A LEARNED HELPLESSNESS MODEL OF INVESTMENT INTENTIONS.
IMPLICATIONS FOR FINANCIAL PREPARATION FOR OLD AGE

BY

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A Thesis Submitted to
City University of Hong Kong
in Partial Fulfillment of the Requirements for
the Postgraduate Diploma in Psychology
in the Department of Applied Social Studies

ABSTRACT

Objectives: This thesis investigated the applicability of the learned helplessness model to low-risk investment intention and its generality to high-risk, saving and information seeking intentions. Methods: This research used questionnaires to collect information about history of uncontrollability (past overall return and loss ratio), investment, saving and information seeking intentions, and measure attributional style by Attributional Style Questionnaire (ASQ). The 167 participants were all Hong Kong Chinese, aged 25-49 and had investment experiences on low-risk investments (bonds and large-company stocks) in the past two years. Results: The hierarchical regression analysis (p< .05) supported that learned helplessness decreased intended magnitude (in term of percentage of disposable income) but not likelihood in low-risk investments. The learned helplessness in low-risk investments was not generalized to high-risk, saving and information seeking intentions except information seeking through information intermediary (i.e. agents / brokers). Conclusions: This thesis supports the applicability of learned helplessness to low-risk investment intention. The generality of the learned helplessness is limited. This thesis has implications for financial preparation for old age.

Keywords: Learned helplessness; Investment intention; Information seeking; Financial preparation.
ACKNOWLEDGEMENTS

The part-time postgraduate study and thesis have been an odyssey. Though the odyssey is hard, it is joyful and rewarding. I have learnt a lot in the past two years with generous help from others. I would like to take this chance to thank them.

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City University of Hong Kong  
Department of Applied Social Studies  

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1. INTRODUCTION

Financial preparation for old age has become an important topic because populations worldwide have been ageing fast and financial preparation for old age is crucial for positive ageing. While different sectors (i.e., governments, financial institutions, academia, etc.) have put resources to investigate how to promote financial preparation for old age, there have been few studies investigating if learned helplessness negatively influences investment intentions. As low-risk investments, including bonds and large-company stocks, are the preferred long-term investment option for public, this research focused on the learned helplessness and investment intentions in low-risk investments. However, it also tested if the learned helplessness in low-risk investments could be generalized to high-risk, saving and information seeking intentions.

1.1. Literature Review

1.1.1. Positive Ageing & Financial Preparation

The world has been undergoing an unprecedented demographic revolution. World Health Organization [WHO] (2002) estimated that there will be two billion people over the age of 60 by 2050, which will be more than double of the present figure. In North America and Europe, the life expectancy has increased from 47 in
1900 to 77 in 2000. It has been expected that the average life expectancy will reach 90 in 2050 (HSBC, 2005). The population ageing has been both a triumph and a serious concern to all human beings. It has been a triumph because human beings have lived longer. It has been a serious concern as there have been a number of challenges, including burden of disease, risk of disability, need for care, economic support, etc. (WHO, 2002) that impede positive ageing. If these challenges will not be adequately handled, the population ageing may not be fully a triumph, but a pain to the aged population as well as the whole society.

According to WHO (2002), there are three pillars for positive ageing. They are health, participation and security. The security pillar includes social, financial and physical security. This thesis studied a learned helplessness model on investment intentions that may have implications for financial preparation for old age.

According to United Nations (2001), the old-age dependency ratio\(^1\) will greatly increase from 2002 to 2025, especially in the developed countries (see Table 1).

Table 1

| Old-age dependency ratio for selected countries / regions (WHO, 2002) |
|-----------------------|------------------|
|                       | Year             |
|                       | 2002  | 2025  |
| Japan                 | 0.39  | 0.66  |
| North America         | 0.26  | 0.44  |
| European Union        | 0.36  | 0.56  |

\(^1\) The old-age dependency ratio is the total population age 60 and over divided by the population age 15 to 60. It is primarily used by economists and actuaries who forecast the financial implications of pension policies. (WHO, 2002)
A dependency ratio of more than 0.5 means that less than two people from working population have to support one aged person. Such a high dependency ratio has called for a need to do financial preparation when people are still young and productive for themselves rather than relying on future young population. Many governments have started mandatory retirement savings when people are still at work in the past two decades. The mandatory retirement savings have been a good start, but there has also been a serious doubt over the adequacy of these savings to support positive ageing after retirement. HSBC (2008) found that only a small proportion of people will be prepared for retirement and be completely protected. Voluntary financial preparation would be necessary. A good voluntary financial preparation needs early start and appropriate asset allocation to maximize returns in long run.

1.1.2. Early Preparation and Asset Allocation

According to Brown & Reilly’s Investor Life Cycle Model (2000), individuals no longer have income from work when they retire, they must accumulate wealth when they are still in work for old age. It is important to start preparation in early years of working and keep it until people retire. Early preparation allows an individual save more principals and the time value of money allows the principals grow with time if they are properly invested.
Low-risk investments (i.e., bonds and large-company stocks) are most preferred for long-term investments. Howell’s study (as cited in Brown & Reilly, 2000) showed that experts in long-term investments, including pension funds and insurance companies, invested the majority of their portfolios in low-risk investments. On one hand, as reflected from historical returns, low-risk investments increased real value over time after taxes and inflation whereas bank saving and cash could not (Ibbotson Associates’ study, as cited in Brown & Reilly, 2000). On the other hand, their risks were relatively low and acceptable to most people when compared with high-risk investments including small-company stocks (Ibbotson & Sinquefield, 1989), derivatives, leveraged investment (e.g., margin) and speculation on short-term price movement (Jarrow & Turnbull, 2000). Balancing the risk and return, a good financial preparation for old age should allocate the majority of asset in low-risk investments.

Though low-risk investments are relatively safe when compared to high-risk investments, they have volatility also (Brown & Reilly, 2000). Prices fluctuate and are beyond expectations and control of investors. The investment results are sometimes non-contingent on their actions no matter how conservative they are and how well they prepare. They may lose all or a significant portion of their wealth. Bankruptcy of giant companies like Lehman Brothers and Enron, default of quality bonds and significant investment loss are not uncommon. The non-contingency between actions
and consequences may result in learned helplessness.

1.1.3. The Theory of Learned Helplessness and its Potential Applicability to Investment Intentions

Peterson, Maier, and Seligman (1993) introduced the theory of learned helplessness. The theory has three components: “history of uncontrollability”, “attributional style”, and “passivity”. The theory states that when people and animals are exposed to history of uncontrollability and if they are negative in explaining uncontrollable situations, they behave passively to new situations even the situations are controllable. Each of the components and the potential applicability of the theory to investment intentions were discussed below.

History of uncontrollability.

It refers to “objective relationship” between the person’s action and the consequences through direct experience or observation. In the learned helplessness model, consequences are not contingent on the person’s actions. In low-risk investments, investment returns (the consequences) may be non-contingent to investment actions.

In investment setting, history of uncontrollability could result from both poor overall return and/or high loss ratio in past. As this thesis was one of the first applying
the learned helplessness model to investment behaviors, there had been no previous literature discussing whether overall return or loss ratio was critical to bring learned helplessness effect. Thus, for exploratory purpose, both were included to measure the history of uncontrollability. As a result, there were two IVs (overall return (IV1) and loss ratio (IV2) in low-risk investments) measuring history of uncontrollability.

**Attributional style.**

It refers to a particular attributional style that the person generally explains uncontrollability. He may explain it in a positive way that uncontrollability results from an external, unstable and specific reason like today’s luck or in a negative way from an internal, stable and universal reason like his stupidity. The attribution affects the person’s expectation about the future and the expectation affects behaviors. For example, if the person negatively attributes that his stupidity leads to uncontrollability, “he will expect to fail again when he finds that he is in situations requiring intelligence” (Peterson, Maier, Seligman, 1993). His negative attribution and subsequent expectation leads to passivity.

The attributional style (IV3) involves three dimensions. First, it is internal (“it is because of me”) versus external (“it is because of someone else”). Second, it is stable (“it is going to last forever”) versus unstable (“it is temporary”). Third, it is
global ("it is going to affect everything that happens to me") versus specific ("it is only going to affect this"). The attributional style of an individual is consistent for different events (Peterson, Buchanan, and Seligman, 1995). A consistent way to attribute bad event as internal, stable and global is a negative explanatory style. As attributional style is consistent for different events, a negative attributional style makes investors attribute history of uncontrollability in investment as negative. The negative attribution leads to expectation that the uncontrollability is internal, stable and global and investors become passive in future situations.

**Passivity.**

It refers to “passivity versus activity in a situation different from the one in which uncontrollability was first encountered” (Peterson, Maier, and Seligman, 1993). The person fails to initiate any actions to control the new situations which are actually controllable. In animal experiments, most studies measured frequency of responses as an indicator of passivity.

In investment setting, passivity could best be measured by investment intentions as they best predict behaviors according to the theory of planned behavior (Ajzen, 1991). Referenced from 2007 DNB Household Survey (CentERdata, 2008), the investment behavioral intentions can be measured through the intended percentage of
income to be set aside for investment (intended percentage) and the likelihood to invest in future one year (investment likelihood). Passivity in investment intentions should be related to low intended percentage (DV1) and less investment likelihood (DV2).

The learned helplessness model has led to numerous studies with positive findings. Some of the studies have been in the areas of depression, academic achievement, etc. (Peterson et al., 1993). However, little research has been done on its potential application to investment intentions.² This research bridged the gap and tested the applicability of the model to investment intentions.

1.2. The Learned Helplessness in Low-risk investments and Main Hypotheses

The research used hierarchical regression analysis. It predicted that the learned helplessness model could be applied to low-risk investment intentions. If it would be applicable, the interaction between history of uncontrollability (IV1, IV2) and negative explanatory style (IV3) would predict a high passivity in investment intentions (DV1, DV2).

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² The researcher put keywords of learned helplessness and investment or finance in PsycINFO. There was only one relevant result matching the search criteria.
Main Hypotheses (H1 & H2)

In the hierarchical regression, the interaction of history of uncontrollability (poor overall return (IV1) and high loss ratio (IV2)) in low-risk investments and a negative explanatory style (IV3) would predict a high passivity in future low-risk investment intentions through H1: low intended percentage (DV1) and H2: less investment likelihood (DV2).

1.3 Generality of the Learned Helplessness and Peripheral Hypotheses

Cole and Coyne (1977) found that learned helplessness induced in one situation did not generalize to all other possible situations. This thesis also tested if the learned helplessness acquired from low-risk investments would be generalized to high-risk investment, saving and information seeking intentions. If it could be generalized, the interaction between history of uncontrollability (IV1, IV2) and negative explanatory style (IV3) would predict a high passivity in those intentions (DV3, DV4, DV5, DV6, DV7, DV8, DV9) in hierarchical regression.

1.3.1. High-risk Investments

High-risk investments include small-company stocks, derivatives, leveraged investment (e.g., margin) and speculation on short-term price movement. They have
more volatility and potentially higher returns than low-risk investments. Experts in long-term investments seldom include them in portfolios due to their high-risk nature. This research predicted that the learned helplessness acquired from low-risk investments would not be generalized to high-risk investment intentions.

Hypotheses (H3 & H4) were that the interaction of history of uncontrollability (poor overall return (IV1) and high loss ratio (IV2)) in low-risk investment and a negative explanatory style (IV3) would not predict a high passivity in future high-risk investment intention. As a result, there would be absence of significant three-way interaction on H3: intended percentage (DV3) and H4: investment likelihood (DV4) in a direction of high passivity.

1.3.2. Saving

Saving refers to bank deposits. Bank deposits are mostly risk-free as bank runs have been rare and many governments have guaranteed pay back of bank deposits in bank runs. The research predicted that the learned helplessness in low-risk investment would not be generalized to saving. In other words, the learned helplessness in low-risk investments would not lead to less saving in terms of both magnitude (intended percentage) and likelihood.

Hypotheses (H5 & H6) were that the interaction of history of uncontrollability
(poor overall return (IV1) and high loss ratio (IV2)) in low-risk investments and a negative explanatory style (IV3) would not predict a high passivity in future saving intention. As a result, there would be absence of significant three-way interaction on H5: intended percentage (DV5) and H6: saving likelihood (DV6) in a direction of high passivity.

1.3.3. Information Seeking about Low-risk Investment Products

It is important to learn before investment (The Securities and Futures Commission of Hong Kong, 2009). Information seeking is an important step of good financial preparation. According to Brown & Reilly (2000), investors benefit from learning realistic investor goals, standards for evaluating portfolio performance, an appropriate asset allocation, return and risk characteristics of their investments, etc. This is commonly done in the Hong Kong context through information intermediary (agents / brokers), attending lectures, and financial literature and internet.

If generality is limited, the learned helplessness in low-risk investments would not be generalized to information seeking intentions about low-risk investment products.

The hypotheses (H7, H8 & H9) were that the interaction of history of uncontrollability (poor overall return (IV1) and high loss ratio (IV2)) in low-risk
investments and a negative explanatory style (IV3) would not predict high passivity in information seeking intentions about low-risk investment products. As a result, there would be absence of significant three-way interaction on H7: information intermediary (agents / brokers) (DV7) and H8: attending lectures (DV8) and H9: financial literature & internet (DV9) in a direction of high passivity.
2. METHOD

2.1. Participants

The thesis tested the population who were Hong Kong Chinese, aged 25 to 49, and had low-risk investment experience in the past two years. Gollier and Zeckhausert (2002) suggested link between investment time horizon and risk aversion. The limited age range minimized the effect of age and thus investment time horizon on the dependent variables. The condition of low-risk investment experience in the past 2 years was the antecedent to measure history of uncontrollability. If people did not invest in low-risk investments in the past two years, it was not possible to indicate the extent of history of uncontrollability in low-risk investments.

Participants were contacted through the researcher’s network. The researcher invited his friends, schoolmates and co-workers and their networks to join the research.

2.2. Questionnaire

This research used a questionnaire to collect data. The questionnaire contained four parts. Parts 1 to 3 measured the three components of the learned helplessness model whereas Part 4 measured the demographic variables. The questionnaire was either web-based or paper-based (see Appendix for details of the questionnaire). The
questionnaire was in Chinese. The researcher translated the English questionnaire into Chinese. Then, an independent translator back translated. The back translated version and the original English questionnaire were compared for quality check.

2.2.1. Part 1 – History of Uncontrollability

Part 1 measured the history of uncontrollability in low-risk investments in past two years. This part asked both overall return (IV1) and frequency of gain, neither loss nor gain, and loss of low-risk investments in the past two years. Participants were asked to indicate the overall return (IV1) on a 7-point scale from very significant gain = 1 to very significant loss = 7. The loss ratio (IV2) was calculated from responses of frequency of gain, neither loss nor gain, and loss. Participants indicated the numbers of “gain”, “neither loss nor gain” and “loss”. Loss ratio = frequency of loss / sum of all these responses. The loss ratio was expressed on a 5-point scale as follows. The highest loss ratio (81% or more) = 5, (61% to 80%) = 4, (41% to 60%) = 3, (21% to 40%) =2 and the lowest loss ratio (0% to 20%) = 1.

2.2.2. Part 2 -- Attributional Style

To measure the attributional style, Seligman (1984) developed the Attributional Style Questionnaire (ASQ). ASQ was an unpublished manuscript and was obtained
directly from Seligman. Use of ASQ in this thesis was permitted by Seligman. It was a self-report instrument containing 12 hypothetical situations (six negative and six positive). For each situation, participants were asked to vividly imagine it happening to them and to decide what they believe would be the one major cause of the situation. Participants then indicated on a 7-point rating scale the following three dimensions of the major cause: internal – external, stable – unstable, and global – specific. Table 2 contained a published example of the situation and the rating.

As the present model was based on negative events – the history of uncontrollability in investment, only the six negative situations were asked to provide a composite negative attributional score (IV3: Attributional style). The score was calculated by summation of all the scores and then divided by six. The highest score was 21 (most negative) and the lowest was three (most positive).

Seligman (1984) suggested that using a composite score was more valid and reliable than individual scores of each dimension based on only a few questions. The six negative situations were based on Seligman’s work.
Table 2
Sample situation from the Attributional Style Questionnaire (Peterson’s work, as cited in Reivich, 1995)

Event: You meet a friend who acts hostilely toward you.

1. Write down one major cause of this event: ________________________________

2. Is the cause of your friend acting hostile due to something about you or something about other people or circumstances?

<table>
<thead>
<tr>
<th>Totally due to other people or circumstances</th>
<th>1 2 3 4 5 6 7</th>
<th>Totally due to me</th>
</tr>
</thead>
<tbody>
<tr>
<td>(circle 1 number)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. In the future when interacting with friends, will this cause again be present?

<table>
<thead>
<tr>
<th>Will never again be present</th>
<th>1 2 3 4 5 6 7</th>
<th>Will always be present</th>
</tr>
</thead>
<tbody>
<tr>
<td>(circle 1 number)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Is the cause something that just influences interacting with friends or does it also influence other areas of your life?

<table>
<thead>
<tr>
<th>Influences just this particular area</th>
<th>1 2 3 4 5 6 7</th>
<th>Influences all situations in my life</th>
</tr>
</thead>
<tbody>
<tr>
<td>(circle 1 number)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.2.3. Part 3 – Investment, Saving and Information Seeking Intentions

Investment intentions.

Participants were asked on a 4-point scale (CentERdata, 2008) their likelihood in future one year on making low-risk investments (DV2), high-risk investments (DV4) and saving (DV6). In the scale, 1=yes, certainly yes, 2= perhaps yes, 3=perhaps not, 4=certainly not. A higher mark meant less investment intention.

Participants were also asked to estimate their allocation of their income in future
12 months as in Table 3. The intended percentages on low-risk investment (DV1), high-risk investment (DV3) and saving (DV5) were calculated from the allocated percentage over disposable income (1-Percentage in living cost). Conceptually, it was more important than seeing the allocated percentages alone. The reason behind was high behavioral intention resulted when people set aside more portion of disposable income. For example, a person might only invest in 2% income but 2% was already all of his disposable income. So this person had a high behavioral intention. Whereas, another person also invested in 2% but got 80% disposable income. The former person had much stronger behavioral intention than the latter one.

Table 3
Questions to allocate income in future 12 months

<table>
<thead>
<tr>
<th>In the future 12 months, how are you going to allocate your income? (please answer in percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Living expenses (clothing, food, rent, transportation, living allowance) ___%</td>
</tr>
<tr>
<td>2. Purchase unnecessary items or services (e.g. jewelry, watches, holidays) ___%</td>
</tr>
<tr>
<td>3. Invest in high-risk products ___%</td>
</tr>
<tr>
<td>4. Invest in low-risk products ___%</td>
</tr>
<tr>
<td>5. Saving deposit in banks ___%</td>
</tr>
<tr>
<td>6. Others ___%</td>
</tr>
</tbody>
</table>

(Total should be 100%)

Information seeking intentions about low-risk investment products.

The participants were asked on the 4-point scale (CentERdata, 2008), also used in investment likelihood, their information seeking intentions through information
intermediary (agents / brokers) (DV7), attending lectures (DV8) and financial
literature and internet (DV9). In the scale, 1=yes, certainly yes, 2= perhaps yes,
3=perhaps not, 4=certainly not. A higher mark meant less information seeking
intentions about low-risk investment products.

2.2.4. Part 4 – Demographic Information

Participants were asked the following demographic information: gender, age,
education level, no. of dependents (including parents, siblings, children, spouse, etc.),
o no. of years in low-risk investment experience and length that their saving /
investment could maintain their daily lives.

2.3. Procedure

Participants were invited to fill in a questionnaire which was either web-based or
paper-based at their own convenient time and place. The beginning of the
questionnaire instructed that it was anonymous and no personal data was required.
Prior ethical approval was obtained from City University of Hong Kong to conduct
the survey. The web-based questionnaires were collected through the web
automatically whereas the paper-based questionnaires were collected by the
researcher.
3. RESULTS

Table 4
Framework of Results

3.1. Descriptive results of demographics, IVs and DVs

3.1.1. Demographics

3.1.2. IVs

3.1.3. DVs
   3.1.3.1. Investment / saving intentions
   3.1.3.2. Information seeking intentions

3.2. Hypothesis testing

3.2.1. Learned helplessness in low-risk investments and main hypotheses

3.2.2. Generality of the learned helplessness and peripheral hypotheses
   3.2.2.1. High-risk investment
   3.2.2.2. Saving
   3.2.2.3. Information seeking about low-risk investment products

3.1. Descriptive Results of Demographics, IVs and DVs

3.1.1. Descriptive Results of Demographics

The research collected questionnaires from 74 male and 93 female (N=167) participants. Most participants were tertiary-educated and young (see Table 5 for information of their education level and age). Number of dependents, number of years in low-risk investment experience and the length that their saving / investment could maintain their daily lives were in Tables 6 and 7.
## Table 5
### Education level and age of the participants

<table>
<thead>
<tr>
<th>Education level</th>
<th>Frequency</th>
<th>Percent</th>
<th>Age range</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form 5</td>
<td>10</td>
<td>6.0</td>
<td>25-29</td>
<td>98</td>
<td>58.7</td>
</tr>
<tr>
<td>Form 7</td>
<td>2</td>
<td>1.2</td>
<td>30-34</td>
<td>44</td>
<td>26.3</td>
</tr>
<tr>
<td>Tertiary (sub-degree)</td>
<td>13</td>
<td>7.8</td>
<td>35-39</td>
<td>13</td>
<td>7.8</td>
</tr>
<tr>
<td>Tertiary (degree)</td>
<td>107</td>
<td>64.1</td>
<td>40-44</td>
<td>10</td>
<td>6.0</td>
</tr>
<tr>
<td>Tertiary (postgraduate)</td>
<td>33</td>
<td>19.8</td>
<td>45-49</td>
<td>2</td>
<td>1.2</td>
</tr>
<tr>
<td>Not answered</td>
<td>2</td>
<td>1.2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Table 6
### Number of dependents and number of years in low-risk experience of the participants

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of dependents*</td>
<td>1.16</td>
<td>1.49</td>
</tr>
<tr>
<td>No. of yrs in low-risk investment experience</td>
<td>4.18</td>
<td>4.02</td>
</tr>
</tbody>
</table>

*No. of dependents include anyone who depend on the participants economically. They can be parents, siblings, children or spouse.

## Table 7
### The length that their saving / investment could maintain their daily lives

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Valid percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 months or below</td>
<td>19.4</td>
</tr>
<tr>
<td>4-6 months</td>
<td>15.8</td>
</tr>
<tr>
<td>7-12 months</td>
<td>20.0</td>
</tr>
<tr>
<td>13-24 months</td>
<td>20.6</td>
</tr>
<tr>
<td>&gt;24 months</td>
<td>24.2</td>
</tr>
</tbody>
</table>
3.1.2. Descriptive results of IVs

Table 8
Mean, SD and scalar midpoint of the independent variables

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Scalar midpoint</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall return (IV1)</strong></td>
<td>4.82</td>
<td>1.204</td>
<td>4</td>
</tr>
<tr>
<td><strong>Loss ratio (IV2)</strong></td>
<td>3.04</td>
<td>1.420</td>
<td>3</td>
</tr>
<tr>
<td><strong>Attributional style (IV3)</strong></td>
<td>12.43</td>
<td>1.936</td>
<td>12</td>
</tr>
</tbody>
</table>

Note: IV1 varied from 1 (very significant gain) to 7 (very significant loss)
IV2 varied from 1 (0-20%) to 5 (81-100%). Participants indicated the numbers of “gain”, “neither loss nor gain” and “loss”. Loss ratio = frequency of loss / sum of all these responses
IV3 varied from 3 (most positive) to 21 (most negative)

As shown in Table 8, the mean of overall return (IV1) was 4.82 (SD=1.204), which was higher than the scalar midpoint of 4. This indicated that on average participants’ overall return during the last two years was more on loss than on gain, which was not surprising given the on-going global economic crisis.

The mean loss ratio (IV2) was 3.04 (SD=1.42), which indicated on average loss ratio between 41 to 60%. The mean composite negative attributional style (IV3) was 12.43 (SD=1.936). It was very close to the scalar midpoint of 12. As this scale was measured by multiple items (totally 18 items), a reliability test was run and the result showed that the test was reliable with Cronbach’s Alpha at 0.774.

The correlations among the three main independent variables were calculated
(see Table 9). Significant correlation was found between overall return (IV1) and loss ratio (IV2) at $r=.59$ (p<.01, 2-tailed). The significant correlation was expected as high loss ratio (IV2) usually led to poor overall return (IV1). Though they were significantly correlated, the coefficient of determination ($r^2$) was 34.8%, which was far below 100%. Only 34.8% of the variability of overall return (IV1) could be predicted from the relationship with loss ratio (IV2). The limited predictability indicated neither of them was redundant. It justified the use of both for regression analysis in hypothesis testing.

Table 9
Correlation matrix for the three main independent variables

<table>
<thead>
<tr>
<th></th>
<th>Loss ratio (IV2)</th>
<th>Attributional Style (IV3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Return (IV1)</td>
<td>+.59*</td>
<td>+.00</td>
</tr>
<tr>
<td>Loss Ratio (IV2)</td>
<td></td>
<td>+.03</td>
</tr>
</tbody>
</table>

*p<.01, 2-tailed
3.1.3. Descriptive results of DVs

3.1.3.1. Investment / saving intentions.

Table 10
Mean and SD of investment / saving intentions

<table>
<thead>
<tr>
<th>DV /</th>
<th>Intended percentage</th>
<th>Investment / saving likelihood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DV3/</td>
<td>7.77% (17.368)</td>
<td>2.98 (0.991)</td>
</tr>
<tr>
<td>High-risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DV1/</td>
<td>22.07% (19.963)</td>
<td>2.15 (0.796)</td>
</tr>
<tr>
<td>Low-risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DV5/ (Risk-free)</td>
<td>38.93% (24.358)</td>
<td>1.6 (0.729)</td>
</tr>
<tr>
<td>DV6/</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Intended percentage (DV1, 3, 5) = intended percentage in investment or saving / (1 - intended percentage in living cost).

Investment likelihood (DV2, 4, 6): 4-point scale (1=yes, certainly yes, 2= perhaps yes, 3=perhaps not, 4=certainly not)

Table 10 marked decline in investment intentions from savings to low-risk investment then to high-risk investment. The participants were more likely to save (lower score in likelihood) and save more (higher intended percentage) than to engage in low-risk investment. On the other hand, the participants were more likely to invest (lower score in likelihood) and invest more (higher intended percentage) than in high-risk investment. The means of saving and low-risk investment likelihood were 1.6 and 2.15 respectively, which were below the scalar midpoint of 2.5. It indicated that the participants were more likely to engage than not to engage in savings and low-risk investment. The mean high-risk investment likelihood was 2.98, which was
above the scalar midpoint of 2.5. It indicated that the participants were more likely not to engage than to engage in high-risk investments. The correlations between intended percentages and investment likelihoods were in Table 11. The high-risk and low-risk correlations were significant at -.661 and -.446 respectively. They were far from correlation at 1.0 and it was justified to use both intended percentage and likelihood to measure investment intentions.

Table 11
Correlations between intended percentage and investment / saving likelihood

<table>
<thead>
<tr>
<th></th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-risk</td>
<td>-.661**</td>
</tr>
<tr>
<td>Low-risk</td>
<td>-.446**</td>
</tr>
<tr>
<td>Saving</td>
<td>-.156</td>
</tr>
</tbody>
</table>

Note: ** p<.01

3.1.3.2. Information seeking intentions.

There were three means (information intermediary [agent / broker], attending lectures, financial literature & internet) concerning information-seeking intentions about low-risk investment products. A reliability analysis indicated the Cronbach’s Alpha at 0.529 (no. of items = 3) among these three means. As the Cronbach’s Alpha was below 0.7, no composite score was used to represent information seeking intentions. Each information-seeking intention was to be analyzed individually.
Table 12
Mean and SD of information-seeking intentions about low-risk investment products

<table>
<thead>
<tr>
<th>Information seeking intentions</th>
<th>Information intermediary (agent / broker)</th>
<th>Financial literature &amp; internet (DV7)</th>
<th>(DV8)</th>
<th>(DV9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-risk investment</td>
<td>3.05 (0.820)</td>
<td>3.23 (0.791)</td>
<td>2.04 (0.864)</td>
<td></td>
</tr>
</tbody>
</table>

Note: Information-seeking likelihood (DV7, 8, 9): 4-point scale (1=yes, certainly yes, 2= perhaps yes, 3=perhaps not, 4=certainty not). A higher mark means less likelihood.

Table 12 showed that the mean of financial literature & internet was 2.04 (SD=0.864), which was below the scalar midpoint of 2.5. It indicated that the participants preferred to seek information from financial literature & internet than not to. The means of information intermediary (agent / broker) and attending lectures were 3.05 (SD=0.820) and 3.23 (SD=0.791). Both means were larger than the scalar mid-point of 2.5. It indicated that the participants preferred not to seek than to seek information through information intermediary (agent / broker) and attending lectures.

The paired t-tests showed that the information seeking intention through financial literature & internet was significantly larger than through information intermediary, t(166)= -11.86, p<.05. The intention through information intermediary was significantly larger than through attending lectures, t(166)= -2.854.
3.2. Hypothesis testing

As shown in Table 13, this research had a total of 9 hypotheses. Hypothesis 1 and 2 were the main hypotheses. They tested if the learned helplessness in low-risk investment predicted the lower low-risk investment intention. There would be a negative three-way interaction effect among poor overall return (IV1), high loss ratio (IV2) and negative attributional style (IV3) on H1: smaller intended percentage (DV1) and H2: less investment likelihood (DV2). Poor overall return (IV1) and high loss ratio (IV2) were the components of history of uncontrollability.

Hypothesis 3 to 9 tested the generality of learned helplessness from low-risk investments to other intentions. Hypothesis 3 and 4 were on high-risk investment intention, Hypothesis 5 and 6 were on saving intention and Hypothesis 7, 8, 9 were on information seeking intentions about low-risk investment products. As stated by Cole and Coyne (1977), there was limited generality of learned helplessness, the expected result was that there was absence of three-way interaction among poor overall return (IV1), high loss ratio (IV2) and negative attributional style (IV3) on high-risk / saving investment and information seeking intentions in a direction of high passivity.

All the nine hypotheses were tested by hierarchical multiple regression. In each test, there were three blocks. Block 1 consisted all the three IVs (overall return, loss ratio, attributional style) and demographic variables of gender, age, education, no. of
dependents, length of experience in low-risk investment, length of living that saving and investment could maintain. Block 2 consisted the three two-way interaction terms (IV1 * IV2, IV2 * IV3, IV1 *IV3). Block 3 consisted the crucial three-way interaction term (IV1 * IV2 * IV3). The research tested if each block increased the R² significantly. If R² increased significantly, the research checked which variable(s) was significant. Blocks 1 and 2 controlled the effects of main variables and the two-way interaction terms. The order of entry made the test of the three-way interaction effect (Block 3) conservative.

To minimize multicollinearity in interaction terms, all scores were standardized to z scores before interaction terms were formed. The only exception was gender which was a dummy variable (female=0, male=1). The results showed that all the regressions were free of multicollinearity (all collinearity tolerances were >.1).
Table 13:
Summary of hypotheses

<table>
<thead>
<tr>
<th></th>
<th>Investment intentions</th>
<th>Information seeking intentions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intended percentage</td>
<td>Investment/saving likelihood</td>
</tr>
<tr>
<td></td>
<td>(in percentage)</td>
<td>(on 4-point scale)</td>
</tr>
<tr>
<td>High-risk</td>
<td>Hypothesis 3**</td>
<td>Hypothesis 4**</td>
</tr>
<tr>
<td>Low-risk (Main hypothesis)</td>
<td>Hypothesis 1*</td>
<td>Hypothesis 2*</td>
</tr>
<tr>
<td>Saving (Risk-free)</td>
<td>Hypothesis 5**</td>
<td>Hypothesis 6**</td>
</tr>
</tbody>
</table>

* Expected results: Significant three-way interaction effects (overall return * loss ratio * negative attributional style) on H1: smaller intended percentage and H2: less investment likelihood.

** Expected result: Absence of significant three-way interaction effect (overall return * loss ratio * negative attributional style) on the DVs in a direction of decreased intentions.

3.2.1. Learned Helplessness in Low-risk Investments & Main Hypotheses

**Hypothesis 1: Intended percentage (DV1) in low-risk investment.**

The three-way interaction was the main part in regression analysis for hypothesis testing. The hierarchical regression (see Table 14) showed a significant negative three-way interaction ($R^2$ change=.066, $p<.05$, $\beta=-.393$), given all other main effects and three two-way interaction effects controlled. There was no significant main effect. One two-way interaction term (loss ratio [IV2]*attributional style [IV3]) was significant ($R^2$ change=.085, $p<.05$, $\beta=.387$). As of the presence of significant three-way interaction effect, the two-way interaction effect appeared to be embedded in the three-way interaction.
The direction of the three-way interaction was negative. It indicated that poor overall return, high loss ratio and negative attributional style interacted in smaller intended percentage for low-risk investment. It supported Hypothesis 1 that the interaction of history of uncontrollability (both overall return[IV1] and loss ratio[IV2]) in low-risk investment and a negative explanatory style (IV3) resulted in high passivity in future low-risk investment in terms of H1: smaller intended percentage (DV1).

**Hypothesis 2: Investment likelihood (DV2) in low-risk investment.**

As shown in Table 14, there was one main effect which was gender. Male had a significantly higher investment likelihood (R^2 change=.115, p<.01, β=-.288.). There was no significant interaction effect in both two-way and three way interactions at p<.05 level. The absence of significant three-way interaction did not support Hypothesis 2 that a three-way interaction on less investment likelihood was expected.
# Table 14
Regression result for low-risk investment intention (H1 & H2)

<table>
<thead>
<tr>
<th>Block</th>
<th>Variable</th>
<th>H1: Intended percentage (DV1) R^2 change</th>
<th>H2: Investment likelihood (DV2) R^2 change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(p value) b(SEb) β</td>
<td>(p value) b(SEb) β</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>.343(.235) .170</td>
<td>- .562(.163)** - .288</td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>.083(.117) .088</td>
<td>-.028(.082) .028</td>
</tr>
<tr>
<td></td>
<td>Education</td>
<td>-.111(.117) -.118</td>
<td>.024(.084) .024</td>
</tr>
<tr>
<td></td>
<td>No. of dependents</td>
<td>-.150(.110) -.160</td>
<td>.103(.078) .107</td>
</tr>
<tr>
<td></td>
<td>Length of experience in</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>low-risk investment</td>
<td>-.015(.113) -.020</td>
<td>-.119(.093) -.125</td>
</tr>
<tr>
<td></td>
<td>length of living that</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>saving &amp; investment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>can sustain</td>
<td>.140(.126) .148</td>
<td>.049(.088) .050</td>
</tr>
<tr>
<td></td>
<td>Overall return (OR)</td>
<td>.142(.144) .127</td>
<td>-.033(.095) -.033</td>
</tr>
<tr>
<td></td>
<td>Loss ratio (LR)</td>
<td>.138(.129) .139</td>
<td>.097(.093) .100</td>
</tr>
<tr>
<td>1</td>
<td>Attributional style (AS)</td>
<td>.140(.188) .051(.122) .050</td>
<td>.115(.027)* -.037(.081) -.039</td>
</tr>
<tr>
<td></td>
<td>OR * LR</td>
<td>.011(.145) -.008</td>
<td>.012(.088) .011</td>
</tr>
<tr>
<td></td>
<td>OR * AS</td>
<td>-.122(.158) -.107</td>
<td>.062(.088) .070</td>
</tr>
<tr>
<td>2</td>
<td>LR * AS</td>
<td>.085(.048)* .356(.135)* .387</td>
<td>.007(.752) .020(.090) .022</td>
</tr>
<tr>
<td>3</td>
<td>OR * LR * AS</td>
<td>.066(.010)* -.456(.173)* .393</td>
<td>.011(.173) -.121(.089) -.149</td>
</tr>
</tbody>
</table>

* p<.05  ** p<.01

Intended percentage (DV1) = intended percentage in low-risk investment / (1- intended percentage in living cost). Higher percentage meant higher investment intention.

Investment likelihood (DV2): 4-point scale. 1=yes, certainly yes, 2= perhaps yes, 3=perhaps not, 4=certainly not. Lower mark meant higher investment likelihood.

b=unstandardized coefficient, SEb=standard error, B=standardized coefficient

Gender (female=0, male=1)

Overall return (OR): 1=very significant gain to 7=very significant loss

Loss ratio = frequency of loss / sum of all responses (loss, gain, neither gain nor loss). The loss ratio (LR) was expressed on a 5-point scale as follows. Lowest loss ratio (0% to 20%)=1, Highest loss ratio (81% to 100%)=5

Attributional style (AS): 3 (most positive) to 21 (most negative)
3.2.2. Generality of the Learned Helplessness and Peripheral Hypotheses

In the following, the research tested if the learned helplessness in low-risk investment (poor overall return [IV1] * high loss ratio [IV2] * negative attributional style [IV3]) could be generalized to high-risk investment, saving and information seeking intentions. Once again, hierarchical regression was used. Block 1 contained the main effects and Block 2 contained three two-way interaction terms for control. Block 3 was the crucial three-way interaction. The order of entry allowed the three-way interaction term to be tested conservatively. If it could be generalized, the learned helplessness would lead to a three-way interaction in a direction of decreased intentions. As suggested by the literature (Cole & Coyne, 1977), the generality of learned helplessness was limited. The expected results were no significant three-way interaction effect in a direction of decreased intentions.

3.2.2.1. High-risk investment intention (H3 & H4).

Regarding H3, the Table 15 showed that there were significant main effects on gender ($R^2$ change=.325, $p<.01$, $\beta=.282$.) and length of experience in low-risk investment ($R^2$ change=.325, $p<.05$, $\beta=.274$.). Male and longer length of experience in low-risk investment led to higher intended percentage in high-risk investment. There was no significant two-way and three-way interaction. The result supported H3 that
significant three-way interaction was absent.

Regarding H4, the Table 15 showed that there was one main effect which was gender. Male led to higher investment likelihood ($R^2$ change=.210, $p<.01$, $\beta=-.291$). There was no significant two-way and three-way interaction. The result supported H4 that significant three-way interaction was absent.
Table 15
Regression result of high-risk investment intention (H3 & H4)

<table>
<thead>
<tr>
<th>Block</th>
<th>Variable</th>
<th>H3: Intended percentage (DV3)</th>
<th>H4: Investment likelihood (DV4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>$R^2$ change (p value)</td>
<td>$b$ (SEb)</td>
</tr>
<tr>
<td>Gender</td>
<td>.573(.211)**</td>
<td>.282</td>
<td>- .583(.158)**</td>
</tr>
<tr>
<td>Age</td>
<td>.035(.105)</td>
<td>.037</td>
<td>- .088(.079)</td>
</tr>
<tr>
<td>Education</td>
<td>-.044(.105)</td>
<td>-.047</td>
<td>-.007(.081)</td>
</tr>
<tr>
<td>No. of dependents</td>
<td>.169(.099)</td>
<td>.178</td>
<td>.000(.076)</td>
</tr>
<tr>
<td>Length of experience in low-risk investment</td>
<td>.206(.101)*</td>
<td>.274</td>
<td>-.122(.090)</td>
</tr>
<tr>
<td>Length of living that saving &amp; investment can sustain</td>
<td>.073(.113)</td>
<td>.077</td>
<td>-.081(.086)</td>
</tr>
<tr>
<td>Overall return (OR)</td>
<td>-.143(.129)</td>
<td>-.127</td>
<td>.175(.092)</td>
</tr>
<tr>
<td>Loss ratio (LR)</td>
<td>.325</td>
<td>-.111(.115)</td>
<td>-.110</td>
</tr>
<tr>
<td>1</td>
<td>Attributional style (AS)</td>
<td>(.000)**</td>
<td>.144(.109)</td>
</tr>
<tr>
<td>OR * LR</td>
<td>.300(.132)</td>
<td>.234</td>
<td>-.084(.085)</td>
</tr>
<tr>
<td>OR * AS</td>
<td>.161(.143)</td>
<td>.140</td>
<td>.141(.085)</td>
</tr>
<tr>
<td>2</td>
<td>LR * AS</td>
<td>.049(.122)</td>
<td>-.110(.122)</td>
</tr>
<tr>
<td>3</td>
<td>OR * LR * AS</td>
<td>.011(.248)</td>
<td>.189(.162)</td>
</tr>
</tbody>
</table>

* p<.05
** p<.01

Intended percentage(DV3) = intended percentage in high-risk investment / (1-intended percentage in living cost). Higher percentage meant higher investment intention

Behavioral intention (DV4): 4-point scale. 1=yes, certainly yes, 2=perhaps yes, 3=perhaps not, 4=certainly not

Lower mark meant higher investment likelihood.

b=unstandardized coefficient, SEb=standard error, $\beta$=standardized coefficient

Gender (female=0, male=1)

Overall return (OR): 1=very significant gain to 7=very significant loss

Loss ratio = frequency of loss / sum of all responses (loss, gain, neither gain nor loss). The loss ratio (LR) was expressed on a 5–point scale as follows. Lowest loss ratio (0% to 20%) = 1, Highest loss ratio (81% to 100%) = 5

Attributional style (AS): 3 (most positive) to 21 (most negative)
3.2.2.2. Saving intention (H5 & H6)

Regarding H5, the Table 16 showed that there was no significant main effect and two-way interaction effect. Three-way interaction effect was significant ($R^2$ change=.051, $p<.05$, $\beta=.344$). Though the three-way interaction was present, it was positive in direction. It meant that the learned helplessness did not decrease the saving intention in terms of intended percentage, but increased it. The positive direction supported Hypothesis 5 that no three-way interaction effect in a direction of decreased intention was present. The positive three-way interaction effect would be discussed in Discussion, Implications and Recommended Studies.

Regarding H6, Table 16 showed that there was no significant effect in all main effects, two-way and three-way interaction effects. It supported the Hypothesis 6 that significant three-way interaction was absent.
Table 16
Regression result on saving intention (H5 & H6)

<table>
<thead>
<tr>
<th>Block</th>
<th>Variable</th>
<th>H5: Intended percentage (DV5)</th>
<th>H6: Saving likelihood (DV6)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>$R^2$ change (p value)</td>
<td>b(SEb)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td>- .528(.233)</td>
<td>- .267</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>- .028(.116)</td>
<td>-.031</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td>.154(.116)</td>
<td>.167</td>
</tr>
<tr>
<td>No. of dependents</td>
<td></td>
<td>-.032(.109)</td>
<td>-.034</td>
</tr>
<tr>
<td>Length of experience in low-risk investment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of living that saving &amp; investment can sustain</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall return (OR)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loss ratio (LR)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Attributional style (AS)</td>
<td></td>
<td>.129(.252)</td>
<td>-.025(.121)</td>
</tr>
<tr>
<td>OR * LR</td>
<td></td>
<td>-.190(.146)</td>
<td>-.152</td>
</tr>
<tr>
<td>OR * AS</td>
<td></td>
<td>-.211(.160)</td>
<td>-.189</td>
</tr>
<tr>
<td>2 LR * AS</td>
<td></td>
<td>.051(.206)</td>
<td>-.054(.136)</td>
</tr>
<tr>
<td>3 OR * LR * AS</td>
<td></td>
<td>.051(.029)</td>
<td>.392(.177)</td>
</tr>
</tbody>
</table>

* p<.05  ** p<.01

Note: Higher percentage meant higher investment intention
Behavioral intention (DV6): 4-point scale. 1=yes, certainly yes, 2= perhaps yes, 3=perhaps not, 4=certainly not
Lower mark meant higher saving likelihood.
b=unstandardized coefficient, SEb=standard error, B=standardized coefficient
Gender (female=0, male=1)
Overall return (OR): 1=very significant gain to 7=very significant loss
Loss ratio = frequency of loss / sum of all responses (loss, gain, neither gain nor loss). The loss ratio (LR) was expressed on a 5–point scale as follows. Lowest loss ratio (0% to 20%)=1, Highest loss ratio(81% to 100%)=5
Attributional style (AS): 3 (most positive) to 21 (most negative)

Intended percentage(DV5) = intended percentage in saving / (1-intended percentage in living cost).
3.2.2.3. Information seeking intentions about low-risk investment products (H7, H8, H9).

Regarding H7: information intermediary (agent / broker), Table 17 showed that there was no significant main effect. One two-way (overall return [IV1] * loss ratio [IV2]) was significant ($R^2=.053$, $p<.01$, $\beta=.215$). The crucial three-way interaction was significant also ($R^2=.028$, $p<.05$, $\beta=.239$) in a positive direction that meant the three-way interaction led to less information seeking intention through information intermediary (agent / broker). As of the presence of three-way interaction effect, the significant two-way interaction appeared to be embedded in the three-way interaction. The significant three-way interaction in a direction of decreased intention did not support H7 which expected the absence of significant three-way interaction effect. The result supported that the learned helplessness was generalized to information seeking intention through information intermediary.
Table 17
Regression result of information seeking intentions (H7)

<table>
<thead>
<tr>
<th>Block</th>
<th>Variable</th>
<th>$R^2$ change (p value)</th>
<th>b(SEb)</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gender</td>
<td>.153(.172)</td>
<td>.077</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>-.069(.087)</td>
<td>-.069</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Education</td>
<td>.054(.088)</td>
<td>.054</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No. of dependents</td>
<td>-.080(.083)</td>
<td>-.081</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length of experience in low-risk investment</td>
<td>.123(.098)</td>
<td>.125</td>
<td></td>
</tr>
<tr>
<td></td>
<td>length of living that saving &amp; investment can sustain</td>
<td>.052(.093)</td>
<td>.052</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overall return (OR)</td>
<td>-.170(.100)</td>
<td>-.168</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loss ratio (LR)</td>
<td>.097(.098)</td>
<td>.097</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Attributional style (AS)</td>
<td>.057(.433)</td>
<td>-.002(.085)</td>
<td>-.002</td>
</tr>
<tr>
<td></td>
<td>OR * LR</td>
<td>* .243(.091)** .215</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>OR * AS</td>
<td>-.131(.091)</td>
<td>-.145</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>LR * AS</td>
<td>.053(.035)* .127(.093)</td>
<td>.138</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>OR * LR * AS</td>
<td>.028(.029)* .199(.090)*</td>
<td>.239</td>
<td></td>
</tr>
</tbody>
</table>

* p<.05
** p<.01

Information seeking likelihood (DV7): 4-point scale. 1=yes, certainly yes, 2=perhaps yes, 3=perhaps not, 4=certainly not. Lower mark meant higher investment likelihood.

b=unstandardized coefficient, SEb=standard error, B=standardized coefficient

Gender (female=0, male=1)

Overall return (OR): 1=very significant gain to 7=very significant loss

Loss ratio = frequency of loss / sum of all responses (loss, gain, neither gain nor loss). The loss ratio (LR) was expressed on a 5-point scale as follows. Lowest loss ratio (0% to 20%)=1, Highest loss ratio (81% to 100%)=5

Attributional style (AS): 3 (most positive) to 21 (most negative)
Regarding H8, Table 18 showed that there was no main effect, two-way interaction and three-way interaction. It supported H8 that significant three-way interaction was absent. The learned helplessness in low-risk investment was not generalized to information seeking intention through attending lectures.

Regarding H9, same as attending lectures, there was no main effect, two-way interaction and three-way interaction through financial literature & internet (see Table 18). It supported H9 that significant three-way interaction was absent. The learned helplessness in low-risk investment was not generalized to information seeking intention through financial literature & internet.
Table 18
Regression result of information seeking intentions (H8 & H9)

<table>
<thead>
<tr>
<th>Block</th>
<th>Variable</th>
<th>Information seeking likelihood</th>
<th>H8: Attending lectures (DV8)</th>
<th>H9: Financial literature &amp; internet (DV9)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>$R^2$ change (p value) b(SEb) $\beta$</td>
<td>$R^2$ change (p value) b(SEb) $\beta$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>-.435 (.171) -.215</td>
<td>-.277 (.170) -.141</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>-.137 (.086) -.135</td>
<td>.067 (.085) .068</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Education</td>
<td>.201 (.088) .197</td>
<td>-.038 (.087) -.039</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No. of dependents</td>
<td>.135 (.082) .135</td>
<td>.019 (.082) .019</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length of experience in low-risk investment</td>
<td>.185 (.098) .187</td>
<td>-.078 (.097) -.081</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length of living that saving &amp; investment can sustain</td>
<td>.014 (.093) .014</td>
<td>-.043 (.092) -.043</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overall return (OR)</td>
<td>.047 (.099) .046</td>
<td>.011 (.099) .011</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loss ratio (LR)</td>
<td>-.097 (.098) -.096</td>
<td>.024 (.097) .025</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Attributional style (AS)</td>
<td>.092 (.092) .095</td>
<td>.048 (.582) .063 (.084) -.065</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OR * LR</td>
<td>.161 (.092) .141</td>
<td>-.025 (.092) -.022</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OR * AS</td>
<td>.008 (.092) .009</td>
<td>.093 (.092) .105</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>LR * AS</td>
<td>.020 (.346) .026 (.094) .028</td>
<td>.008 (.753) -.027 (.094) -.030</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>OR * LR * AS</td>
<td>.004 (.410) -.077 (.093) -.091</td>
<td>.000 (.894) .012 (.093) .015</td>
<td></td>
</tr>
</tbody>
</table>

$p<.01$ **

$p<.05$ *

Information seeking likelihood (DV8 & DV9): 4-point scale. 1=yes, certainly yes, 2=perhaps yes, 3=perhaps not, 4=certainty not. Lower mark meant higher investment likelihood.

b=unstandardized coefficient, SEb=standard error, B=standardized coefficient

Gender (female=0, male=1)

Overall return (OR): 1=very significant gain to 7=very significant loss

Loss ratio = frequency of loss / sum of all responses (loss, gain, neither gain nor loss). The loss ratio (LR) was expressed on a 5–point scale as follows. Lowest loss ratio (0% to 20%)=1, Highest loss ratio(81% to 100%)=5

Attributional style (AS): 3 (most positive) to 21 (most negative)
4. DISCUSSION & CONCLUSIONS

4.1. Discussion, Implications and Recommended Studies

The results supported that the learned helplessness (poor overall return * high loss ratio * negative attributional style) predicted H1: smaller intended percentage, not H2: less investment likelihood in low-risk investment. The learned helplessness in low-risk investment was not generalized to high-risk investment (H3 & H4) and saving intention (H5 & H6). The learned helplessness even increased the saving intention through higher intended percentage in saving (DV5). The learned helplessness was generalized to one of the three means of information seeking, which was H7: information intermediary (agent / broker). The information seeking intentions through attending lectures (H8) and financial literature (H9) were not affected.

4.1.1. The Applicability of Learned Helplessness Model in Low-risk Investment

The significant result in H1: learned helplessness predicted less intended percentage in low-risk investment supports that the learned helplessness model is applicable to low-risk investment intention. This research is one of the first studies that provides empirical evidence to the applicability of the model to investment intentions. The applicability implies that history of uncontrollability together with
negative attributional style leads to less investment intention. To promote financial preparation for old age, it is important to break the learned helplessness. Seligman (1990) suggested that a positive attributional style can be learned and it is one of the solutions to break the learned helplessness.

The result that only H1 is supported but not H2 shows that learned helplessness impacts only intended percentage, not likelihood. The correlation at -0.446 (see Table 11) further substantiates that intended percentage and investment likelihood do not always work in a coherent way. People continue to invest but invest in significantly smaller proportion of their income under learned helplessness. Future studies on investment behaviors should consider both effects. More, when society adopts any intervention against passivity in investment resulted from learned helplessness, it is the magnitude of financial preparation that needs intervention, not the likelihood. Financial preparation for old age is not a matter of all-or-nothing (prepared or totally not prepared), it is more on the magnitude (enough or not enough). For example, though AXA Group (2008) showed that more workers (75% in North America, 50% in Asia) nowadays prepare for their retirement much more than the past generation, HSBC (2008) found that only a small proportion of people will be prepared for retirement and be completely protected. This result also has an implication to future learned helplessness studies. Apart from measuring the frequency of responses as an
indicator of passivity, it is also important to measure the effort or magnitude of each response.

In the literature review, it is unclear whether overall return (IV1) or loss ratio (IV2) is important to bring learned helplessness effect. The three-way interaction effect in H1 shows that both poor overall return and high loss ratio are necessary to form history of uncontrollability. More studies are recommended to investigate the mechanism between them.

4.1.2. The Generality of the Learned Helplessness

4.1.2.1. High-risk investment / saving intentions.

The absence of significant three-way interaction effect in H3, H4, H5, H6 in a direction of decreased intentions supports that the learned helplessness acquired in low-risk investment is not generalized to high-risk investment and saving intentions. The learned helplessness is sensitive to riskiness. It supports the Cole and Coyne (1977)’s finding that learned helplessness acquired in one situation is not generalized to other situations.

While the learned helplessness acquired in low-risk investment decreases low-risk intended percentage, it increases saving intended percentage. This result shows that people change their asset allocation from low-risk investment to saving
under learned helplessness. It is a positive note to financial preparation for old age as people still save for future but just become more risk-averse. As low-risk investment is the preferred asset for long-term investment, it is important to study when the learned helplessness effect stops and people become less risk-averse and put their money back to low-risk investment. It is recommended for a longitudinal study on change of learned helplessness over time.

4.1.2.2. Information seeking intentions.

While the significant three-way interaction in H7 supports the generality of the learned helplessness to information seeking intention through information intermediary (agent / broker), the non-significant three-way interactions in H8 and H9 support that the learned helplessness is not generalized to attending lectures and financial literature & internet. The mixed results in information seeking intentions seem to suggest that information needs still exist but people become selective in the means to seek information under learned helplessness. Different information means have different psychology.

As suggested by Wilson (as cited in Case, 2002), information seeking behaviors are to satisfy information needs. Information needs are secondary needs to satisfy primary needs. In investment setting, the information needs are to understand
potential investments and reduce the “perceived risk” (Mitra, Reiss, and Capella, 1999) about those investments. The investments are ultimately for better living (i.e., housing, food, education, safety, etc.) in future. The non-significant effects in H8 and H9 seem to suggest that the learned helplessness does not all decrease information seeking intentions. The information needs to understand investment products and reduce perceived risk still exist.

Information seeking through an information intermediary (agent / broker) is more a committed act than attending lectures and financial literature & internet. People seek information through intermediary directly take the intermediary’s time and they usually meet face-to-face. The face-to-face medium creates a psychological connection and the time taken creates a social pressure of reciprocating favors as suggested by Gruner and Regan’s studies (as cited in Kenrick, Neuberg, and Cialdini, 2007). The best reciprocal favors are purchase of financial products through the information intermediary. Perceiving the pressure ahead and being passive in low-risk investment, the participants may not seek information from an information intermediary because they are afraid that they may not buy anything from him to reciprocate favors. Instead, people can attend lectures, read financial literature and browse internet without others’ direct help. They can become anonymous passengers to seek information. They feel no pressure to purchase anything after they seek
information from those means. In summary, the perceived pressure to reciprocal favors makes information seeking through information seeking the only mean to be affected by the learned helplessness. The implications for financial preparations are that information needs still exist and promotion for financial preparation to those suffered from learned helplessness should reach them through financial literature & internet which has the highest intention (see Table 12) and is not affected by learned helplessness.

4.1.3. Other Finding

Gender is a key variable affecting investment intentions in high-risk / low –risk investments. Men tend to have higher investment intentions in both high-risk and low-risk investments. It is in line with Eckel & Grossman’s (2002) finding that women are more risk-averse.

4.1.4. Limitation

Eighty-five percents of the participants are in their early adulthood (aged between 25 and 34). As suggested by Brown & Reilly (2000), the middle adulthood is more important than the early adulthood for financial preparation for old age because people in their middle adulthood have more disposable income given their higher
career status and fewer burdens on education, loans, housing, etc. The research finding from early adulthood may not be completely equal to middle adulthood as middle adulthood has shorter time span in investment and is thus more risk-averse. As demonstrated in this study, applicability of learned helplessness is sensitive to riskiness. The risk aversion in middle adulthood may influence the applicability of the model. It is recommended that future studies should include more participants at their middle adulthood.

4.2. Conclusions

This thesis is one of the first studies applying the learned helplessness model to investment intentions. Results support that learned helplessness lead to lower intended percentage for low-risk investment. The applicability of the learned helplessness is sensitive to riskiness. The learned helplessness in low-risk investment is not generalized to high-risk investment and saving intentions. It affects information seeking through information intermediary (agent / broker) but not attending lectures and financial literature and internet. The results have implications for financial preparation for old age. History of investment results (both overall return and loss ratio) and cognition (attributional style) matter to financial preparation.
REFERENCES


APPENDIX

The Questionnaire

Part A

1. What is your age?

☐ 24 or below (Remarks: questionnaire ends)
☐ 50 or above (Remarks: questionnaire ends)

2. Did you involve in any high-risk investment in the past 2 years?
(Note: high-risk investments include financial derivatives (e.g. warranty),
small-company stocks, leveraged investment (e.g, margin), short-term speculation on
stock price fluctuation, etc.)

☐ Yes    ☐ No

3. Did you involve in any low-risk investments in the past 2 years?
(Note: low-risk investments include bonds and large-company/blue-chip stocks,
traditional funds composed of bonds and / or large-company/blue-chip stocks, or
investment-linked insurance policy)

☐ Yes    ☐ No (Remarks: questionnaire ends)

4. How would you describe the overall return of your low-risk investments in the past
2 years?

☐ very significant loss
☐ significant loss
☐ slight loss
☐ neither loss nor gain
☐ slight gain
☐ significant gain
☐ very significant gain
4. When you made low-risk investments in the past two years, how many times did you gain, loss or level off (neither gain nor lose)?  (Remarks: if you haven’t sold those investments, please calculate the return using current market price.)

No. of gain(s): __________
No. of level off (neither gain nor lose): __________
No. of loss(es): __________
(The total of the above three items should be the total number of investments you made in the past two years.)

Part B

Note: Attributional Style Questionnaire (ASQ) developed by Seligman (1984) was used in Part B. The ASQ was an unpublished manuscript and thus only one published example (totally six used in the questionnaire) was shown here. In the real questionnaire, six out of twelve situations from ASQ were used.

Sample situation from the Attributional Style Questionnaire (Peterson’s work, as cited in Reivich, 1995)

Event: You meet a friend who acts hostilely toward you.

1. Write down one major cause of this event: ____________________________

2. Is the cause of your friend acting hostile due to something about you or something about other people or circumstances?

   Totally due to other people or circumstances 1 2 3 4 5 6 7
   Totally due to me
   (circle 1 number)

3. In the future when interacting with friends, will this cause again be present?

   Will never again be present 1 2 3 4 5 6 7
   Will always be present
   (circle 1 number)

4. Is the cause something that just influences interacting with friends or does it also influence other areas of your life?

   Influences just this particular area 1 2 3 4 5 6 7
   Influences all situations in my life
   (circle 1 number)
**Part C**

1. In the next 12 months, are you going to find or accept invitation from your financial / insurance agents or brokers to discuss on the following products?

<table>
<thead>
<tr>
<th></th>
<th>yes, certainly yes</th>
<th>perhaps yes</th>
<th>perhaps not</th>
<th>certainly not</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-risk products(^3)</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Low-risk products(^4)</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

2. In the next 12 months, are you going to attend lectures to understand the following products?

<table>
<thead>
<tr>
<th></th>
<th>yes, certainly yes</th>
<th>perhaps yes</th>
<th>perhaps not</th>
<th>certainly not</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-risk products</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Low-risk products</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

3. In the next 12 months, would you try to understand the following products through internet and/or financial newspaper, magazines, reports?

<table>
<thead>
<tr>
<th></th>
<th>yes, certainly yes</th>
<th>perhaps yes</th>
<th>perhaps not</th>
<th>certainly not</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-risk products</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Low-risk products</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

\(^3\)High-risk investments include financial derivatives (e.g. warranty), small-company stocks, leveraged investment (e.g. margin), short-term speculation on stock price fluctuation, etc.

\(^4\)Low-risk investments include large-company/blue-chip bonds and stocks, traditional funds composed of large-company/blue-chip stocks or bonds and investment-linked insurance policy)
4. In the next 12 months, are you going to set aside part of your income for the following investments or saving?

<table>
<thead>
<tr>
<th></th>
<th>yes, certainly yes</th>
<th>perhaps yes</th>
<th>perhaps not</th>
<th>certainly not</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-risk products</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low-risk products</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank saving</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. In the future 12 months, how are you going to allocate your income? (please answer in percentage)

1. Living expenses (clothing, food, rent, transportation, living allowance) ___%
2. Purchase unnecessary items or services (e.g. jewelry, watches, holidays) ___%
3. Invest in high-risk products ___%
4. Invest in low-risk products ___%
5. Saving deposit in banks ___%
6. Others ___%

(Total should be 100%)

Part D

1. What is your gender?
   □ Male    □ Female

2. What is your education level?
   □ Form 3 or below □ Form 5 □ Form 7
   □ Tertiary (certificate, diploma, associate degree)
   □ Tertiary (degree) □ Postgraduate □ Not to answer
3. How many family members depend on you economically? (Note: you are the major source of income for them. If you stop providing living cost to them, their lives are greatly influenced.)
   - No
   - Yes (☐ Parents / grand-parents / parents of spouse. How many? _________)
     (☐ Children. How many? _________)
     (☐ Spouse)
     (☐ Sibling. How many? _________)

4. Approximately, how many months can your saving / investments maintain your living expenses?
   - 3 months or below
   - 4 – 6 months
   - 7 – 12 months
   - 13 – 24 months
   - 25 months or above

5. How many years have you been investing on low-risk investment products like bonds and large-company/blue-chip stocks, traditional funds composed of large-company/blue-chip stocks or bonds, or investment-linked insurance policy)?
   ________ years