

# Do Different Sources of Information Matter in the Investment Decision?: Some Evidence from Experiment

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## Abstract

This study aims to test and compare the effect of information references on trust and investment decisions. This research recruited 129 samples from ages 18 to 30. The research conducted a financial experiment by dividing samples into one control group and three treatment groups. Participants in treatment groups were exposed to different information references, namely the official agenda, social media, and face-to-face advisor. The experiment verified their investment value and tested their trust in the information. Findings suggest that social media information did not lead to trust and investment. Participants' behaviors, especially trust, are still prolonged to traditional information (an official data and investment consultant). Official information induced them to trust and invest, while face-to-face advising induced their trust but not investment. This study is a behavioral economics model that reflects people's decisions. The study found that financial institutions continue to perform well and guide investments for people, especially at a specific age. The researchers recommend that the policymaker should be taken into account to prevent and screen information thoroughly for the benefit of people in the future.

**KEYWORDS:** Investment decision, Social media, Information, Trust

## 1 INTRODUCTION

The internet revolution has caused a dramatic change in how we receive information - news, data, and knowledge penetrate every bit of our daily life. According to a, We Are Social (WAS) report, about 4.54 billion people worldwide have access to the internet, representing 59% of the world population in 2020. Until recently, humans have only interacted with each other through meetings, face-to-face contact, and phone discussions. Internet technology has replaced these communication methods (Cappella, 2001). Ways for us to contact each other have increased tremendously, which has caused a massive increase in information sources available to people. These changes have proved to be a double-edged sword; At the same time, reliable information is now easier to access fake news, gossip, and social media information also causes delusion in less discerning media consumers. These harmful sources can blind people to risks generally understood by those who avoid such sources. Using such information

may work against the interests and opportunities of the user and cause a broader negative impact on society - for example, by causing people to neglect reasonable decisions they would have otherwise. Chavanayarn (2014) conducted a survey and found that 80% of her subjects blindly trusted the news and information from social media, while only 20% double-checked before judging and accepting the information. An information source's credibility's effect on an individual's perception is still dubious, especially when making a rational decision. This point is something that people should be aware of to avoid negative consequences. Some complex decisions, such as investment decisions, need sophisticated and objective analysis. However, audiences familiar with or are experts in the field can comprehend such data, while amateurs or ordinary investors might not.

Previous studies show that retail investors tend to rely heavily on advice from their financial advisors. For example, Hackethal et al. (2012) studied German retail investors' behavior and concluded that customers less knowledgeable regarding finance are more likely than others to rely on advice. However, there needs to be evidence confirming that financial advisors make a superior return to those who are non-experts (Bodnaruk & Simonov, 2015).

Information from experts is undeniably essential to build trust (Skvarciany & Jurevičienė, 2017). Making judgments on whether information sources are trustworthy is a natural characteristic of humans that can be traced to the neurobiological structure and activity of the human brain (McKnight & Chervany, 1996). Human learning is partly observation or imitation from the model, either a living organism or non-living substances/representations (such as characters in movies, cartoon pictures, or books (Bandura et al., 1977)). Social media is a non-living substance, enabling the learning process through various channels rather than learning from one living organism.

Online media dramatically expands the scope of human communication worldwide, with versatile applications enhancing people's ability to share and exchange information, experiences, stories, articles, pictures, and videos. Currently, it is not only general information we can find on social media but also data and public relations in finance, investment, and other related policies. This has led researchers to question which sources have more potential than others to influence and sway people's investment decisions—a comparison between presenting information through traditional forms with presentations through social media.

Previous studies conducting decision experiments in the investment sector have widely sought to investigate risk-taking behavior. Bosman and Van (2001) set up their investment game to investigate participants' decisions in risky projects. Even though the investment game was intentionally framed as neutrally as possible, avoiding suggestive terms such as investment or global risk, they found that most of the subjects (75%) still appeared to be risk-averse in the experiment, as they would invest only a part of their working money on risky projects. The other 25% of the subjects were either risk-neutral or risk-seeking. And Charness and Gneezy (2012) investigated the difference in risk-taking behavior through the investment game. They found a consistent result that women invest less, and thus appear to be more financially risk-averse than men.

The approach taken in this study is different in that the researcher has designed the experiment to observe and compare subjects' investment decisions as responses to external stimuli. Different media interventions have been generated to facilitate opportunities to gauge the subjects' perception while receiving information from different sources, namely

the official agenda, social media channels, and face-to-face advising. The credibility and trust formation can be examined by comparing the investment decisions between participants receiving information from the three different sources with the control group, who will not be exposed to any intervention. This research is specifically aimed at people aged 18 to 30 years. In Thailand, this age group comprises 28.9% of the population, or almost a third of Thailand (Thailand Board of investment, 2021). They are an essential demographic in the country's future development and will become the leading force in society: economic roles and social drives. Furthermore, because most of them are social media users (about 96 percent (ETDA Thailand,2018)), the researcher sees the importance of understanding the behavior of people in this age group and has thus chosen them for study. Whether the risk-taking behavior of people can be affected by different kinds of sources and whether the traditional platform is still sustainable in the present era or exceeds/lags behind social media platforms will be investigated.

## **2 RESEARCH OBJECTIVE**

This study seeks to test/compare trust and investment levels under different kinds of reference intervention. The experimental groups include an official agenda, social media, and face-to-face advising

## **3 LITERTURE REVIEW**

### **3.1 Risk**

The "Risk" in the macroeconomic perspective refers to the possibility that changes in macroeconomic conditions will negatively impact a company or investment. For instance, political instability or exchange rate fluctuations can impact losses or gains. Investment is one of the critical variables for economic growth at both macro and micro levels. However, investing always comes with risks, usually the most difficult to predict. Investment risk can be defined as the probability or likelihood of losses relative to the expected return on any particular investment. Risk is an essential component in the assessment of the prospects of an investment. Most investors, while investing, consider less risk as favorable. The lesser the investment risk, the more lucrative the investment is (Chong, 2004).

On the microeconomics side, the economists described people's risk and choices behavior through empirical studies. Risk behavior is consciously or unconsciously controlled behaviors with perceived uncertainty about outcomes, possible benefits, and costs for the physical, economic, or psychosocial well-being of oneself or others (Trimpop,1994). Von Neumann–Morgenstern's utility function is an attachment of the theory of consumer preferences that integrates a theory of behavior toward risk. It shows that when a consumer is faced with a choice of items or outcomes subject to various circumstances, the optimal decision will be the one that maximizes the expected value of the utility (i.e., satisfaction) emanating from the choice made. The expected value is the sum of the products of the various utilities and their associated probabilities. The consumer is expected to be able to rank the items or outcomes in terms of preference, but their probability of materializing will affect the expected value. The von Neumann–Morgenstern utility function can explain risk-averse, risk-neutral, and

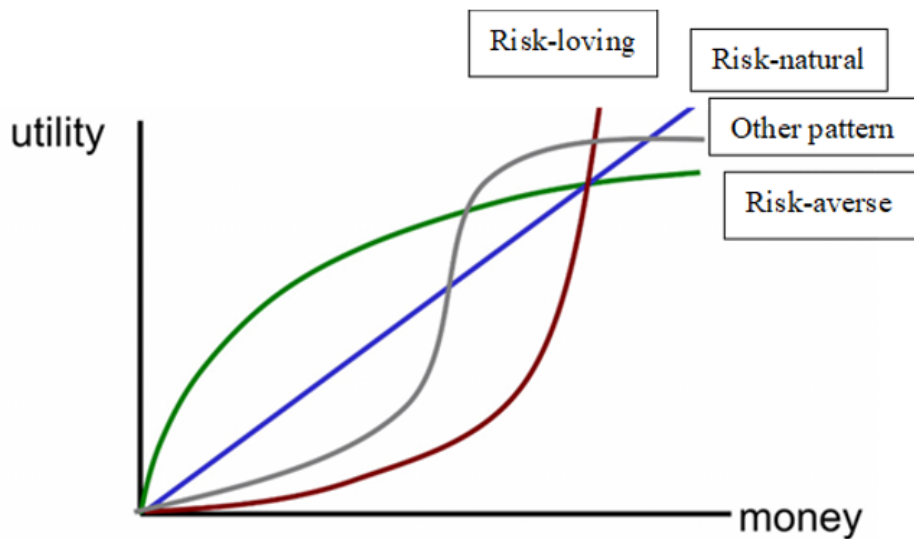
risk-loving behavior. For example, a firm might launch a project in one year with individual probabilities for three possible payoffs of \$10, \$20, or \$30; those probabilities are 20 percent, 50 percent, and 30 percent. Thus, expected payoff from the project would be  $\$10(0.2) + \$20(0.5) + \$30(0.3) = \$21$ . Next year, the firm might relaunch the same project. However, the respective probabilities for the payoffs change to 25, 40, and 35 percent. It is uncomplicated to demonstrate that the expected payoff is still \$21. In other words, nothing has changed. It is also true that the probabilities of the lowest and highest payoffs rose at the expense of the middle one, which means there is more variance (or risk) associated with the possible payoffs. (Prokop, 2016).

Regarding Tvesky and Kahneman (1981) described that humans tend to have a loss-averse behavior; since individuals dislike losses more than equivalent gains, they are more willing to take risks to avoid a loss. From the expected utility theory perspective, we can categorize all economic agents into three categories: Risk-averse, Risk neutral, and Risk seeking (or loving), as shown in figure1. Risk-averse - If the income expectation is equal, this group will like stable choices more than risky ones. Risk-averse people think the loss is more important than the benefit of the Risk. The utility function graph is concave (green line), which means if one draws a line connecting any two points on the curve, the line will lie strictly below the curve. Moreover, the utility is constantly increasing, although at a decreasing rate—this feature of the utility function is called diminishing marginal utility. Risk loving-the individual decision is the optimal choice for them. They are more satisfied with the Risk than an absolute choice. The utility function is convex (brown line), increasing marginal utility at an increasing rate. The curve lies strictly below any line joining two points on the curve. It shows that the greater the individual's level of wealth, the higher the utility when an additional benefit is given. Risk natural- This group will not distinguish between confident and risky choices with the same expected income situation. The marginal utility of income is constant (blue line). Finally, the complicated pattern with varying marginal utility is neither risk-averse nor risk-loving (gray line), so it has been called the "other pattern."

The researchers have employed the concept of risk as described above to set the experiment conditions and specify the participants. In the classifying method, the researcher will use the questionnaire applied from previous evidence and risk-taking categories to classify the participants' initial types of risk behavior in the experiment.

### 3.2 Trust

According to Neeley (2013), the academic definition of trust is one's willingness to embrace a group of strangers' advice because they believe the strangers are correctly informed, tell them the facts, and have their best interest at heart. It all depends on (1) one's identity, (2) one's position in relation to the group of strangers, and (3) what topic is being discussed. When we trust someone, their creativity or thinking can benefit us (Dasgupta & Gambetta, 1988). Trust and trustworthiness were generally observable across societies. Reciprocity exists as a crucial element of human relationships and behavior, and this is the rationale as to why many people are willing to trust an anonymous counterpart (Berg et al., 1995). Trust and trustworthiness increase when individuals are more intimate, but decline when allies come from different social groups, such as other nationalities or races.



**Figure 1:** *The categories of risk behaviors in all economics agents*

Furthermore, high-status individuals gain more trustworthiness than others (Glaeser et al., 2000). Trust influences a relationship's commitment. Relationship commitment is the willingness to invest financial, physical, or relationship-based resources in a relationship (Morgan et al., 1994). A retail investor with incomplete information might make decisions based on the most trustworthy information on the market while in a fluctuating financial market situation, even when this credible source provides imperfect information (Bikhchandani et al., 1992). Because accessing the most practical information is more costly, following other investors or advisors is the most comfortable way to reduce costs (Gleason et al., 2004). Bachmann et al. (2015) found that even if controlling for the investor's demographic conditions, the demand for financial advice is positively related to investment capability. Investors who can less avoid investment loss are significantly more likely to make investment decisions autonomously. In contrast, investors with higher investment capability are significantly more likely to delegate decisions to advisors. This means that trust in an expert's decisions may lead to herding behavior in the financial market, causing investors to override their own rationality (Christie and Huang, 1995).

Trust in economics explains a difference between actual human behavior and behavior that can be explained by the individual's desire to maximize utility. In economic terms, trust can explain the difference between the Nash and observed equilibrium. Such a definition can be applied as a lens for individuals and societies. Trust is also seen as an economic lubricant, reducing the cost of transactions between parties, enabling new forms of cooperation, and furthering business activities, employment, and prosperity (Morgan and Hunt, 1994). This observation created significant interest in considering trust as a form of social capital and has led to research into a closer understanding of the process of creation and distribution of such capital. It has been claimed that a higher level of social trust is positively correlated with economic development. Even though the original concept of 'high trust' and 'low trust' societies may not necessarily hold, it has been widely accepted and demonstrated that social

trust benefits the economy and that a low level of trust inhibits economic growth (Zak and Knack, 2001).

This study uses the concept of trust as an indicator to measure the reliability of a data source-collecting data from participants after the experiment is completed by questionnaire. When analyzed, it can explain which sources could influence people.

### 3.3 Framing effect

The framing effect is a cognitive bias where people make choices based on whether the options present a positive or negative impact (Plous, 1993). The concept of cognitive biases was first introduced by Kahneman and Tversky (1972) as errors in judgment, some related to memory and other problems. Cognitive biases like heuristic thinking, overconfidence, anchoring, and confirmation biases significantly affect investment decision-making (Hoffmann and Post, 2016). Similarly, Saadatzaheh et al. (2021) showed that, except for severe bias, all components of self-confidence, conservatism, ambiguity, mental accounting, stress, behavioral disorder, and eventfulness (retrospective) affected the behavior of investors.

The framing effect describes choices as commands of a positive or negative perspective of the same decision. Individual choices can be influenced by how alternatives are framed. For example, when people buy larger-sized dresses while the seller advises them that it is not fitted to them, even though they would normally choose a smaller size. He (2020) investigates the framing effect of tax-transfer systems on work effort decisions. And devised two theoretically equivalent treatment-the redistributive tax and the redistributive transfer treatment-and studied subjects' work effort choices in a novel public goods experiment. They found that subjects chose higher effort levels when redistribution occurred via transfers than taxes. Interestingly, the treatment effect was more prominent among those with lower cognitive abilities and those who judged the tax-transfer system unfair.

Moreover, past evidence has shown that the individual prefers risk-averse choices when the outcomes are framed in terms of gain but changes to favoring risk-loving choices when the equivalent outcomes are framed in terms of loss (Rabin,1998). Some past studies investigating financial decision-making and the framing effect, for example, Cheng and Chiou (2008), found that the framing effect can result in group polarization in investment decisions. More importantly, groups appear to be warier in gain situations, i.e., risk-averse, than individuals. Conversely, group decisions in loss situations appear more risk-loving than individuals.

The framing effect was applied as a condition in the experiments. The participants must invest in these risky mutual funds, even though the participants acquired the explanation data about the risk of the complex mutual fund. The level of investment will describe the cognitive bias of participants applied by the intervention in the experiment.

This study differs from previous studies, Such as Bapna et al. (2017) conducted an exploratory study using a customized Facebook application to understand how social ties are linked to an economic measure of trust. By employing the Investment Game, a well-established economic game designed to generate a quantifiable trust measure. The researcher designed the experiment to observe and compare subjects' investment decisions in three different interventions that differ from the previous studies using only one or two comparisons. Using the complex return mutual fund requires informed and experienced investors to invest. The

intervention was generated to frame issues with different information sources, including the official agenda, social media, and face-to-face advising. The effect of credible sources on trust and investment can be examined by comparing the decision between participants exposed to three different information sources and one control group not exposed to any intervention. It can reveal which source holds the most deep-seated trust to induce commitment in people's minds. Even though social media gives them access to various sources of information, people can learn more about many subjects, specifically investment. Will such people still be conscious of their rationality, or will they abandon their rationality and make decisions without personal reflection, as in the study of Chavanayarn (2014)?

## **4 METHODOLOGY**

This study designed an experiment to test trust and investment decisions. The experiment compared three sources of information, official agenda, social media, and face-to-face contact, by employing an investment game to measure how each group differs in trust and investment. Simulate a scenario where participants must make risky investment decisions after being shown the complex return funds' information in three treatment groups.

### **4.1 Experimental design**

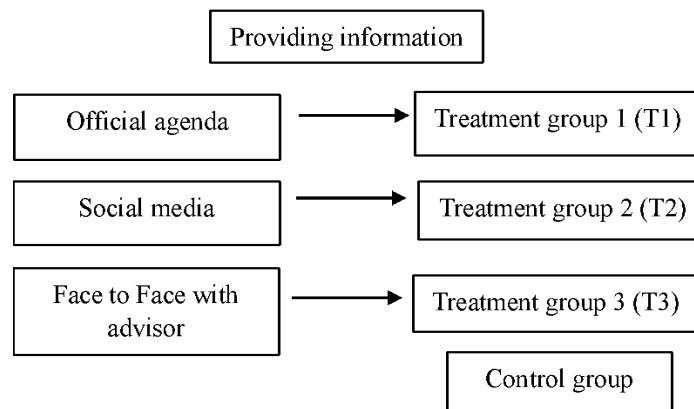
Each experimental group received identical information but acquired it from a different channel. Information on a mutual fund is treated as an intervention. The rationale for using the complex return mutual fund here lies in its nature of investment and return. The fund invests in future security contracts, and its return depends on derivative contracts' yields which could vary due to circumstances. The participants have to assess their investment options under this risky condition. One group received no information and was treated as a control group. Another three groups were treated by information intervention. The detail is as follow:

Treatment group 1 (T1); the researcher uses the standard pattern of a traditional bank, one familiar in Thailand. SCB was used in the experiment. The Siam Commercial Bank Public Company Limited (SCB) was the first commercial bank in Thailand established in 1906. The information includes descriptive data, the risk of the fund, and the potential benefits. The participants will be presented with the information from the institute's official website while in the experiment process. Treatment group 2 (T2); the participants will get information from social media represented by open sources. The most influential social media application is Facebook because the number of accounts worldwide is around 1.6 billion (Matt, 2020). The researcher finds an open source consistent with the experimental design containing information on the fund's risks, returns, and strategies. Therefore, the researcher uses said open source as a social media representative.

Treatment group 3 (T3); the advisor invited to inform the experiment is an investment consultant, who passed a course in investing in general, high-risk, or complex instruments, including futures contracts, and acquired the IC Complex 1 (Type 1 Complex Instrument Investment Adviser) license from the course. Hence, he qualified for this study. Before experimenting, the advisor explained the expected presentation style and information. The

researcher provided information, and the conditions were consistent with other experimental groups in the study.

The control group (C1) was defined as the ‘counterfactual.’ This group measures changes that happened to the recipient in the intervention. The impact was estimated by comparing counterfactual outcomes to those observed under the intervention (Roese, 1994). The control group will benefit from the experiment by providing a comparison allowing the researcher to estimate the outcomes across groups.



**Figure 2:** Summary diagram of the experimental and control group

The experimental procedure begins with the participant being randomly assigned to three rooms. All the participants received instructions detailing the experimental rules. And participants acquired the questionnaire to measure risk attitudes level. After collecting all questionnaires, the presentation will start around 15 minutes. After finishing the presentation, the researcher will use the questionnaire to measure the trustworthiness score of the information. This variable can show the source’s credibility from participants’ perspectives and reflect the credibility through a number. The score will be represented on a scale between 1 and 10.

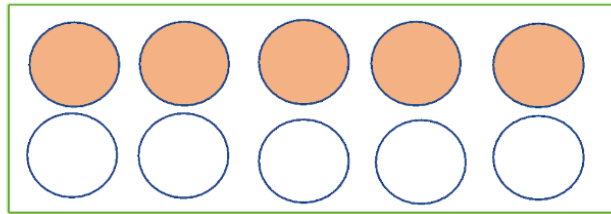
Moreover, the participants faced the simulation (investment game) where they must decide to invest and rely on information after being informed (in baht) between 1 and 200 baht. The investment decision was valued in the questionnaires, the same as the trustworthiness score. The questionnaires were collected, and the researcher reviewed the participant’s decisions. The random payoff will use a box with two ball colors to randomize everyone’s payoff. The ball will show the participants’ results in gaining or losing money (figure 2). The participants will not know their reward until the final step of this experiment. We will set five orange balls as a probability of loss and five white balls as a probability of gain. The ratio of loss and gain is 50:50.

Finally, the participants will not be allowed to know each other’s payoffs. This experiment will compare the three treatment groups; however, this experiment plays as a one-shot game, which means the participants will not be able to repeat the process.

## 4.2 Data collection

The participants of this study are aged between 18 to 30 years. The age range is purposive because people of this age are familiar with social media. A survey of ETDA Thailand (2008)





**Figure 3:** The random balls will be used to show the participant's payoff

shows that 96 percent are social media users.). Participants are in both study and early working career, but all important as a force driving future economy and society. The participants had to respond to a risk-attitude questionnaire to ensure there was no significant variation in risk-acceptance levels between them. There are 129 participants in total. The experiment was conducted at the Faculty of Economics, Khon Kaen University in Khon Kaen Province, Thailand. It is noted that this study faced obstacles in setting up the experiment due to the COVID-19 pandemic. During data collection (December 2021 – February 2022), the Thai authority imposed a partial lockdown in many cities and many restrictions on on-site activities. Many people turned down an experiment invitation because they did not want exposure to the risk of infection. Researchers had to gradually set many small experiments until reaching a total number of 129.

This study measured two independent variables: risk attitude and understanding. Risk attitude was measured first, then understanding at the end. The risk attitude of participants is defined by their choice of responses to the risk attitude questionnaire. The TSI risk profile Questionnaire (The stock exchange of Thailand, 2010) was applied to design the questionnaire. The risk attitude questionnaire has a score between 11-33. The understanding is a score representing participants' understanding of the information collected from a separate questionnaire section. The score of understanding is between 1-10. The participants rated their scores through the questionnaire. And two dependent variables were measured in this study: trust and investment. Trust is defined as the participant's trust in the information collected from the questionnaire. After the intervention, the participants rated their scores (1-10) through the questionnaire at the end. Investment is represented by the size of the participant's investment in the experiment submitted after the intervention. Participants' investment was determined by the investment choice (in baht) in the investment game this study framed.

### 4.3 Estimate

Researchers examined trust and investment parallelly. Figure 3 shows the necessary variables in each model. Risk attitude and level of understanding are independent variables for both models, while trust score is a dependent variable in the trust model, and investment value is a dependent variable in the investment model. Two models are written in the form of Ordinary Least Squares (OLS) equations:

$$\text{Trust score}(i) = \beta_0 + \beta_1 \text{Risk-attitude}(i) + \beta_2 \text{Understand}(i) + \beta_3 T1 + \beta_4 T2 + \beta_5 T3 + u \quad (1)$$

$$\text{Invest}(i) = \beta_0 + \beta_1 \text{Risk-attitude}(i) + \beta_2 \text{Understand}(i) + \beta_3 T1 + \beta_4 T2 + \beta_5 T3 + u \quad (2)$$

Both equations (1) and (2) are assigned dummy variables. T1 represents the treatment group exposed to the official agenda of the traditional investment institute. T2 is the variable representing the treatment group exposed to social media. Lastly, T3 represents the treatment group participants exposed to an investment advisor. The dummy variables are expected to show the effects of different sources of information compared to the control group. In dummy variables, the numerical value (0 and 1) was used to define the status of participants in each group. As in the first treatment group, the participants gained 1 in the dummy variable (T1), and the other dummy variables were 0.

This experiment’s hypothesis asserts that the credibility of information references and the investment size will positively affect people’s risk acceptance. Moreover, the credibility of the source is the most influential factor that reduces people’s risk awareness and individual decisions.

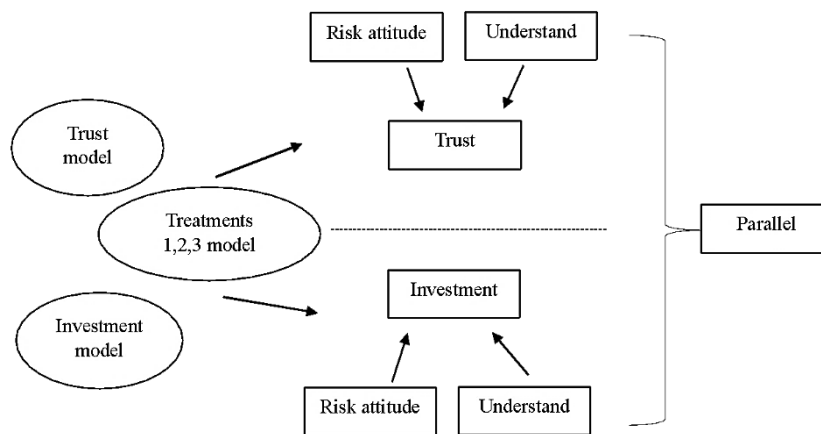


Figure 4: Overview of the model

## 5 RESULT AND DISCUSSION

### 5.1 Descriptive statistics of main variables

All treatment groups are similar in terms of their demographic characteristics. All ages are in the same range (18 to 30 years old); they are students and personnel working around Khon Kaen University, and the gender of participants includes male and female. T1 includes 16 women and 16 men. T2 includes 15 women and 18 men. Lastly, T3 included 16 women and 14 men. The average age of the participants is 21 years old, and the education level is primarily undergraduate.

The overall mean value of each variable in the three treatment groups, including the investment, is 129.91, the trust score is 7.25, and the understanding score is 6.29. Table 1 below shows the mean values of risk attitude, level of trust and understanding, and investment. The risk attitude is almost indifferent between participants. Their risk attitude is at the same level of the medium score (between 19-25). The level of understanding is not much different among all groups. The trust score represents in T1 and T3 are higher than the rest. The investment level is the highest in T1 and lowest in the control group.

**Table 1:** Descriptive data of questionnaire items, N = number of participants, maximum and minimum choices, mean and standard deviation (SD)

Types of references	N	Investment	Risk attitudes	Trust score	Understanding score
		Mean	Mean	Mean	Mean
<b>T1: Official agenda</b>	32	138.13	21.22	7.84	6.47
<b>T2: Social media</b>	33	126.27	20.97	6.45	6.42
<b>T3: Face-to-face with advisor</b>	30	125.33	20.9	7.47	6
<b>Control group</b>	33	112.88	20.73	6.42	6.15

## 5.2 Trust model

In table 2, the researchers checked the robustness of the model by running both robust regression and OLS comparisons to check for precision and efficient data analysis; the researchers examined statistical problems in the data. The trust model did not face statistical problems, including heteroskedasticity and correlation (shown in the appendix). The data is no significant difference in correlations between both methods. T1 represents the treatment group participants influenced by the official agenda of the traditional investment institute. T2 is the variable representing the treatment group participants influenced by social media. Lastly, T3 is the dummy variable representing the treatment group participants influenced by an investment advisor.

In the first experimental group, the statistically comparable results were significantly different from those in the control group. It can be extrapolated from the significant increase in the positive coefficient of the participants' trust after the influence of the first treatment (p-value=0.00). In parameter terms, the participants in the first treatment group trust more significantly compared to the dependent variables of the control group. It means the influence of the traditional investment institute's official agenda causes a marginal change in the trust of the first treatment group. However, the understanding and risk attitude level did not significantly affect the intervention and correlate to the trust of participants.

Participants' trust did not significantly change after the influence of social media information reference, and the coefficient of the dummy variable (T2) is negatively correlated. It means the influence did not significantly convince the participants in every variable. Moreover, it is worse than the control group and unable to convince participants' trust.

Trust in the third treatment group, influenced by face-to-face contact with the investment advisor, significantly increased after the intervention (p-value=0.006). Moreover, the statistically comparable results were significantly different from the control group. It can be considered that participants' risk attitude significantly correlates to the trust change (p-value= 0.028). The risk attitude of participants in the third treatment group significantly causes more trust than the counterfactual. It means the intervention causes a marginal change in the third treatment group, and the advisor convinced the participant's trust.

Understanding appeared insignificant in the overall trust model. From the results, although the experiment was framed to have gain and loss, the participants needed to be made aware of the loss from imperfect information. Whether they understood the information or not, the participants still trusted to focus on the benefits they would gain from the experiments. It

shows that the credibility of the data sources used in experiments (Official agenda and Face to Face with advisor) can influence people’s causality and decisions, regardless of their level of understanding.

**Table 2:** The statistical result in each treatment and summary of the Trust model

		Trust			
		Model 1	Model 2	Model 3	Model 4
Risk Attitude	Coefficient value	0.076	0.53	0.03	0.131
	P-value	0.051 *	0.344	0.554	0.028 **
Understand	Coefficient value	0.152	0.206	0.219	0.065
	P-value	0.132	0.155	0.114	0.663
T1	Coefficient value	1.333	1.32		
	P-value	0.00 **	0.00**		
T2	Coefficient value	-0.297		-0.037	
	P-value	0.929		0.912	
T3	Coefficient value	1.052			1.029
	P-value	0.002**			0.006**
con	Coefficient value	3.905	4.037	4.437	3.295
	P-value	0	0.012	0.003	0.043

Note: \*\*p-value<0.05, \* p-value<0.1

### 5.3 Investment model

The researchers checked the robustness of the model by running both robust regression and OLS comparisons to validate the relative relationships of the variables for precision and efficient data analysis, the researchers examined statistical problems in the data. The investment model did not face statistical problems, including heteroskedasticity and correlation (shown in the appendix). As a result, our standard model did not differ significantly in both correlations, and the r-square values were unchanged.

The results reveal that in the first treatment group (T1), the risk attitude of participants (p-value= 0.056) and understanding of participants in the information (p-value=0.007) are significantly positively correlated with the investment. After the intervention, the first treatment group’s investment significantly increased (p-value = 0.037). Participants’ understanding and risk attitude in the first treatment group significantly affected investment difference from the counterfactual in terms of a parameter (coefficient value). It means the intervention of the official agenda causes a marginal change in the investment of the first treatment group.

The second treatment significantly affected the participants’ understanding of the second treatment group (social media channel) (p-value = 0.00). The participants’ understanding in the second treatment group significantly differed from the counterfactual group considered by a parameter (coefficient value). However, the second treatment group’s participants did not significantly invest after the information intervention. It means social media intervention did not cause a marginal change in the second treatment group. Hence, the concern of trust in the social media information’s references still consistently holds the participants’ minds and is related to reluctance to invest.

**Table 3:** The statistical result in each treatment and summation of the investment model

		Investment			
		Model 1	Model 2	Model 3	Model 4
Risk attitude	Coefficient value	2.103	3.013	0.903	4.041
	P-value	0.058*	0.056*	-0.545	0.019 **
Understand	Coefficient value	10.22	11.015	16.883	9.184
	P-value	0.001**	0.007 **	0.00**	0.037 **
T1	Coefficient value	20.969	20.27		
	P-value	0.03**	0.037**		
T2	Coefficient value	10.096		8.57	
	P-value	-0.289		-0.375	
T3	Coefficient value	13.639			13.148
	P-value	-0.161			-0.207
cons	Coefficient value	6.402	-17.355	-9.7011	-27.38
	P-value	-0.834	-0.684	-0.815	-0.551

Note: \*\*p-value<0.05, \* p-value<0.1

Lastly, understanding and risk attitude significantly affected the third treatment group after the intervention of the advisor (p-value=0.037,0.019). Although, Understanding and Risk attitude is significantly different from the counterfactual measured by the coefficient value, but participants did not significantly invest in the experiment. It means the intervention did not cause the differences compared to the counterfactual. Therefore, the intervention did not cause a marginal change in the investment of the second and third treatment group. It means the social media and the advisor cannot induce participants to invest in the experiment.

## 6 DISCUSSION

The result drew four essential discussions. One of them reflects the parallel overview results of both trust and investment models. Another three are associated with the result of each treatment group. Firstly, the participants showed a significantly understood of investment rather than trust. The result shows that more trust in investment information is needed. Sometimes people do not care to understand when doing things, especially when involved in non-monetary incentive matters. On the other hand, human behavior would be more attractive to the beneficial situation. People would be more eager to learn and percept what they will face. Participants in this experiment need to make a judgment on investment that they could gain or lose. This kind of risky situation would increase the likelihood of performing a complex task with understanding (Sprinkle, 2000).

Secondly, the participants exposed to official financial information (T1) invested significantly while other treatment did not. It could be implied that traditional or official information gained trusted from participants. It is true that nowadays, financial information saturates in many forms via social media channels. However, it should be noted that traditional institutions of information giving, such as factsheets of mutual funds issued by a banking institution, have existed long ago and remain. Then, people could be familiar with T1's information reference.

It gained more confidence than information that seemed less in an authorized format. It is general knowledge that official data needs to be undergone systematic supervision and regular reviews until it is launched publicly (Drakulic & Kasljevic,2016).

Thirdly, receiving financial information from a social media channel (T2) does not lead to trust and induce the participants to invest. This may be surprising, considering that the participants are still young. People in the young generation are comprehensive in social media. However, social media would not be very influential because even if the information received is the same, those individuals may have come across less legit information than information from other sources based on personal experience. Studies verify that evidence of fake news stories is getting much traction on Thai social media, sometimes even outperforming actual news stories (Nagi, 2018). However, social bots or harmful accounts cause fake news. They can play both a negative and a positive role. However, they are often a tool for reducing trust in social networks, mass theft of personal data, and organizing information injections (Pasioka et al., 2021).

Fourthly, the participants trusted face-to-face advising (T3) but did not invest. An arrangement between people with physical contact and in a formal environment generally creates a trustable situation. People have a chance to learn to know each other, which could create some initial bounds. Nevertheless, trust does not necessarily motivate further actions, specifically when dealing with the risk. People with bad experiences from the trust would be more self-protective and fear acting on something harmful. Although fear is a negative emotion yet, it has a positive impact on investor decision-making. Fear makes an individual take careful steps, even precautionary measures, while decision-making (Hassan et al.,2013). It is also reasonable to argue that a face-to-face situation is quite one-way-oriented. People, on many occasions, need time to process the information they receive. They may have trusted an informant but were framed in a situation that did not create a sufficient condition to read, reflect, and decide deliberately. This is unlike T1, which naturally accommodated participants' self-reflection on information to read and make a decision.

## 7 CONCLUSION AND SUGGESTION

This study aimed to test the effects of receiving different information on trust and investment decisions. This study set the experimental group into three groups, including official agenda(T1), social media(T2), and face-to-face with an advisor(T3). And use the results from the obtained data to estimate the results by comparing them with the counterfactual.

The results showed that T1 and T3 trusted the information. T1 made significant investment decisions, while T3 did not. It explains the reliability of official sources. T2 is distrustful and does not have any investments. The result reflects the nature of social media information that may cause suspicion to the participants and hazardous decisions. It means the natural decision behavior of most people is likely to avoid a loss. Even though every treatment group's information in the experiment was framed to have equal risk and similarity in the risky situation, participants were more likely to choose the risk-averse option (Tversky & Kahneman, 1981). Hence, human risk-taking behavior can also be mitigated by trustworthy variants. Society has developed through technology and globalization – people can access a vast amount of investment information. Nevertheless, investment trust in the traditional

investment institution is still deep-seated in the individual rationale and can gain more commitment than others.

The researchers hope that this study will be helpful for policymakers to see the potential impact of future investment decisions, including the harmful effects of receiving information that may be wrong and inaccurate. At the corporate level, information must be communicated to investors for review as clearly as possible. The policy should promote financial product information through social media. However, it must always provide official and updated information to investors simultaneously. Although people do not believe and do not invest in this experiment, which does not mean policymakers should not monitor investments promoted on social media. The real world is open to a lot of information influx. The changes can increase the chances of believing poor-quality information. The policymaker should take precautionary measures to prevent loss and damage from cyber criminals.

Regarding the regulation level, it must deal with misleading information by the relevant agencies, namely The Board of Investment of Thailand and the Office of Consumer Protection. Firstly, they should cooperate in the supervision using clear protection laws in advertising where information is not exaggerated from official data. Secondly, there should be a policy that paves the way for people to understand and study investment information based on the principles and mechanics of that product, which should be targeted to the people in the study sample. Thirdly, Financial institutions should find methods and channels to present financial information clearly and maintain credibility. Moreover, the study shows that financial institutions and consultants continue to perform well and guide investments for people, especially at a specific age. Both should be adjusted to maintain credibility, keep people interested, and, most importantly, induce people to make rational investments.

The future research direction should expand more age range and population for power in terms of statistics and cover various groups. Moreover, because financial products still have many forms with different mechanisms and natures, therefore should be taken into account. The issue may affect investment decisions in other directions as well.

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## Appendix

White's test for H<sub>0</sub>: homoskedasticity  
against H<sub>a</sub>: unrestricted heteroskedasticity

chi2(14) = 17.20  
Prob > chi2 = 0.2455

Cameron & Trivedi's decomposition of IM-test

Source	chi2	df	p
Heteroskedasticity	17.20	14	0.2455
Skewness	7.59	5	0.1803
Kurtosis	1.05	1	0.3064
Total	25.84	20	0.1712

**Figure 5:** Heteroskedasticity checks in the trust model

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White's test for H<sub>0</sub>: homoskedasticity  
against H<sub>a</sub>: unrestricted heteroskedasticity

chi2(14) = 14.35  
Prob > chi2 = 0.4238

Cameron & Trivedi's decomposition of IM-test

Source	chi2	df	p
Heteroskedasticity	14.35	14	0.4238
Skewness	4.04	5	0.5441
Kurtosis	9.37	1	0.0022
Total	27.76	20	0.1153

**Figure 6:** Heteroskedasticity checks in the investment model