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Abstract

The author proposed that consumers would increase their preference for a risky yet profitable portfolio after (vs. before) rendering a series of investment decisions. Engaging in an investment activity, consumers often make several decisions. For example, consumers may have to choose their investment amount, investment duration, and risk exposure. Because making such investment decisions demands mental effort and time, rendering a series of investment decisions is a laborious activity for consumers. As performing such an effortful activity can lead individuals to feel entitled to monetary rewards that match their commitment (Goswami and Urminsky 2016; Inzlicht and Schmeichel 2012; Inzlicht, Schmeichel, and Macrae 2014; Schmeichel, Harmon–Jones, and Harmon–Jones 2010), executing a series of investment decisions may motivate consumers to prefer a portfolio that offers greater investment returns, even when such returns entail greater financial risks.

Three experiments ($N = 248, 200, \text{ and } 324$) yielded results consistent with the hypothesis. In the experiments, the author induced participants to express their preference for the portfolio after (vs. before) rendering a series of investment decisions by arranging the portfolio decision at the bottom (vs. top) of the screens. To illustrate, participants read a scenario in which they visited a financial institution to open an IRA or an

investment fund. Then, participants responded to the items about their investment duration, investment amount, portfolio composition, etc. Since participants usually read the texts on a screen from top to bottom, arranging an item at the bottom (vs. top) of the screen would make participants to reply to the very item after (vs. before) answering the other items. As predicted, participants preferred risky yet lucrative portfolio when the item about investment portfolio was located at the bottom (vs. top) of the screen. This results indicated that participants increased their preference for a risky but profitable portfolio after (vs. before) rendering a series of investment decisions.

keywords : Financial Investment, Decision-Making,
Risk-Taking, Preferences, Effort

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1. Introduction

Even though economists view that individuals have established preferences before expressing them through actions, psychologists have argued that individuals' actions can create—not just reveal—preferences (see Ariely and Norton [2008] for review). A case in point is Festinger and Carlsmith's (1959) experiment about cognitive dissonance. By showing that participants adjust their preferences to their actions, the researchers unequivocally exhibited that preferences can be constructed by actions. Other studies have also supported the notion that individuals refer to their own behavior and then reflect such an observation on their preferences and subsequent decision-making (Bettman, Luce, and Payne 1998; Kahneman and Snell 1992; Payne, Bettman, and Johnson 1992; Slovic 1995). In line with the previous studies, the author demonstrated that the prior act of decision-making can affect individuals' preferences in the context of financial investment. Especially, the current paper focused on how prior decision-makings reshape consumers' preferences for an investment portfolio and, in turn, a subsequent portfolio choice.

Financial investment is a crucial part of consumer finance (Tufano 2009). In particular, the financial crisis of 2007–2008 has introduced financial investment to the epicenter of consumers lives. As the financial crisis has brought down the interest rates around the globe to the lowest level in the modern

history, consumers have been forced to invest in the financial market rather than deposit in savings account (Economist 2016; Murad 2013; World Bank 2016). For example, it became impossible for consumers in Japan, Switzerland, and Germany to earn interest earnings from their savings account because the interest rates of those countries even turned to negative interest rates (Kantchev, Whittall, and Inada 2016). Accordingly, more and more consumers are participating in the financial market, which in turn escalates the significance of exploring the factors affecting consumers' preference for an investment portfolio.

The author suggests that rendering a series of investment decisions can affect the preference for an investment portfolio. Executing a series of investment decisions is essential for financial investment because engaging in an investment activity often requires consumers to make several decisions related to their financial investment. For example, consumers may have to choose their investment amount, investment duration, and risk exposure. As an investment activity entails such various investment decisions, revealing the effect of making investment decisions can contribute to the understanding of consumers' financial investment. Thus, the paper investigated how rendering a series of investment decisions exerts influence on the preference for an investment portfolio.

In what follows, the author will discuss the theoretical backgrounds explaining how rendering a series of investment

decisions increase the preference for a risky but profitable portfolio. After reviewing theoretical backgrounds, the author presented the three experiments (Studies 1A, 1B, and 2) that yielded consistent results with the author's prediction. Finally, theoretical implications, practical implications, limitations, and plans for the future research were discussed.

2. Theoretical Backgrounds

Before delving into the theoretical backgrounds, two terms— “investment decisions” and “risky but lucrative portfolio” —ought to be articulated. First, *investment decisions* mean issues that need to be determined by consumers to conduct a financial investment. As consumers aim to advance their current funds from today until a later day through financial investments (Tufano 2009), they have to decide on how long they will hold their investment. In addition to this, how much they will invest in the financial market and to which assets they will allocate their capital should be decided by consumers as well. In the current paper, all issues that are relevant to consumers' investment are named investment decisions, and making decisions on such issues was termed *rendering* (or *executing*) *a series of investment decisions*.

Second, the author defined a *risky but lucrative* (or *profitable*) portfolio as a financial product or a combination of financial assets that possesses both higher financial risks and

greater profits as opposed to its alternatives. The definition of a risky yet lucrative portfolio can be clarified by comparing stocks with bonds. Since stocks offer a potential for greater earnings than bonds, they are more lucrative assets compared to bonds. However, as stocks do not guarantee predetermined interests as bonds do, investors should bear additional risks when they choose stocks over bonds. Hence, in the financial market that provides only stocks and bonds, the former become a risky yet profitable portfolio.

Generally, a risky yet profitable portfolio always exists in the financial market. As shown by various economic and financial theories (Fama 1995; Malkiel 2003; Merton 1973; Sharpe 1964), an investment portfolio cannot offer returns above the market average without extra financial risks¹⁾. Thus, individuals have to select between a risky yet profitable portfolio and a riskless but less profitable portfolio. Because individuals who choose the former over the latter willingly tolerate higher financial risks in exchange for greater investment earnings, selecting a risky yet lucrative portfolio can be regarded as a form of financial risk-taking behavior.

1) The term "financial risks" includes both risks, the prospect of losing money whose probabilities are known, and uncertainties, the prospect of losing money whose probabilities are unknown (Tversky and Fox 1995).

2.1. Rendering a Series of Investment Decisions Is an Effortful Activity

In this section, the author articulated why making rendering a series of investment decisions is arduous for consumers. First, by nature, decision-making is a laborious activity that demands cognitive effort and time (Shugan 1980; Simon and Newell 1971). In support of this view, Bettman, Johnson, and Payne (1990) demonstrated that decision-making consists of the elementary information processes (EIPs), such as acquiring information (READ), comparing alternatives (COMPARE), calculating the size of the differences of alternatives for an attribute (DIFFERENCE), and choosing a preferred alternative (CHOOSE). Then, they showed that engaging in each EIP increased participants' response time and self-reported effort, which implies that individuals have to invest their time and mental effort to make a decision.

Also, other studies revealed the association between decision-making and cognitive efforts. Sela and Berger (2012) showed that individuals put their efforts into trivial decisions as well as important decisions. Furthermore, Fennema and Kleinmuntz (1995) disclosed that people not only expended effort for decision-making but also anticipated that they have to expend effort for decision-making. In sum, decision-making requires decision-makers to invest cognitive effort and time in its processes regardless of its type. In the same vein, making an

investment decision will demand cognitive effort and time from consumers as other types of decision-making do.

Moreover, because of the complexity of financial products and the lack of financial illiteracy, making an investment decision would be more effortful compared to other types of decision-making. As Alan Greenspan (2005) pointed out, the increasing complexity of financial products requires consumers to "differentiate among a wide range of products, services, and providers of financial products" in order to manage their financial investment successfully. Nevertheless, consumers generally lack financial knowledge. For example, Lusardi and Mitchell (2011) conducted a survey asking three questions about elementary financial knowledge to 1,488 American adults. Even though the answer to each question was quite obvious, only 30.2% of the respondents got all the questions correct. In line with Lusardi and Mitchell's study, many other studies have discovered that most United States citizens are financially illiterate (Avard, Manton, English, and Walker 2005; Chen and Volpe 1998; Hilgert, Hogarth, and Beverly 2003). Hence, it seems safe to conclude that making an investment decision would be an especially arduous activity for many consumers.

Lastly, consumers often render a series of investment decisions rather than an investment decision when they invest their money in the financial market. For example, customers of IRAs have to decide on several issues such as a type of IRAs,

the dollar amount of each installment, and intervals between installments. Since making a single investment decision demands mental exertion because of the complexity of financial products and the lack of financial illiteracy, executing a series of investment decisions would be more laborious to consumers. To summarize, consumers are likely to perceive rendering a series of investment decisions as an effortful activity.

2.2. Consumers' Desire for Investment Returns May Increase After Rendering a Series of Investment Decisions

Then, how would consumers behave after engaging in a mentally laborious activity such as executing a series of investment decisions? Previous studies have shown that exerting excessive mental ability can result in impairment in physical performance (Marcora, Staiano, and Manning 2009), expression of prejudices (Muraven 2008), and impulsive purchases (Baumeister 2002). In this paper, the author focused on the two streams of studies— the studies of the effort—balancing account and the studies of the motivational account of ego—depletion —suggesting that performing an effortful activity stimulates individuals to want financial incentives (Goswami and Urminsky 2016; Hagger, Wood, Stiff, and Chatzisarantis 2010; Inzlicht and Schmeichel 2012; Inzlicht, Schmeichel, and Macrae 2014).

First, Goswami and Urminsky (2016) proposed the effort–balancing account, which suggests that individuals strive to find the balance between their efforts and financial incentives after expending effort for a laborious activity. To test their proposition, the researchers assigned participants to either the work task condition (i.e., doing effortful math problems) or the leisure task condition (i.e., watching video clips), both of which provided financial incentives contingent upon participants' performance. After the incentivized sessions, the participants in both conditions engaged in the identical task they conducted in the previous sessions without any financial rewards. In the non–incentivized sessions, the participants of the leisure task condition did not reduce their commitment to the task, whereas the participants of the work task condition momentarily decreased their commitment to the task.

The contrast between the two conditions demonstrated that financial rewards could be a significant motivator for individuals who had carried out an effortful activity. To illustrate, in Goswami and Urminsky's experiments, only the participants in the work task condition decreased their efforts in non–incentivized sessions. This results indicate that, after performing an effortful activity, individuals do not maintain their commitment if financial incentives are not provided. Put it in another way, monetary rewards can be a stimulus to individuals who have just conducted a laborious activity. In line with this,

financial rewards such as investment returns can work as a motivator for consumers who have rendered a series of investment decisions.

Second, studies of ego-depletion also indicate that mental exertion can lead individuals to urge financial rewards (see Inzlicht and Schmeichel [2012] and Inzlicht, Schmeichel, and Macrae [2014] for review). For instance, Schmeichel, Harmon-Jones, and Harmon-Jones (2010) showed that conducting laborious activities led individuals to seek monetary rewards. For example, participants became more sensitive to a dollar sign after writing an essay without using a or n. In other experiments, the researchers discovered that regulating emotions while watching video clips induce participants to increase betting behavior on the risky but lucrative option.

These results demonstrated individuals' tendency to strike an optimal balance between the pursuit of 'have-to' goals and the pursuit of 'want-to' goals (Inzlicht, Schmeichel, and Macrae 2014). As engaging in an effortful activity associates with have-to goals, individuals who have carried out an arduous activity would attempt to satisfy their want-to goals, such as attaining monetary rewards. Thus, previous studies of ego depletion connote that mental exertion can lead individuals to feel entitled to financial rewards that match their commitment.

Building on prior works, the author postulates that consumers who have made a series of investment decisions may

seek to reward their effort through investment returns. Because making investment decisions is a laborious activity that requires cognitive effort and time, consumers who have executed a series of investment decisions would feel they have conducted an effortful activity. Then, since consumers endeavor to balance their efforts by financial rewards, their desire for financial incentives increases after (vs. before) rendering a series of investment decisions, which consequently induces individuals to crave investment earnings. Supporting such a prediction, many studies have demonstrated that the wants of monetary rewards elevate the desire for future earnings (Duclos, Wan, and Jiang 2013; Schmeichel, Harmon–Jones, and Harmon–Jones 2010). In conclusion, the increase in desire for monetary rewards after rendering a series of investment decisions can lead consumers to aggressively pursue investment returns.

2.3. Consumers Can Prefer Risky yet Lucrative Portfolio After (vs. Before) Rendering a Series of Investment Decisions

An aggressive pursuit of investment earnings after making investment decisions can stimulate consumers to prefer a lucrative yet risky portfolio because it possesses a potential for attaining greater profits compared to the other options. As it is defined in the head of the theoretical backgrounds, a risky but

profitable portfolio has both a potential to gain greater investment profits and higher financial risks. Thus, if consumers dare to bear financial risks, the increase in desire for monetary rewards will promote consumers to favor a risky yet lucrative portfolio over a riskless but less lucrative portfolio.

Many studies of financial risk-taking provided evidence supporting the notion that an active pursuit of investment returns can stimulate consumers to prefer a profitable yet risky portfolio. For example, Duclos, Wan, and Jiang (2013) disclosed that the increase in desire for financial resources after social exclusion induced participants to bet on risky but lucrative options. Also, individuals who tend to appreciate monetary rewards more than average individuals exhibited higher degree of sensation seeking (Troisi, Christopher, and Marek 2006), which predicts individuals' financial risk-taking (Zabel, Christopher, Marek, Wieth, and Carlson 2009). In addition, inducing participants to be sensitive to financial gains (vs. losses) motivated participants to bear more financial risks (Zhou and Pham 2004). Since choosing a risky but profitable portfolio is a form of financial risk-taking behavior, above studies back the notion that individuals who want to reward themselves with financial incentives can increase their preference for a lucrative yet risky portfolio.

Altogether, the author hypothesizes that rendering a series of investment decisions, by elevating the desire for

monetary rewards, can stimulate consumers to prefer a risky yet lucrative portfolio. Executing a series of investment decisions is a laborious activity for consumers as making investment decisions especially demands cognitive efforts and time, which, in turn, can prompt consumers to seek financial incentives (Goswami and Urminsky 2016; Inzlicht and Schmeichel 2012; Inzlicht, Schmeichel, and Macrae 2014). Hence, consumers who have rendered a series of investment decisions would prefer a risky yet lucrative portfolio because consumers who actively seek monetary rewards dare to bear risks in exchange for profits (Duclos, Wan, and Jiang 2013; Zhou and Pham 2004). Therefore, consumers would favor a risky but profitable portfolio over riskless but less profitable portfolio after (vs. before) executing a series of investment decisions. Put it formally,

H1: Consumers would increase their preference for a risky yet profitable portfolio after (vs. before) rendering a series of investment decisions.

To test the hypothesis, the author conducted three experiments on Amazon Mechanical Turk. In the experiments, the locations of the portfolio decision were manipulated to make participants to express their preference for the portfolio either after or before executing a series of investment decisions. In particular, Studies 1A and 1B analyzed the main effect of making investment

decisions. Study 2 tested not only the main effect but also the measure that prevents individuals to increase their preference for a risky yet lucrative portfolio after rendering a series of investment decisions.

3. Study 1

Study 1 aimed to examine whether participants increase their preference for a risky yet lucrative portfolio after (vs. before) rendering a series of investment decisions. To accomplish the goal, the researcher had to make participants express their preference either after or before executing a series of investment decisions depending on the experimental conditions. When manipulating the timing of preference expression, the author attended to people's response tendency. As people usually read items on a screen from top to bottom, deploying an item at the top of the screen would lead them to respond to the very item at the beginning. Conversely, if the item was located at the bottom of the screen, participants would reply to the very item at the end.

Following this line of logic, the researcher devised two experimental conditions. In the control condition, as the item about investment portfolio was located at the top of the screen, participants expressed their portfolio preference before rendering a series of investment decisions. In contrast, participants in the treatment condition revealed their portfolio preference after

executing a series of investment decisions because the item about investment portfolio was arranged at the bottom of the screen. In brief, participants in the control condition naturally exhibited their portfolio preference before making investment decisions, whereas participants in the treatment condition showed their portfolio preference after rendering a series of investment decisions. Thus, if the hypothesis is correct, participants in the treatment condition will indicate higher preference for a risky yet lucrative portfolio compared to those in the control condition.

3.1. Study 1A: Investment Program

In Study 1A, the researcher checked the hypothesis by observing whether participants increase their preference for a risky yet lucrative investment program after (vs. before) executing a series of investment decisions. Participants read a scenario in which they visited a financial institution to enroll in an investment program that manages their money for a predetermined period. As they selected their investment portfolio either before or after executing a series of investment decisions depending on the experimental conditions (control vs. treatment), the researcher can assess the influence of making investment decisions on preference for a risky yet profitable portfolio.

Method

Participants. Two hundred and forty-eight residents in

the United States ($M_{age} = 37.72$ [18, 71], 135 females) were invited to the study via Amazon Mechanical Turks (M-Turk). They received monetary rewards for their participation.

Procedures. All participants were asked to imagine the situation in which they visited a leading financial institution to enroll in an investment program called Systematic Investment Plan (SIP), which manages customers' money for a designated amount of time. Then, the participants were requested to customize the items of their SIP. The SIP were comprised of five items: investment type (i.e., safe asset building vs. aggressive profit seeking), amount per installment (i.e., from \$200 to \$1,000), frequency of installments (i.e., monthly vs. quarterly), date of installment (i.e., 1st, 10th, 20th, and 25th of a month), and investment duration (i.e., from a year to five years).

Among the five items, the item about investment type served as a dependent variable because the preference for risky yet lucrative portfolio could be detected by responding to the item. To articulate, participants would choose "safe asset building" if they like a riskless portfolio. In contrast, they would pick "aggressive profit seeking" if they favor a portfolio with higher risks and greater earnings. Thus, the author assessed the preference for a risky yet profitable portfolio by measuring participants' choice of "aggressive profit seeking".

The researcher assigned participants to the two conditions. In the control condition, the item about investment

type was presented on the top of the screen. As participants generally respond to documents from the top to the bottom, the participants in the control condition would decide on the investment type before making the other investment decisions. On the other hand, the treatment condition displayed the item about the investment type at the bottom of the screen, which thus made the participants reply to the other items first and then the item about the investment type. The sequence of the items other than the item about the investment type was identical across the conditions. After finishing the main session, all participants responded to the questions regarding their demographic information.

Results and Discussions

Since the answer to the dependent variable was a binary choice, the researcher performed chi-square independent test to analyze whether the participants' selection of "aggressive profit seeking" differs depending on the conditions. The test yielded a significant effect of the treatment ($P_{\text{control}} = 28.9\%$, $P_{\text{treatment}} = 40.9\%$; $\chi^2=3.93$, $p = .05$). Also, the pattern of the results was consistent with the hypothesis (Figure 1). As predicted, the participants in the treatment condition preferred the risky but lucrative portfolio (i.e., aggressive profit seeking) compared to the riskless but less lucrative portfolio (i.e., safe asset building) compared to those in the control condition.

[Insert Figure 1 Here]

To check whether the choices on the other items exert influence on the choice of the item about investment type, the author conducted logistic regressions after entering the choices on all items as covariates. Although the choice of the date of installment showed significant relationship with the dependent variable ($p = .05$), the effect of the treatment on the dependent variable remained significant ($\beta = .59$, $z = 2.14$, $p = .03$). As the choices on the other items did not cancel out the effect of the treatment on the dependent variables across the studies, it will not be covered in the following analyses.

Study 1A demonstrated that rendering a series of investment decisions stimulated participants to prefer a risky yet profitable portfolio. Furthermore, without changing the other aspects of the investment context, the researcher attained the predicted results by modifying the sequence of investment decisions. In Study 1B, the author replicated the effect found in Study 1A and secure ecological validity through employing a more realistic financial product, Individual Retirement Account (IRA).

3.2. Study 1B: Individual Retirement Saving

In Study 1B, the fictional investment program used in Study 1A, Special Investment Program, was replaced by Individual Retirement Account. Since IRA is one of the most

well-known financial products, employing IRA would reject the possible questions about the lack of ecological validity in Study 1A. Additionally, the researcher deployed the General Risk-Taking Tendency scale (Nicholson et al. 2005; 5-point scale, six items) at the end of the survey to explore how the effect of rendering a series of investment decisions interacts with individuals' risk-taking propensity.

Method

Participants. Two hundred respondents from Amazon M-Turk (119 females; $M_{age} = 34.50$ [18, 68]) participated in the experiment. The researcher limited the location of participants to the United States of America.

Procedures. The design of Study 1B was almost identical to Study 1A except that IRA was employed rather than the fictional investment program. In Study 1B, participants were asked to customized four items to enroll in IRA. The item assessing participants' preference for a risky yet lucrative portfolio was named investment direction, and participants indicated the proportion of risky but more profitable assets (i.e., from 0% to 100%) on the item. Since the proportion shows how much participants' like risky but more profitable assets, the author concluded that the increase in the proportion can reveal participants' preference for a risky but profitable portfolio.

The other three items asked participants of their

investment amount (i.e., from 3% to 18% of their annual salary), frequency of installments (i.e., monthly vs. quarterly), and intention to use Automatic Clearing House (ACH; i.e., Yes vs. No). The researcher randomly assigned participants to the control condition or the treatment condition. Like Study 1A, the participants in the control condition first saw the item about the proportion of risky but more profitable assets. On the contrary, the item was located at the bottom of the screen in the treatment condition. The sequence of the other three items was identical in both the control condition and the treatment condition.

After finishing the main session, all participants answered to the questions about general risk-taking propensity, which consists of six items (e.g., financial risks, health risks, and social risks, etc.; 5-point Likert scale, 1[strongly disagree] – 5[strongly agree]). Finally, they replied to the questions about demographic information.

Results and Discussions

The results of Study 1B were similar to Study 1A. Although independent sample t-test comparing the two conditions yielded a marginally significant result ($M_{\text{control}} = 33.0\%$, $M_{\text{treatment}} = 38.6\%$; $t = -1.71$, $p = .09$), the proportion of risky but more profitable assets was high in the treatment condition, which means that participants' preference for a risky

yet lucrative portfolio increased by rendering a series of investment decisions. Maybe, participants in Study 1B would feel rendering a series of investment decisions to be less laborious compared to those in Study 1A because Study 1B had only four investment decisions, which was less than five investment decisions in Study 1A.

[Insert Figure 2 Here]

Furthermore, the main effect of the manipulation reached a significant level ($\beta_{\text{Treatment}} = 1.32$, $t = 2.48$, $p = .01$) after participants' general risk-taking propensity and the interaction term between the manipulation and risk-taking propensity were added into the regression. The regression analysis also revealed a positive association between general risk-taking propensity and the proportion of risky but more profitable assets ($\beta_{\text{Risk Propensity}} = 0.73$, $t = 4.14$, $p < .01$), which indicated that the scale effectively measured participants' risk-taking propensity. The interaction between the treatment and risk-taking propensity was also significant ($\beta_{\text{Interaction}} = -.51$, $t = -2.13$, $p = .03$; Figure 2). To be specific, assigning the portfolio decision at the bottom of the screens enhanced the preference for a risky yet profitable portfolio only in the participants with low risk-taking propensity. Participants with high risk-taking propensity, however, was not influenced by the treatment. The discovered interaction will be discussed in the General Discussions.

To summarize, both studies 1A and 1B demonstrated that

individuals who decided on the portfolio after (vs. before) rendering a series of investment decisions preferred a risky but profitable portfolio. The results were aligned with the hypothesis that making investment decisions, by inducing individuals to feel entitled to financial rewards that match their commitment, would elevate the preference for a risky yet lucrative portfolio.

4. Study 2: The Effect of a Preemptive Information Disclosure

Studies 1A and 1B demonstrated that executing a series of investment decisions can instigate consumers to favor a risky yet profitable portfolio over riskless but less profitable portfolio. Although liking a risky yet lucrative portfolio itself is not vice or virtue, it can be harmful for general consumers who do not understand the concept of financial risks (Avard, Manton, English, and Walker 2005; Chen and Volpe 1998). In particular, Lusardi and Mitchell's (2011) study disclosed that a lot of American consumers did not recognize the results of financial risk-taking. Moreover, even consumers high in financial literacy may overlook the danger of financial risk-taking because the effect of financial education decays over time (Fernandes, Lynch, and Netemeyer 2014). Therefore, an intervention that can effectively regulate consumers' financial risk-taking should be devised.

In Study 2, the author proposed a *preemptive information disclosure* as a measure to mitigate the effect of making investment decisions on consumers' financial risk-taking. Studies of anchoring demonstrated that making prior preferences accessible can work as an anchor to individuals (Chapman and Johnson 1999; Greenwald, Carnot, Beach, and Young 1987). Based on the previous research, the author proposed that a preemptive information disclosure, by virtue of reminding consumers' original risk preferences, may serve as an anchor as well.

Previously, the author theorized that consumers become favorable to a lucrative yet risky portfolio after rendering a series of investment decisions because they want to reward their prior commitment with investment earnings. However, if a preemptive information disclosure creates a situation in which consumers' risk preference before executing a series of investment decisions becomes accessible, consumers will be less influenced by rendering a series of investment decisions. To illustrate, if consumers with low risk-taking propensity remember their prior risk preferences, they would be reluctant to bear additional financial risks even after executing a series of investment decisions. Study 2 checked whether a preemptive information disclosure attenuates the increase in the preference for a risky yet lucrative portfolio after rendering a series of investment decisions.

Method

Participants. The participants were three hundred and twenty-four Amazon M-Turkers who reside in the United States. They enrolled in the experiment for monetary compensation. Their demographic composition was similar to the previous studies (172 females, 152 males; $M_{\text{age}} = 33.77$ [19, 72]).

Procedure. The study employed a 2 (the location of portfolio decision: top [control] vs. bottom [treatment]) x 2 (the presence of preemptive information disclosure: no disclosure vs. disclosure) between-subjects design. The procedure of Study 2 was almost identical to Studies 1A and 1B except for two aspects. First, in Study 2, the participants read the scenario in which they were going to open a mutual fund instead of IRA or a fictional investment program. The participants had to customize the five items of the investment fund: investment amount (i.e., from \$200 to \$1,000), the number of installments (i.e., a single time vs. multiple times), the date of installment (i.e., today vs. within this week), investment duration (i.e., from one year to five years), and investment direction (i.e., safe but less profitable assets vs. risky but more profitable assets). Among the items above, the investment direction served as a dependent variable. If participants prefer a risky yet profitable portfolio, they would choose "risky but more profitable assets" over "safe but less profitable assets."

Second, the preemptive information disclosure was included in Study 2. The information disclosure briefly described all items of the document and their options. Since the information disclosure reminds participants' original risk preferences while reading the disclosure, it might create an anchor to participants, which in turn prevents making investment decisions to increase the preference for a risky yet lucrative portfolio.

Results and Discussion

As the dependent variable has binary options, the researcher conducted logistic regressions whose predictors— the location of the portfolio decision (top vs. bottom) and the presence of preemptive information disclosure (no disclosure vs. disclosure) —were both binary. First, the main effect of the location of the portfolio decision reached a significant level ($P_{\text{control}} = 37.04\%$, $P_{\text{treatment}} = 56.79\%$; $\beta_{\text{Treatment}} = 1.24$, $z = 3.74$, $p < .001$). Like Studies 1A and 1B, the participants pursue the risky but lucrative portfolio after rendering a series of investment decisions. In contrast, the information disclosure did not yield a significant result ($P_{\text{no disclosure}} = 50.00\%$, $P_{\text{disclosure}} = 43.90\%$; $\beta_{\text{Disclosure}} = 0.17$, $z = 0.53$, $p = .60$).

Finally, the analysis discovered that the predicted interaction between the two factors was marginally significant ($\beta_{\text{Interaction}} = -0.84$, $t = -1.84$, $p = .07$). In particular, the

pattern of the interaction was consistent with the author's forecast. While participants who did not receive information disclosure increased the selection of the risky yet lucrative portfolio after executing a series of investment decisions, participants who received information disclosure did not display such a pattern (Figure 3). This results indicate that the preemptive information disclosure mitigated the increase in the preference for a risky but profitable portfolio after rendering a series of investment decisions.

[Insert Figure 3 Here]

Study 2 replicated the result that making investment decisions induces participants to favor a profitable but risky portfolio over a less profitable but riskless portfolio. This result is consistent with the hypothesis and the results of Studies 1A and 1B. Furthermore, the preemptive information disclosure attenuated the influence of executing a series of investment decisions on the preference for a risky yet lucrative portfolio.

5. General Discussions

The author postulated that consumers may favor a profitable but risky portfolio over a less profitable but riskless portfolio after (vs. before) rendering a series of investment decisions. The three experiments yielded the results aligned with the hypothesis. First, Studies 1A and 1B demonstrated that participants pursue a risky yet lucrative portfolio if the portfolio

decision was made after executing other investment decisions. This indicated that, as the author hypothesized, making investment decisions induce participants to crave financial rewards, which in turn causes them to prefer a risky yet profitable portfolio.

Study 2 replicated the results in Studies 1A and 1B. In addition to this, Study 2 revealed that the preemptive information disclosure could be a way to counteract the influence of making investment decisions on the preference for a risky but lucrative portfolio. To articulate, even though it was marginally significant, the preemptive information disclosure prevented participants from increasing their preference for a risky yet profitable portfolio by making the risk preferences before rendering a series of investment decisions accessible.

The author also wants to make another point regarding an experimental result in Study 1B. In Study 1B, rendering investment decisions only affected the participants with low risk-taking propensity. Although empirical evidence to explain such a pattern has not been found, the author projected that a cap in financial risk-taking might exist, which in turn blocked individuals with high risk-taking propensity to increase their preference for a profitable but risky investment even after executing a series of investment decisions.

Moreover, the present research implies that experienced efforts and anticipated efforts can result in opposite behaviors.

To be specific, Kivetz (2003) showed that consumers avoided risky options if participants expected that they should invest their effort in the tasks. On the contrary, Studies 1A, 1B, and 2 disclosed that participants' preference for risky financial products were elevated after conducting a laborious activity. Future research can delve into why experienced efforts and anticipated efforts exert distinctive influences on individuals' risk preferences.

The current paper also has practical implications. As Tufano (2009) suggested, investment activity constitutes a major part of consumer finance. Thus, restraining unintended financial risk-taking is crucial for policy makers and consumers. The preemptive information disclosure, the measure proposed in the paper, can be a measure to prevent consumers' financial risk-taking behavior that are caused by executing a series of investment decisions. In sum, the current paper provided consumers with both the caution about the influence of rendering a series of investment decisions and the countermeasure to mitigate it.

Nevertheless, the present research has limitations. Because experiments were conducted only on Amazon Mechanical Turk, the sample characteristics can be biased, and the participants might not involve in the experiments as they conduct fictional investment. The lack of measures assessing participants' effort also dilutes the theoretical account of the

paper because the link between rendering a series of investment decisions and the preference for a risky yet lucrative portfolio was not thoroughly investigated. Thus, the author plans to conduct studies that systematically measure participants' effort in making investment decisions.

In the future research, the author expects to answer the remained questions and further clarify the underlying mechanisms of the association between making investment decisions and financial risk-taking.

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7. Appendix

7.1. Appendix A: Figure 1

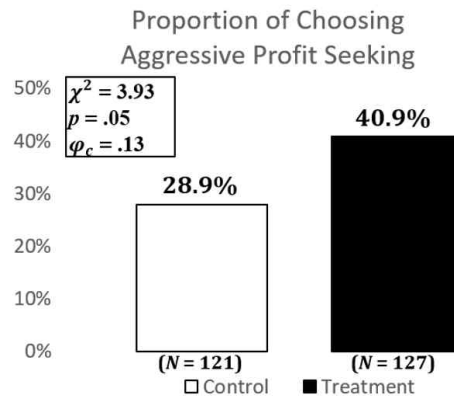


Figure 1. The Proportion of Choosing “Aggressive Profit Seeking”. The participants in the treatment condition favored “aggressive profit seeking” more compared to those in the control condition.

7.2. Appendix B: Figure 2

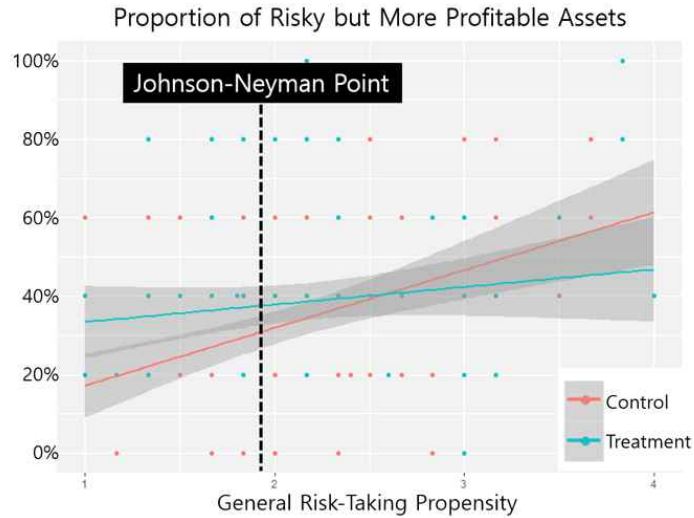


Figure 2. The Proportion of Risky but More Profitable Assets. Assigning the investment direction decision at the bottom increased the preferences to a risky yet lucrative portfolio only in the participants with low risk-taking propensity. On the contrary, the same manipulation did not exert influence over the preferences to a risky yet lucrative portfolio in the participants with high risk-taking propensity.

7.3. Appendix C: Figure 3

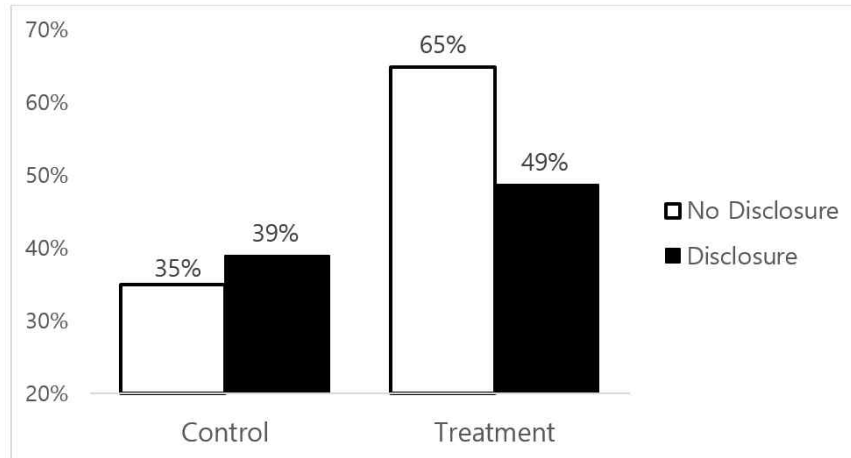


Figure 3. The Proportion of Selecting Risky but More Profitable Assets. While rendering a series increased participants' preference to the risky yet lucrative assets in the no disclosure condition, it did not affect participants in the disclosure condition.

요약(국문초록)

선택의 순서가 소비자들의 금융상품 결정에 미치는 영향

- 리스크 관련 결정을 중심으로 -

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본 논문에서는 소비자들이 (일련의 투자 관련 선택행위를 수행하기 전보다) 일련의 투자 관련 선택행위를 수행한 뒤에 수익률은 높지만 리스크가 더 큰 포트폴리오에 대한 선호가 증가할 것이라 제안한다. 금융시장에 투자할 때 소비자들은 다양한 결정을 내려야 한다. 예를 들어, 투자 시 소비자들은 투자금액, 투자기간, 리스크 노출 정도 등을 결정해야 한다. 그리고 이러한 결정들을 내리는 과정은 노력과 시간을 요하기 때문에 일련의 투자 관련 선택행위를 수행하는 것은 지난하고 힘든 활동이다. 그런데 여기서 주목할 점은 지난하고 힘든 활동을 수행한 소비자들이 자신들의 노력에 상응하는 만큼의 금전적 보상을 원하게 된다는 것이다 (Goswami and Urminsky 2016; Inzlicht and Schmeichel 2012; Inzlicht, Schmeichel, and Macrae 2014; Schmeichel, Harmon-Jones, and Harmon-Jones 2010). 따라서 일련의 투자 관

런 선택행위를 수행하는 것은 소비자들로 하여금 비록 리스크가 크더라도 더 큰 이익을 가져다 줄 수 있는 포트폴리오를 선호하게 할 수 있다.

본 연구에서 진행된 3개의 실험들은 이러한 가설과 일치하는 결과를 보였다. 실험에서 연구자는 포트폴리오에 대한 문항을 화면의 최하단(vs. 최상단)에 배치함으로써 참여자들이 일련의 투자 관련 선택행위를 수행한 뒤에(vs. 수행하기 전에) 포트폴리오에 대한 선호를 표현하게 했다. 일반적으로 참여자들이 화면을 위에서부터 아래로 읽는다는 점을 고려해볼 때 이러한 배치는 참여자들의 포트폴리오 선호 표시 시점을 투자 관련 선택행위를 수행한 뒤 혹은 수행하기 전으로 효과적으로 구분할 것이다. 예상대로 포트폴리오에 대한 문항이 화면의 최하단(vs. 최상단)에 존재할 경우, 참여자들은 수익률은 높지만 리스크가 더 큰 포트폴리오를 선호하였다. 이러한 결과는 일련의 투자 관련 선택행위를 수행한 뒤에(vs. 수행하기 전에) 수익률은 높지만 리스크가 더 큰 포트폴리오에 대한 선호가 증가하였음을 의미한다.

주요어 : 투자, 의사결정, 리스크, 선호, 노력

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