desired outcome (Bandura, 1977). Thus, the feeling of self-efficacy has been revealed to be one of the major factors influencing human behavior (Ajzen, 2002; Bandura, 1977). Researchers in personal finance have been aware of the importance of financial self-efficacy to improve financial capability (Amatucci & Crawley, 2011; Lown, 2011). Generally defined as "one's sense of being prepared and able to handle financial responsibility" (Montalto, et al., 2019, p. 15), financial self-efficacy has been found to be significantly and positively associated with responsible financial behaviors, including help-seeking, making investments, and saving (Asebedo, & Seay, 2018; Farrell, Fry, & Risse, 2016; Lim, Heckman, Montalto, & Letkiewicz, 2014). Furthermore, financial self-efficacy is linked to financial well-being and subjective well-being (Robb, 2017). Based on previous findings, it is hypothesized that financial self-efficacy can be related to the likelihood of life insurance ownership, which is a type of financial management. To assess one's level of financial self-efficacy, Lown (2011) developed a financial self-efficacy scale (FSES) that measures an individual's self-efficacy specific to certain financial behaviors. Directly modeled on the general self-efficacy scale (GSES), the financial self-efficacy scale consists of six items that ask questions about respondents' confidence in terms of managing their personal finances. Higher scores on the financial self-efficacy scale indicate higher confidence in personal financial management.

Life satisfaction is a cognitive judgment regarding a person's own quality of life (Diener, Emmons, Larsen, & Griffin, 1985). The assessment of quality of life is dependent upon the comparison of one's perceived life circumstances with self-imposed standards (Pavot & Diener, 2009). Thus, ones' degree of satisfaction with life is highly up to the individual person (Diener, Emmons et al., 1985; Pavot & Diener, 2009). Researchers have found that life satisfaction is closely related to one's financial status proxied by income, wealth, or financial satisfaction. The major argument was whether or not money could buy happiness. Although researchers have pointed out that the effects of financial factors on life satisfaction were only minimal, studies tended to confirm that there was a positive association between financial status and life satisfaction (Cheung & Lucas, 2015; Diener & Biswas-Diener, 2002; Diener & Diener, 2009; Heo, Lee, & Park, 2020; Johnson & Krueger, 2006; Park, Lee, & Heo, 2020). In other words, individuals who earned a higher income, who had more wealth, and who reported both higher levels of financial satisfaction and lower levels of financial stress were more likely to exhibit higher levels of life satisfaction.

However, the association between financial status and life satisfaction can also be inversive. By reviewing a variety of panel studies, Diener and Biswas-Diener (2002) concluded that the relationship between subjective well-being and financial status is bidirectional, indicating that happy people could be more proactive in managing their finances. Based on this assumption, it is reasonable to think that the subjective perception of life can influence one's decision-making regarding life insurance ownership. If a person is highly satisfied with one's own life, the person would be more likely to have life insurance, either as a means of transferring financial resources or as a savings vehicle. However, if a person is unsatisfied with her/his life, the person might not look beyond the present. Nevertheless, there is a lack of existing literature that examines how an individual's life satisfaction determines his/her decision to buy life insurance.

3. Data and methodology

3.1. Data and analyses

This study conducted an online consumer survey of 1,000 respondents across the United States, collected with a random sampling method in September 2019. The questionnaire measured both individual- and household-level characteristics regarding various financial decisions and circumstances, including life insurance type, net balance status, emergency fund ownership, financial risk tolerance, two types of financial knowledge (subjective and objective), perceived health condition, gender, income, working status, number of children in a household, education, age, race, and relationship status. After excluding respondents who did not complete the questions used by this study, the final sample consisted of 997 respondents. The survey was funded by the National Institute of Food and Agriculture (NIFA) as the Hatch Project. The details of the psychographics of the respondents are shown in the next section.

In this study, a four subsample analysis was conducted based on the type of life insurance ownership. Specifically, out of the total sample ($N = 997$), 521 respondents answered that they did not have any term life insurance or cash value life insurance. Among the 476 respondents who had either term or cash value life insurance, 227 respondents reported that they only had term life insurance, whereas 89 respondents reported that they only had cash value life insurance. Lastly, 160 respondents answered that they had both term life insurance and cash value life insurance.

To answer the research question, this study utilized four logistic regression analyses to investigate the marginal effect of each influential factor on the demand for life insurance by type. The dependent variables were binary indicators of whether or not the respondent had a life insurance policy: (a) not having any term life insurance or cash value life insurance; (b) having term life insurance policy only; (c) having cash value life insurance policy only; and (d) having both term life insurance policy and cash value life insurance policy. Thus, the marginal effects of the influential factors were checked against the odds ratio, which was calculated by the probability of "having life insurance" versus "not having life insurance," so that the odds ratio of each factor in the model denotes the tendency of having life insurance influenced by the factor.

To ensure the robustness of the estimation, a seemingly unrelated estimation method was utilized when executing four logistic regression models. Specifically, seemingly unrelated estimation executed multiple models promptly, considering the covariances and distribution simultaneously (Rogers, 1993; White, 1982). By using Stata 15.0 with a reliable code (i.e., suest) for seemingly unrelated estimation (Weesie, 1999), four logistic models were simultaneously executed for the robustness of the model results. In addition, the significance criterion was set as alpha = 10% ($p < .10$) because the sample size of each subsample was relatively small, such as 227, 89, and 160. When the sample size is small, there is a tendency that type II error increases (Banerjee, Chitnis, Jadhiv, Bhawalkar, & Chaudhury, 2009). When alpha is strict to 5% ($p < .05$), a small sample size is more likely to produce insignificant results, even though they are significant. Therefore, in this study, the alpha level was set at 10% ($p < .10$).

3.2. Variables

We used four dependent variables: (a) not having any term life insurance or cash value life insurance; (b) having term life insurance policy only; (c) having cash value life insurance policy only; and (d) having both term life insurance policy and cash value life insurance policy. The dependent variable was measured as a dichotomous variable (yes or no) based on the answer to the question that follows this brief explanation: "The two major types of life insurance are term and cash value policies. Term policies pay a benefit if the insured person dies, but otherwise, they have no value. They are often provided through an employer or union, but they may also be bought by individuals. Cash value policies also pay death benefits, but differ in that they build up value as premiums are paid. Are any of your (or your spouse/partner's) policies term insurance?" The other dependent variable was measured as a dichotomous variable (yes or no) by the answer to the following question: "Do you (or your spouse/partner) have any policies that build up cash value or that you can borrow on? These are sometimes called 'whole life,' 'straight life,' or 'universal life' policies." Finally, the answers to all three questions were coded as binary variables: "yes" was coded as 1, and 0 otherwise.

The key independent variables in this study include financial status characteristics, psychological characteristics, and demographic characteristics. As the financial status characteristics, a net balance of respondents' emergency funds, financial risk tolerance, and subjective financial knowledge were used. The net balance was measured by a categorical variable: zero net balance, negative net balance, and positive net balance. The ownership of an emergency fund was measured as a binary question, and these two financial status factors were coded as binary variables (yes = 1; no = 0). For financial risk tolerance, Grable and Lytton's 13 items were used (Grable & Lytton, 1999), which were considered to be reliable and valid measurements for financial risk tolerance (Grable, Lyons, & Heo, 2019). Financial risk tolerance ranged from 13 points to 40 points, where the lowest number meant the lowest level of financial risk tolerance. Subjective financial knowledge was measured with a question regarding the self-assessment of one's own level of financial knowledge, ranging from 1 point (*lowest level*) to 7 points (*highest level*).

The psychological characteristics include four variables: external locus of control, financial satisfaction, financial self-efficacy, and life satisfaction. External locus of control was

measured by using eight items (Perry & Morrison, 2005) that the questionnaires asked to answer with a 5-point scale (1 = *almost never*, 5 = *almost always*), so that the maximum number of summing the eight items (i.e., 40) denotes the highest level of external locus of control. Otherwise, the minimum number of summing the eight items (i.e., 8) indicates the lowest level of external locus of control. Financial satisfaction was measured with seven items from Loibl & Hira (2005), in which a 5-point scale was utilized (1 = *very dissatisfied*, 5 = *very satisfied*). The maximum number of summing these seven items (i.e., 35) denotes the highest level of financial satisfaction, while the minimum number of summing seven items (i.e., 7) indicates the lowest level of financial satisfaction. In terms of financial self-efficacy, six items were utilized from Lown (2011), where a 5-point scale was utilized (1 = *strongly disagree*, 5 = *strongly agree*). The maximum number of summing these six items (i.e., 30) denotes the highest level of financial self-efficacy, while the minimum number of summing six items (i.e., 6) indicates the lowest level of financial self-efficacy. Lastly, life satisfaction utilized five items of satisfaction with a scale derived from Diener, Emmons, Larsen, & Griffin (1985). For life satisfaction, a 7-point scale was utilized (1 = *strongly disagree*, 7 = *strongly agree*). Therefore, the maximum number of summing these five items (i.e., 35) denotes the highest level of life satisfaction, while the minimum number of summing five items (i.e., 5) indicates the lowest level of life satisfaction.

Demographic characteristics consist of both respondent-level and household-level variables. For the respondent-level variables, four variables were measured as binary variables: gender (male = 0, female = 1), working status (not working = 0, working = 1), race/ethnicity (nonwhite = 0, white = 0), and relationship status (not married = 0, married/coupled = 1). The education level of the respondent was measured with a categorical variable: high school graduate or lower, associate degree, bachelor's degree, and graduate-level or higher. The lowest education level (i.e., high school graduate or lower) is used as a reference group in an analytic procedure. The age of the respondent was measured by number of years. Household-level variables include income and the number of children in the household. Income was measured between eight different categories: lower than $15,000, $15,000-24,999, $25,000-34,999, $35,000-49,999, $50,000-74,999, $75,000-99,999, $100,000-149,999, and greater than $150,000. The lowest income level (i.e., lower than $15,000) was used as a reference group. The number of children in the household was measured as a continuous variable. Finally, perceived health condition was the self-assessment of one's perceived health condition, and this was measured as a binary variable (not good = 0, good = 1).

4. Findings

4.1. Descriptive information of samples

Tables 1 and 2 displayed the descriptive statistics of both the total sample and the subsamples. For example, among the total sample result (*N* = 997), approximately 40% of the respondents had zero net balances or negative net balances, and around 45% of respondents had emergency funds. The income levels of approximately half of the respondents fell

Table 1   Descriptive statistics of samples: Categorical factors

	Total sample (N = 997)	No insurance (n = 521)	Term only (n = 227)	Cash-value only (n = 89)	Both insurance (n = 160)
	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)
Financial status characteristics					
Negative NB	263 (26.38)	173 (33.21)	56 (24.67)	9 (10.11)	25 (15.63)
Emer. funds (yes)	453 (45.44)	177 (33.97)	105 (46.26)	61 (68.54)	110 (68.75)
Demographic characteristics					
Gender (= female)	776 (77.83)	423 (81.19)	186 (81.94)	53 (59.55)	114 (71.25)
Income					
Lower than $15k	113 (11.33)	89 (17.08)	11 (4.85)	7 (7.87)	6 (3.75)
$15k - $25k	126 (12.64)	97 (18.62)	8 (3.52)	10 (11.24)	11 (6.88)
$25k - $35k	144 (14.44)	87 (16.70)	29 (12.78)	12 (13.48)	16 (10.00)
$35k - $50k	157 (15.75)	87 (16.70)	36 (15.86)	16 (17.98)	18 (11.25)
$50k - $75k	182 (18.25)	88 (16.89)	50 (22.03)	18 (20.22)	26 (16.25)
$75k - $100k	128 (12.84)	39 (7.49)	43 (18.94)	11 (12.36)	35 (21.88)
$100k - $150k	105 (10.53)	27 (5.18)	38 (16.74)	13 (14.61)	27 (16.88)
Over $150k	42 (4.21)	7 (1.34)	12 (5.29)	2 (2.25)	21 (13.13)
Work-status (yes)	657 (65.90)	315 (60.46)	167 (7357)	44 (49.44)	131 (81.88)
Education					
High school/lower	235 (23.57)	154 (29.56)	37 (16.30)	15 (16.85)	29 (18.13)
Associate degree	303 (30.39)	167 (32.05)	72 (31.72)	29 (32.58)	35 (21.88)
Bachelor degree	321 (32.20)	148 (28.41)	90 (39.65)	26 (29.21)	57 (35.63)
Graduate/higher	138 (13.84)	52 (9.98)	28 (12.33)	19 (21.35)	39 (24.38)
Race/ethnicity					
White	809 (81.14)	414 (79.46)	193 (85.02)	78 (87.64)	124 (77.50)
Relationship status					
Married/coupled	544 (54.46)	227 (43.57)	153 (67.40)	54 (60.67)	111 (69.38)

Note: NB = net balance; Emer. funds = emergency funds.

between $35,000 and $99,999, which means that the sample was not highly skewed to high- or low-income respondents, the majority of which were working white females who had completed at least an associate degree. Half of the respondents were either married or living with their partners. The average number of children and the average age of the respondents were less than one and 47 years old, respectively. For the physio-psychological characteristics, the average level of financial risk tolerance, subjective financial knowledge, and objective financial knowledge were measured as 20.67, 3.71, and 1.96, respectively. The levels of financial knowledge were both slightly higher than the median value of each, measuring for example as 3.5 and 1.5, respectively. The majority of respondents responded that they were in good health, and this is a limitation of the study caused by random sampling through an online survey. In terms of the psychological factors, the average value of external locus of control was 24.87, with a standard deviation of 4.91; the average value of financial satisfaction was 21.16, with a standard deviation of 7.34; the average value of financial self-efficacy was 15.15, with a standard deviation of 5.04; and the average value of life satisfaction was 20.92, with a standard deviation of 8.35.

Table 2 Descriptive statistics of samples: Continuous factors

	Total sample (N = 997)	No insurance (n = 521)	Term only (n = 227)	Cash-value only (n = 89)	Both insurance (n = 160)
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Financial status characteristics					
FRT	20.67 (4.26)	20.22 (4.09)	20.26 (3.69)	20.54 (4.20)	22.80 (4.92)
Sub. FK.	3.71 (1.58)	3.39 (1.50)	3.68 (1.50)	3.88 (1.42)	4.71 (1.61)
Demographic characteristics					
Health status	0.72 (0.45)	0.65 (0.48)	0.74 (0.44)	0.87 (0.34)	0.86 (0.35)
No. children	0.71 (1.15)	0.63 (1.17)	0.78 (1.10)	0.38 (0.89)	1.04 (1.20)
Age	47.02 (15.90)	45.55 (16.08)	47.56 (15.19)	56.06 (13.84)	44.36 (14.46)
Psychological characteristics					
LOC	24.87 (4.91)	24.85 (4.57)	24.20 (3.81)	23.73 (4.33)	26.56 (6.89)
F-satisfaction	21.16 (7.34)	19.62 (7.10)	21.04 (6.75)	24.37 (6.89)	24.59 (7.50)
F-self	15.15 (5.04)	15.59 (5.00)	14.90 (4.82)	12.70 (4.55)	15.44 (5.36)
L-satisfaction	20.92 (8.35)	18.90 (8.28)	22.08 (7.53)	22.46 (7.53)	25.00 (8.15)

Note: FRT = financial risk tolerance; Sub. FK. = subjective financial knowledge; char. = characteristics; LOC = locus of control; F-satisfaction = financial satisfaction; F-self = financial self-efficacy; L-satisfaction = life satisfaction.

4.2. Results from logistic estimation and seemingly unrelated estimation

Table 3 displays the results from the four logistic regression analyses. Financial status characteristics were partially associated with having life insurance. The negative net balance was positively associated with having no insurance (coefficient = 0.31, $p < .10$), meaning that those with negative net balances were less likely to have any of either term life insurance and cash value life insurance. However, the ownership of emergency funds works in the opposite direction, as those with emergency funds tended to have no term life insurance or cash value life insurance (coefficient = -0.47, $p < .01$). They were also more likely to have both term life insurance and cash value life insurance than those without emergency funds (coefficient = 0.72, $p < .01$). Subjective financial knowledge showed a similar pattern to the emergency fund variable. Those who had a higher level of subjective financial knowledge were less likely to have no life insurance (coefficient = -0.13, $p < .05$), and were also more likely to have both types of insurance (coefficient = 0.26, $p < .01$). In terms of financial risk tolerance, those who had a higher level of financial risk tolerance tended to be less likely to have no life insurance (coefficient = -0.03, $p < .01$) and ownership of term life insurance (coefficient = -0.04, $p < .10$).

The psychological characteristics were also partially associated with the ownership of life insurance. First, locus of control showed a negative association with no-ownership of any term life insurance or cash value life insurance (coefficient = -0.03, $p < .10$), but a positive association with the ownership of both term life insurance and cash value life insurance (coefficient = 0.05, $p < .05$). This means that a person with a higher level of external locus

Table 3 Results from logistic regressions by types of life insurance ownership with seemingly unrelated estimation method for robustness

	Model 1	Model 2	Model 3	Model 4
	No insurance	Term life only	Cash-value only	Both insurances
	Coefficient (robust *SE*)	Coefficient (robust *SE*)	Coefficient (robust *SE*)	Coefficient (robust *SE*)
FS characteristics				
Negative NB	$0.31^{\dagger}$ (0.18)	-0.11 (0.21)	-0.54 (0.41)	-0.37 (0.27)
Emer. funds (yes = 1)	-0.47^{**} (0.18)	-0.16 (0.20)	0.51 (0.35)	0.72^{**} (0.23)
FRT	0.02 (0.02)	$-0.04^{\dagger}$ (0.02)	-0.04 (0.03)	0.02 (0.03)
Sub. FK	-0.13^{*} (0.06)	0.01 (0.07)	-0.05 (0.09)	0.26^{**} (0.09)
Psychological characteristics				
LOC	$-0.03^{\dagger}$ (0.02)	-0.03 (0.02)	0.03 (0.03)	0.05^{*} (0.02)
F-satisfaction	-0.00 (0.02)	-0.03^{*} (0.02)	0.01 (0.03)	0.02 (0.02)
F-self	$-0.04^{\dagger}$ (0.02)	-0.00 (0.02)	$-0.05^{\dagger}$ (0.03)	0.08^{**} (0.03)
L-satisfaction	-0.03^{*} (0.02)	0.03^{*} (0.01)	-0.03 (0.02)	0.02 (0.02)
Demographic characteristics				
Gender (female = 1)	0.14 (0.19)	0.22 (0.22)	-0.90^{**} (0.28)	0.22 (0.23)
Income				
$15k - $25k	-0.07 (0.33)	-0.58 (0.49)	0.06 (0.59)	0.91 (0.55)
$25k - $35k	-0.74^{*} (0.30)	$0.70^{\dagger}$ (0.39)	0.14 (0.55)	$0.95^{\dagger}$ (0.51)
$35k - $50k	-0.88^{**} (0.30)	0.88^{*} (0.39)	0.10 (0.53)	$0.99^{\dagger}$ (0.52)
$50k - $75k	-0.97^{**} (0.30)	1.04^{**} (0.39)	-0.03 (0.56)	1.06^{*} (0.50)
$75k - $100k	-1.65^{***} (0.33)	1.38^{**} (0.41)	-0.52 (0.62)	1.84^{***} (0.51)
$100k - $150k	-1.64^{***} (0.35)	1.73^{***} (0.42)	-0.27 (0.61)	1.18^{*} (0.54)
Over $150k	-2.05^{***} (0.50)	1.42^{**} (0.52)	-1.41 (0.92)	2.13^{***} (0.58)
Working (work = 1)	-0.24 (0.18)	0.31 (0.21)	0.03 (0.30)	0.21 (0.25)
Health status	-0.22 (0.18)	-0.27 (0.21)	0.95^{**} (0.33)	0.43 (0.27)
Number of children	-0.11 (0.07)	-0.04 (0.07)	-0.10 (0.17)	0.24^{**} (0.08)
Education level				
Associate degree	-0.30 (0.20)	0.27 (0.24)	0.48 (0.36)	-0.09 (0.30)
Bachelor degree	-0.29 (0.21)	0.32 (0.24)	0.18 (0.39)	-0.04 (0.31)
Graduate/higher	-0.14 (0.27)	-0.41 (0.32)	0.88^{*} (0.42)	0.19 (0.37)
Age	-0.02^{**} (0.01)	0.00 (0.01)	0.04^{***} (0.01)	-0.00 (0.01)
Race (White = 1)	0.01 (0.19)	0.14 (0.23)	0.13 (0.34)	-0.27 (0.26)
Married/coupled	$-0.31^{\dagger}$ (0.17)	0.26 (0.19)	0.40 (0.30)	0.09 (0.23)
Constant	4.57^{***} (0.83)	-1.06 (0.86)	-4.03^{**} (1.30)	-8.63^{***} (1.14)
χ^2	226.80^{***}	95.41^{***}	104.30^{***}	185.49^{***}
Pseudo R^2	0.16	0.09	0.17	0.21

Note: In Model 1, the dependent variable was ownership of neither term or cash-value life insurance; in Model 2, the dependent variable was ownership of only term life insurance; in Model 3, the dependent variable was ownership of only cash-value life insurance; and in Model 4, the dependent variable was ownership of both term life and cash-value life insurances. Reference for net balance is equal to or greater than zero net balance; reference for gender is male; reference for income category is lower than $15,000; reference for working status is not working; reference for education level was lower than high school; reference for the race is if non-White; and reference for marital status is single. FS = financial status; NB = net balance; Emer. funds = emergency funds; FRT = financial risk tolerance; Sub. FK. = subjective financial knowledge; char. = characteristics; LOC = locus of control; F-satisfaction = financial satisfaction; F-self = financial self-efficacy; and L-satisfaction = life satisfaction.

$^{\dagger}p < .10$, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

of control (e.g., blaming external reasons) tended to have both term life insurance and cash value life insurance. Similarly, financial self-efficacy showed a negative association with no-ownership of any term life insurance or cash value life insurance (coefficient = −0.04, $p < .10$), but a positive association with the ownership of both term life insurance and cash value life insurance (coefficient = 0.08, $p < .01$), which implied that a person with a higher level of financial self-efficacy was more likely to have both term life insurance and cash value life insurance. However, higher-level financial self-efficacy lowered the likelihood of ownership of only cash value life insurance (coefficient = −0.05, $p < .10$). Third, financial satisfaction was associated with only the ownership of term life insurance negatively (coefficient = −0.03 $p < .05$), which means that those who had a higher level of financial satisfaction would not purchase term life insurance. Finally, life satisfaction showed a negatively significant association with no-ownership of both term life insurance and cash value life insurance (coefficient = −0.03, $p < .05$), which implied that those who were more satisfied with their life were more likely to have either kind of life insurance. The likelihood of having ownership of only term life insurance increased by level of life satisfaction (coefficient = 0.03, $p < .05$).

Demographic characteristics also demonstrated different effects of factors on ownership by type of life insurance. Some variables were model-specific. Females showed a negatively significant association only with cash value life insurance (coefficient = −0.90, $p < .01$), while the highest level of education (i.e., graduate or higher; coefficient = 0.88, $p < .05$) and good health status (coefficient = 0.95, $p < .01$) were positively associated with ownership of cash-value life insurance. Working status (i.e., currently working), lower levels of education (i.e., associate degree and bachelor's degree), and race (i.e., Whites) did not show any significant relevance to the ownership of life insurance. The number of children in a family showed a positive association with the ownership of both types of life insurance (coefficient = 0.24, $p < .01$), and the married or coupled respondents were less likely to have no life insurance at all (coefficient = −0.31, $p < .10$). Older respondents were less likely to have no life insurance and more likely to have both term and cash value life insurance.

There was an interesting finding stemming from the income level variable. The higher the income level, the greater the probability of having life insurance (less likelihood of no ownership, term life, both term life insurance, and cash value life insurance), except for the ownership of cash value life insurance.

5. Discussion and implication

This study examined factors related to the ownership of life insurance by type (none, term, cash value, and both term and cash value life insurance) by focusing on the role of the financial status characteristics, psychological characteristics, and demographic characteristics. This study found that some financial status and psychological characteristics show similar and opposite patterns across models. The presence of emergency funds, locus of control, subjective knowledge, and financial self-efficacy decreased the likelihood of non-ownership of life insurance and increased the likelihood of owning both types of life insurance. Among those characteristics, the ownership of a specific type of life insurance was not significant.

Those who were more sensitive to external circumstances in terms of determining life events and were prepared for financial emergency tended to have one or both forms of life insurance (=lower likelihood of non-ownership of life insurance and a higher likelihood of ownership of both forms of life insurance). These respondents were also identified as those who perceived their financial knowledge levels to be higher and who feel more confident about themselves in terms of achieving their financial goals. All of these financial and psychological characteristics show that they would value the fundamental core of life insurance purchases more than other additional characteristics of life insurance (i.e., they would like to transfer the risk of loss of income) based on their perceptions and knowledge about the need for life insurance. Thus, it appears that they would fully understand the importance of life insurance purchases. In particular, however, those with a higher level of financial self-efficacy had a lower likelihood of cash value life insurance ownership, reflecting the fact that they would need financial advice about a further decision regarding life insurance (e.g., type of life insurance) beyond the basic purpose.

The traits of financial risk tolerance and financial satisfaction both reduced the likelihood of ownership of term life insurance, but increased that of ownership of both insurance policies, while life satisfaction increased the ownership of term life insurance and reduced non-ownership of life insurance. In other words, those who take greater financial risk and are more satisfied financially recognize the need for life insurance (i.e., they are less likely to not own life insurance), but these characteristics about financial attitude and evaluation undervalued term life insurance. This result was the opposite of that of life satisfaction. Those who were satisfied with their lives but not necessarily satisfied with its financial aspects would prefer ownership of term life insurance. Although financial satisfaction has been known to be an element of life satisfaction (e.g., Robb & Woodyard, 2011; Xiao et al., 2014), its effects on financial decisions, such as term life insurance decisions, were not necessarily in the same direction. This implies the importance of taking various aspects of psychological characteristics into consideration when investigating the determinants of life insurance ownership. Our findings warn about the generalization of the effect of seemingly related characteristics on financial decisions and suggest that financial practitioners consider each of them closely when working with clients.

Other financial status characteristics, such as negative net balances and income, were also significant in some models. Negative net balances reduced the likelihood of ownership of life insurance, while income levels were generally positively related to the ownership of life insurance; more financially stable respondents tended to have either term life or both term and cash value life insurance. As the income level went up, the likelihood of having a term life insurance policy generally increased, but this pattern was not significant in the pattern of cash value life insurance ownership. The results may suggest that term life insurance is considered to be a substitute for income.

While the ownership of term value life insurance was better explained by financial and psychological characteristics, more demographic characteristics factored into the ownership of cash value life insurance, which provides an additional investment vehicle and tax-wise asset accumulation. Cash value life insurance was in greater demand by those in good health condition (thus, having relatively less demand for a savings chunk for sudden medical costs), or older respondents (who might have limited eligibility for a term, or might be more

familiar with investment vehicles). However, females were less likely to have cash value life insurance, implying that the potential gender difference in financial decisions, and financial professionals can help them correct this aversion toward cash value life insurance if it is not beneficial to them. Married or coupled respondents were less likely to have no life insurance at all, while those with more children tended to have both types of life insurance, all of which identifies who might possibly better perceive the significance of life insurance because of the presence of financial dependents. However, work status, lower levels of education, and race were not significant in all models.

Although researchers have identified the various factors that contribute to the likelihood of life insurance ownership, few studies have attempted to approach the subgroup analyses. Our findings confirmed the importance of conducting separate analyses by policy type (i.e., no ownership, only term life insurance, only cash value life insurance, and both term and cash value life insurance), and deepened the discussion about the factors related to life insurance ownership.

Our findings are in line with the different characteristics and purposes of term and cash value life insurance. Cash value life insurance was likely to be used to complement other wealth accumulation vehicles rather than as a simple substitute for lost income from premature death, whereas term life insurance was still seen as pure protection for the potential loss of future income. The results are consistent with previous work (e.g., Heo et al., 2013), which suggests that the purpose and characteristics of cash value life insurance should not be treated in the same way as those of term life insurance. Thus, the findings regarding the differences in consumer demand between cash value life insurance and term life insurance in terms of the influential characteristics and underlying purpose of the life insurance purchase suggest a need for a more careful approach to the study of life insurance ownership and the incorporation of psychological factors in the analysis. The findings suggest that consumers can be better served when financial practitioners and researchers more carefully identify and accommodate consumers' needs for different types of life insurance. Various idiosyncratic characteristics of consumers, including financial, psychological, and demographic factors, should be considered along with the functional purposes of the life insurance being purchased.

Finally, there are some study limitations of the study to mention here. First, this study used an online consumer survey based on random sampling methods, as an online survey has been shown to better reach a broader population in different geographic locations. However, our sample distribution was somewhat skewed in terms of some demographic variables, such as gender, race/ethnicity, and income. Therefore, the findings of the research need to be generalized with caution, and future studies can extend the discussion by examining a more diverse population. The survey used for the study also does not include questions about the amount of the life insurance policies or how the insurance was purchased (e.g., through an employer, such as group life insurance, or individually), which can possibly be related to the ownership of life insurance and might be helpful to financial professionals when identifying the needs of their clients before advising them in their decision of what type of life insurance policy to pursue. Thus, future studies are desired to examine additional characteristics of life insurance purchasing with different data.

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