The Effect of Social Media Information on Intention to Invest in Indonesia Capital Market: Case of Generation Y

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Abstract. The use of social media in Indonesia has increased rapidly throughout the years. The social media user's age is in line with the demographic characteristics of capital market investors, which have shifted to the younger generation. The study strive to explain the effect of social media as source of information for investment intention reference of prospective young individual investors in Indonesia. The study applies the Theory of Planned Behavior (TPB) and Information Adoption Model (IAM). Online survey from 598 respondent is used as the primary data for this study. Using the Structural Equation Model, the analysis shows that financial self-efficacy simultaneously mediates and moderates the relation of the independent and the dependent variables. In addition, investor's perception of risk was among the most influential dependent variable. The study emphasizes the importance of managing social media for the financial service providers to increase Generation Y's intention in the stock market investment.

Keywords: Social Media, Investment Intention, Capital Market, Theory of Planned Behavior, Information Adoption Model

1 Introduction

Individual participation in financial markets has risen sharply in recent times [1]. Products transacted on stock markets have long been a favorite asset class, as they provide liquidity, low transaction costs and flexibility that many other classes of assets do not have [2]. Indeed, the volume and percentage of people who invest in stock market securities have risen sharply in recent years [3].

More research about investment decision-making among individual investor has been conducted, such as in Australia [4] and the United States [5][6][7], but very limited research has been done in the Indonesian capital market.

In terms of theory, the Theory of Planned Behavior (TPB) has been used to examine the investment intention in the capital market [8][9][10][11][12][13]. The theory is widely used to predict the individual future behavior based on attitudes and intention, influenced by three constructs of TPB. Therefore, the current study uses TPB to analyze investment intentions among Indonesian investors, especially the generation Ys.

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Compared to the total number of Indonesian citizens, the number of Indonesian capital market investors is only 1%. Despite the small amount, the number of investors has increased in recent years. The demographics of the investors are also shifting to younger ages. Currently, capital market investors are dominated by a total of 70% of Generation Y (Indonesia Central Securities Depository data, 2020).

In addition, this study also aims to examine the effect of information in social media toward investment intention using the Information Adoption Model (IAM), risk, and social interaction as additional external constructs, which lead to intention [14]. In the capital market industry, the use of media as a source of information for investors has been suggested in previous studies [15][16]. Social media has long been used as an exchange of information related to the capital market [17]. Generation Y is very familiar with social media because they spend most of their lives in a digital environment, so information technology affects how the generation lives and works [18].

By integrating the related components of TPB and IAM on the proposed research model, the research will focus on the investor attitudes toward the information usefulness, the social influence, investors' risk perception and investors' internal factors, especially personality and self-efficacy. The IAM explains the characteristics of the social media information, while the related components of TPB express the behavior of consumers toward the information which leads to investment intention.

1.1 Theory of Planned Behavior (TPB)

TPB has been widely used in studies to explain behavior, but studies related to investing behavior are still very limited [10]. Ramayah et al. [13] found that attitude and subjective norm have a direct positive relationship on investment intention. However, the TPB construct in the form of perceived behavioral control was replaced with financial self-efficacy because these factors were closely related [8]. Financial self-efficacy has a significant relationship with investment intention in entrepreneurship [19][20]. The hypothesis that is formed to describe investment intention with two TPB constructs, namely:

H1: Subjective norm has positive effects on investment intention.
H2: Financial self-efficacy has positive effects on investment intention.

Based on TRA, the intention is formed from motivational factors that influence behavior, one of which is attitude [14]. Attitude has also been analyzed in several studies related to eWOM [21]. In this study, attitude will be related to information obtained by investors from social media because according to Erkan and Evans (2016) the two variables are interrelated. So that the hypothesis formed from the third TPB construct is as follows:

H3: Attitude toward information usefulness has positive effects on investment intention.

1.2 Information Adoption Model (IAM)

Sussman and Siegal (2003) argued that TAM and TRA models are not good enough to explain the process of information adoption. The researchers then developed a model that integrates the theory into a dual-process theory namely the Information Adoption Model.

In order to understand how people internalize the information they receive, previous researchers have focused on the information adoption process [22]. Participants in virtual communities (such as social networks) seek information and knowledge [23].

Argument quality and source credibility affect someone's attitudes toward information usefulness [14]. Argument quality determines the attitude of social media users to the benefits of information, while source credibility has an influence on the formation of user opinion [14]. Therefore, the following hypothesis was formulated:

H4: Argument quality positively effects attitude toward information usefulness.
H5: Source credibility positively effects attitude toward information usefulness.

1.3 Social Interaction

Stromer-Galley (2004) argue that interactivity occured in social networks as the interpersonal communication. The process of communication throught these platforms might create a social interaction. Social interaction can formed as subjective norm in social networks, which refers to social pressure for someone to decide a certain behavior. Online social pressure is a form of social interaction. Based on Gunawan [14], social integration and social influence can be used to predict social interaction construct. Thus, the next hypotheses are:

H6: Social integration has positive effects on subjective norm.
H7: Social influence has positive effects on subjective norm.

1.4 Perceived Risk

Perceived risk is powerful in explaining consumers' behavior considering influences often motivate consumers to avoid mistakes rather than to maximize utility in purchasing and expecting loss [14]. Uncertainty in perceived risk upon a social network could be derived by factors, such as the ability of users to judge the resulting experience, the difficulties to evaluate the network and the differences between expectations and experiences [14]. Lim et al. [2] argued that risk perception related to capital market investment can have a direct negative effect on the intention to invest. Those arguments build next hypotheses:

H8: Perceived risk negatively effects investment intention.

1.5 Mediation and moderation of financial self-efficacy

As addition, two constructs related to investment intention have been included in the construct of TPB, which is financial knowledge and personality traits. The constructs are proven to measure investment intention [24][25]. In this study, the financial knowledge is not included in the construct, and it will be replaced by information from social media, which is a source of knowledge for investors.

Based on the literature related to behavioral finance states that characteristics of the individual have an impact on investment decision-making [26]. In this study, Risk-Taking Propensity (RTP) and Preference of Innovation (PI) will be used as dimensions of personality traits according to research conducted by Akhtar and Das [8]. RTP has been predicted

individual's willingness to make a decision [27]. Meanwhile, PI has been measured individual preferences to invest in risky products with excessive intensity [8].

In addition to the personality traits as investment intention predictors, the relationship is also effected by FSE. Individuals with PI or RTP characteristics, could develop an investment intention in financial markets if they have certain confidence to be able to do it [8]. The mediation and moderation effect will prove how a third variable has a possibility to effect investment intention [28]. Based on this information, the following hypothesis formed is:

H9a: FSE mediates Preference for Innovation and investment intention relation.
H9b: FSE mediates Risk-Taking Prospensity and investment intention relation.
H10a: FSE moderates Preference for Innovation and investment intention relation.
H10b: FSE moderates Risk-Taking Prospensity and investment intention relation.

Based on the above hypotheses, the proposed model for this study is:

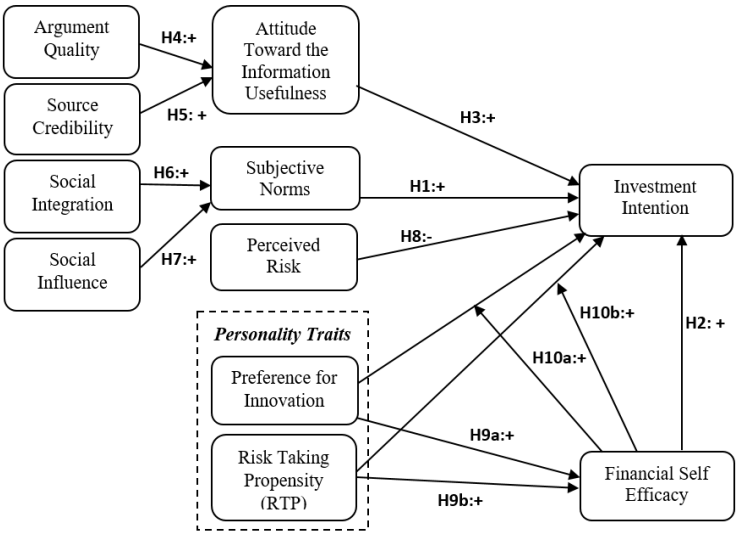

Fig 1. Proposed Research Model

2 Method

Data were collected through an online questionnaire that used the google form platform in April 2021. Non-probability purposive sampling was used in this study, so that only eligible respondents were included.

The respondent's criteria for this research were individual investors age 22 – 40 years old who has invested in Indonesia capital market for minimum three months and has an account in

one of the social media platform (for example Instagram, Facebook, Twitter, Telegram, Tik Tok, WhatsApp, or YouTube). The study will include participants who have capital market experience since the investors will be able to buy or sell stock to diversified their portfolio, and they might use information from social media as a reference to make investment decisions [29].

The self-administrated questionnaire was distributed through social media and social messaging applications. The questionnaire consisted of several sections to make sure that the respondent answer screening question related to respondents' behavior in using social media for investment decision. The main questions to be tested measured using a 7-point Likert scale ranging from "strongly disagree" to "strongly agree". The data from a total of 598 respondents was collected.

Table 1. Respondent Demographics Profile

Variable	Category	Frequency	%
Age	22 - 25	279	46.7%
	26 - 30	208	34.8%
	31 - 35	94	15.7%
	36 - 40	17	2.8%
Gender	Male	336	56.2%
	Female	262	43.8%
Education	High School	109	18.2%
	Diploma	64	10.7%
	Bachelor	380	63.5%
	Master	45	7.5%
Occupation	Student	72	12.0%
	Employee	305	51.0%
	Government Institution Employee	34	5.7%
	Civil Servant	46	7.7%
	Jobless	61	10.2%
	Entrepreneur	63	10.5%
	Others	17	2.8%
Income	≤ IDR 5,000,000	293	49.0%
	IDR 5,000,001 - 10,000,000	221	37.0%
	IDR10,000,001 - Rp15,000,000	43	7.2%
	IDR 15,000,001 - Rp20,000,000	16	2.7%
	≥ Rp20,000,001	25	4.2%

Note: n = 598

3 Result

The SPSS and SMART-PLS was used to tested the research model. While the Structural Equation Modelling was chosen as tools to analyze the data, because it can evaluate

independent multiple regression equations, able to incorporate latent variables used in the study and estimate the measurement errors in the process of assessment [30].

Before the hypothesis testing is conducted, the feasibility test must first be carried out at an early stage by evaluating the measurement model (outer model). There are four criteria for using data analysis techniques with SMART-PLS to assess the outer model criteria, namely evaluating the value of Outer Loading, Average Variance Extracted (AVE), Discriminant Analysis and Composite Reliability [31].

Table 2. Validity and reliability of variables

Variable	Indicators		Standardized Loading Factors	Composite Reliability	Average Variance Extracted (AVE)
Argument Quality	AQ1	The information regarding stock market investment provided in social media is	0.793	0.912	0.674
	AQ2	The information regarding stock market investment provided in social media is	0.870		
	AQ3	The information regarding stock market investment provided in social media has	0.861		
	AQ4	The information regarding stock market investment provided in social media is	0.741		
	AQ5	The information regarding stock market investment provided in social media is	0.833		
Source Credibility	SC1	The information source regarding stock market investment in social media is	0.876	0.939	0.755
	SC2	The information source regarding stock market investment in social media is reliable	0.866		
	SC3	The information source regarding stock market investment in social media is	0.854		
	SC4	The information source regarding stock market investment in social media is expert	0.857		
	SC5	The information source regarding stock market investment in social media has good	0.890		
Attitude toward information usefulness	A1	I always read information in social media before I conduct stock transaction	0.748	0.901	0.647
	A2	Information in social media is helpful for my decision making before I conduct stock	0.841		
	A3	Information in social media makes me feel confidence in conducting stock	0.847		
	A4	In general, I think read information in social media about stock market investment is	0.796		
	A5	I have a positive attitude toward information in social media about stock market	0.785		
Social Integration	SIT1	I interact with a lot of people through social media platform	0.750	0.920	0.697
	SIT2	I feel that I always been included in social media group	0.878		
	SIT3	I feel satisfy with my interaction in social media	0.832		
	SIT4	I actively participate in social media group	0.866		
	SIT5	My friends in social media give me sense of belonging	0.842		
Social Influence	SIF1	People who are important to me think that I should participate in social media	0.835	0.904	0.654
	SIF2	People who influence my behavior encourage me to participate in social media	0.829		
	SIF3	Participating in social media would enhance my chance to meet users who have	0.746		
	SIF4	Social media users keep close ties with each other by sharing their social lives	0.830		
	SIF5	Social media users keep close ties with each other by sharing information	0.800		
Subjective Norm	SN1	My colleagues and friends are stock market investors	0.747	0.938	0.753
	SN2	People who have important influence on me think that I should invest in stock market	0.886		
	SN3	People whose opinion I value would prefer that I should invest in stock market	0.897		
	SN4	People who are important to me think that investing in stock market is a good idea	0.902		
	SN5	People who are important to me think that investing in stock market is wise	0.896		
Personality Traits Preference for Innovation	PI1	People usually ask me for assistance for performing creative activities	0.839	0.897	0.638
	PI2	I always think of original ways of performing a task	0.849		
	PI3	I always try to invent new uses for everyday objects	0.756		
	PI4	Among my peers, I am usually among the first to try new things/experiences	0.767		
	PI5	In general, I am not hesitant to try out new things/experiences	0.708		
Risk-Taking Propensity (RTP)	RTP1	I would prefer to invest money in safer stocks from large and renounced companies	0.725	0.867	0.523
	RTP	If return is very high I would not hesitate to put my money in stocks that have a	0.696		
	RTP	I consider investment in securities as an important aspect of my life	0.785		
	RTP	I enjoy gambling and risky things	0.600		
	RTP	I have willingness to expose myself to situations with uncertain outcomes	0.751		
	RTP	I like taking chances	0.765		
Perceived Risk	PR1	Globally, I'm sure I will make mistake if I make stock market investment	0.812	0.840	0.517
	PR2	After all, I have the feeling that this stock market investment will really cause me a	0.714		
	PR3	Generally, I'm sure that I will incure some risk for a year ahead if I invest in stock	0.853		
	PR4	I would worry that stock market investment will not provide value for my money	0.591		
	PR5	I would worry about disappointment with the stock market investment experience	0.585		
Financial Self-Efficacy (FSE)	FSE1	It is easy to make progress toward my financial goals	0.739	0.886	0.567
	FSE	It's not hard to stick to my spending plan when unexpected expenses arise	0.804		
	FSE	When unexpected expenses occur, I usually don't have to use credit	0.626		
	FSE	When faced with a financial challenge, I do not find hard to figure out a solution	0.824		
	FSE5	I do not lack confidence in my ability to manage my finances	0.810		
	FSE	I do not worry about running out of money in retirement	0.634		
Investment Intention	II1	I will invest in stock market soon	0.813	0.885	0.608
	II2	I will invest in stock market regularly	0.704		
	II3	I will tell my friend and family to invest in stock market	0.701		
	II4	I will make an effort to invest in stock market	0.840		
	II5	I intend to invest in stock market	0.829		

To asses the constructs' reliability, composite reliability (range ≥ 0.6) and Cronbach's α (range ≥ 0.7) was used, based on Hair et al. [30]. While the validity for the constructs is assessed using average variance extracted (AVE) (range > 0.5) [30] and discriminant validity also conducted. The results is shown in tables 2 and 3. From the outer loading score, few

indicators which have score below < 0.7 are suggested to be further analyzed. The indicators which has score below 0.7 are not eliminated since all of the variables represented have significant results. Moreover, the square root of AVE for each construct was higher than its co-relation values [32] (as shown in Table 3).

Table 3. Discriminant validity

Construct	Argument Quality	Attitude	Financial Self-Efficacy	Investment Intention	Perceived Risk	Preference for Innovation	Risk-Taking Propensity	Social Influence	Social Integration	Source Credibility	Subjective Norm
Argument Quality	*0.821*										
Attitude	0.698	*0.804*									
Financial Self-Efficacy	-0.022	-0.002	*0.753*								
Investment Intention	0.041	0.040	0.624	*0.780*							
Perceived Risk	0.005	0.010	0.293	0.282	*0.719*						
Personality (Personal Innovativeness)	0.244	0.246	-0.036	-0.023	-0.044	*0.799*					
Personality (Risk-Taking Propensity)	0.045	0.040	0.635	0.880	0.364	-0.029	*0.723*				
Social Influence	0.459	0.449	-0.001	0.077	0.021	0.452	0.065	*0.809*			
Social Integration	0.407	0.386	-0.049	-0.002	0.008	0.458	0.015	0.681	*0.835*		
Source Credibility	0.627	0.562	0.002	0.031	0.004	0.243	0.026	0.468	0.431	*0.869*	
Subjective Norm	0.340	0.312	0.005	0.033	-0.032	0.380	0.028	0.544	0.454	0.365	*0.868*

The findings showed that only FSE were positively and significantly related to intention to invest, which is only supported H2. While all of the constructs of information on social media were all positively and significantly related to the formation of attitude and subjective norms. Thus, providing support to H4 – H7. The result showed the importance of perceived risk to help investors decide investment in the stock market.

In accordance with the p-value which only obtained a score of 0.690, the initial hypothesis in relation to the effect of attitude toward the information usefulness toward investment intention, the hypothesis was unacceptable. This shows that the attitude toward the information usefulness does not have a significant influence on investment intention. It can be concluded that although there has been a positive attitude from investors, especially regarding the usefulness of information obtained from social media, it will not necessarily have an effect on the intention to invest in the stock market.

In testing the hypothesis that measures the relationship between subjective norm and investment intention, this study did not find a significant effect between the two variables. That is, the higher the subjective norm formed by investors, the less influence they have on the intention to invest. This result is different from the argument put forward by Hong (2004) and Shanmugham and Ramya (2012), namely one of the main influences on the formation of investment intentions are social interaction and social pressure.

Tabel 4. Summary of Causal Relationship Analysis

Hypothesis	Path	P-Values	Results
H1	Subjective Norm → Investment Intention	0.807	Rejected
H2	Financial Self-Efficacy → Investment Intention	0.000	Accepted
H3	Attitude toward the information usefulness → Investment Intention	0.690	Rejected
H4	Argument quality → Attitude toward the information usefulness	0.000	Accepted
H5	Source credibility → Attitude toward the information usefulness	0.000	Accepted
H6	Social integration → Subjective norm	0.002	Accepted
H7	Social influence → Subjective norm	0.000	Accepted
H8	Perceived Risk → Investment Intention	0.807	Accepted
H9	The mediation effect of Financial Self-Efficacy toward personality traits and investment intention		
	a. Preference for Innovation	0.678	Rejected
	b. Risk-Taking Propensity	0.000	Accepted
H10	The moderation effect of Financial Self-Efficacy toward personality traits and investment intention		
	a. Preference for Innovation	0.378	Rejected
	b. Risk-Taking Propensity	0.000	Accepted

In the proposed model, the study examine hypothesis to prove the mediation relationship between FSE toward investment intention and personality traits. It was observed that the indirect path mediated by FSE toward investment intention and personality traits was only significant for Risk-Taking Propensity as one of the Personality traits variables. The results suggests that the investors' personality influence on investment intention is not fully mediated by FSE, so H9a is not supported.

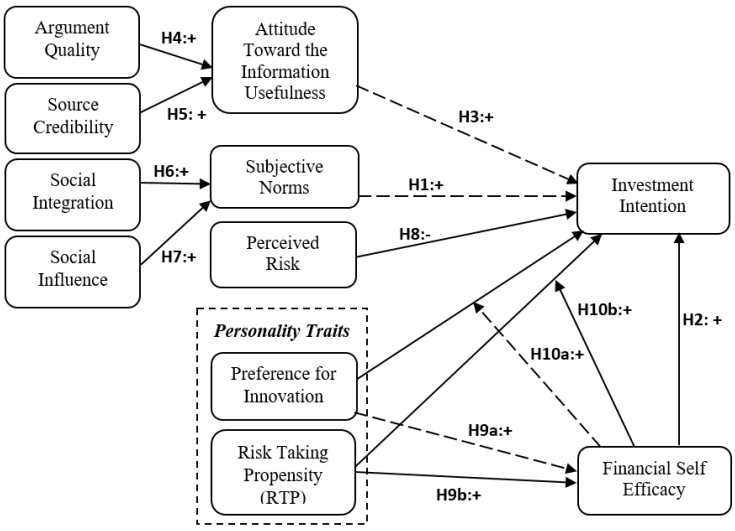

Fig 4. Results of the proposed model

To test the proposed hypothesis of H10, the relation of FSE and personality traits were measured. Similar to the mediation relationship, FSE also positively moderated Risk-Taking Propensity and investment intention. This is not found in the relationship between Preference of Innovation and investment intention when it was moderated by FSE. In addition, FSE strengthens RTP and investment intention relation in prospective individual investors.

4 Discussion

Based on the data results, the hypothesis of the construct used for the measurement of social media is accepted. Thus, it can be concluded that information on social media can form a positive attitude for investors towards the benefits of the information gathered from social media regarding stock market investment. However, if we examine the relationship with the formation of the attitude with the intention to invest, it is not entirely the formation of investors' attitude towards information on social media that will make the investors decide to invest.

In relation to the social influence of investor interactions through social media, although there is a relationship between social interaction and social integration with the formation of subjective norms, such as information constructs on social media, investors' formation of the subjective norms does not have an impact effect on investment intentions. Thus, it can be

concluded that external factors consisting of information sources and social interactions do not influence investment intentions.

Meanwhile, the internal factors of investors which are formed by personality, self-efficacy and perception, have a significant effect on investment intention. However, the formation of investor personality based on Preference for Innovation has no effect on investment intentions. The formation of investor personality is more directly influenced by Risk-Taking Propensity. Perception of risk also has a direct influence on the intention to invest.

These results are different from previous research by Akhtar and Das [8] which found that the basic constructs of TPB in the form of subjective norms, attitude and financial self-efficacy have a positive and significant relationship with intention to invest. However, the analysis in this study found something similar to research conducted by Gunawan [14] which states that the adoption of information does not fully influence behavior intention.

5 Conclusion

The study provides better understanding of the behavior of prospective individual investors and whether their decision-making process are influenced by the information in social media and personality traits. Different factors such as perceived risk and financial self-efficacy also proven to have influence to individuals' intentions to stock markets investment. This study give further reference to past studies which failed to explain the psychological aspect and source of information as important aspects to strengthened investment intentions.

Based on the results of hypothesis testing, there is a significant relationship between argument quality and attitude and also source credibility and attitude with p-value above 5%. In accordance with the factor loading value, the strongest indicator of the argument quality variable is related to consistent information (AQ2) with an outer loading score of 0.870. As for source credibility, the strongest indicator of this variable relates to the reputation of the resource person (SC5) who provides information on social media with an outer loading score of 0.890. From these results, it can be concluded that information that is consistently conveyed by related parties in promoting on social media is preferred by investors. As for the selection of sources who convey information, they must be sources who have a good reputation.

This study shows the role of essential factors to form investment intentions among stock market investors, which includes source of information, financial self-efficacy, personality traits, attitude, and subjective norms.

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