THE INFLUENCE OF MEDIUM CREDIBILITY TOWARDS INFORMATION ADOPTION IN INDONESIA STOCK INVESTMENT VIRTUAL COMMUNITIES

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ABSTRACT

This study aims to analyze the influence of medium credibility towards information adoption through information credibility and perceived usefulness. The context of this study is virtual communities dedicated to stock investment. Based on the survey obtained from 333 respondents, our analyses show that medium credibility positively influences information credibility and perceived usefulness. Meanwhile, information credibility and perceived usefulness are the antecedents of information adoption. Additionally, information credibility positively influences perceived usefulness. In particular, it can be concluded that in the context of stock investment virtual communities, medium credibility can influence information adoption through information credibility and perceived usefulness. The theoretical and practical implications of this study, and its limitations are also discussed.

KEYWORDS

Information Adoption, Information Credibility, Medium Credibility, Perceived Usefulness, Stock Investment Virtual Communities

1. INTRODUCTION

The capital market can drive macroeconomic turnover in a country and has potential to improve one's living standards (OECD, 2018). However, in Indonesia, the capital market is the least utilized financial sector due to low capital market literacy (Otoritas Jasa Keuangan, 2016). The index of capital market literacy in Indonesia is only 4.4%. In other words, among 1000 people, only 44 people have sufficient knowledge on capital market. In order to improve the literacy index, the Financial Services Authority (OJK) launched the National Strategy for Financial Literacy in 2017. One of its initiatives is to encourage the use of information technology-based media in financial education. As the number of internet users in Indonesia continually increasing, the internet-based media such as virtual communities is expected to be the most efficient way to improve the index of capital market literacy in Indonesia (We are social, 2018).

Virtual communities are online social networks where people with the same interests, goals or activities interact to share information and knowledge (Chiu, Hsu and Wang, 2006). In Indonesia, the popularity of virtual communities is increasing along with the rapid development of social media and instant messaging users. The convenience provided by virtual community to share and search information is among the reasons that motivate people to join virtual community. This also applies to stock investors that continuously need to find the most updated information to improve their portfolio performance. As social media and instant messaging become the two of the most widely used applications by internet users in Indonesia, stock investment virtual communities are often formed through social media (i.e. Facebook and Instagram), as well as instant messaging applications (e.g. WhatsApp and Telegram group). Additionally, there is also a social media that specifically serve stock investors, Stockbit.

Virtual community is often used by investors to exchange information about capital markets. In the capital market, investors who are able to get credible information earlier may secure greater profits. Thus, stock investors experience the fear of missing out (FOMO) and consider information as important commodities. The

urgency of information has encouraged stock investors to search for up-to-the-minute information, including through virtual communities. However, despite its ability to spread information quickly, not all virtual communities circulating trustworthy information. In a study conducted by Bates and Annette, 85% of journalists stated that, in general, the information available on social media was less credible than conventional media due to lack of validation, verification and reporting standards (Bates and Annette, 2009).

Numerous studies have documented that medium credibility is the antecedent of information credibility (Kang, 2010; Westerman, Spence and Van Der Heide, 2012). Audience tends to assess the credibility of a medium before assessing the credibility of information distributed through it. On the other hand, several studies have documented the positive effects of information credibility on information adoption (Wathen and Burkell, 2002; Bates and Annette, 2009). However, there have not been many studies that discuss whether medium credibility can influence information adoption. To fill the gap, this study tries to evaluate whether medium credibility can also influence users' decision to adopt information through information credibility and information usefulness.

The rest of the paper is organized as follow. In the following section, we review the relevant literature on medium credibility, information credibility, and information adoption. Additionally, our proposed model and hypotheses development are also presented in the literature review section. We then describe our methodology and present our results, ending with a discussion and conclusion of our findings, including our theoretical implication, practical implications, and research limitations.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 Medium Credibility as Antecedent of Information Credibility and Perceived Usefulness

According to Metzger et al., (2003), medium credibility defines users' perceived level of trust towards a specific media. Medium credibility focus on the channel through which content is delivered rather than the content itself. To measure medium credibility, prior research used medium interfaces and features, which only represent the technical ability of medium to deliver information. However, the past approach is unable to represent users' psychological factors in evaluating medium credibility. Therefore, this study adopted the medium credibility theory developed by Li and Suh that combined both the technical and psychological aspects of users in assessing media credibility (Li and Suh, 2015).

Based on Li and Suh theory, medium credibility is defined as a second-order construct that consists of medium dependency (psychological aspects), interactivity, and medium transparency (technical aspect). First, medium dependency is defined as the extent to which users rely on a particular virtual community to find information about stock investment (Ito *et al.*, 2008). Meanwhile, interactivity is defined as media ability to increase user involvement. This includes the media interface, features, and its ease of use that help users to connect with each other (Li and Suh, 2015). Lastly, medium transparency refers to the ability of media to support the exchange of information between individuals candidly (Yang and Lim, 2009). According to Yang and Lim, medium transparency is the key to building relational trust. For example, blogs are considered more credible than conventional media because it provides more independent and transparent information (Andrews, 2003).

In the context of stock investment virtual communities, each virtual community has its own characteristics which lead to different credibility assessment from its users. Previous research found that medium credibility influences information credibility (Westerman, Spence and Van Der Heide, 2012; Li and Suh, 2015). Although people tend to have dependency to get information from their favorite media, they do not always feel that their most preferred media was the most credible. This also the case for stock investors which rely heavily on information to make decision. Hence, before deciding whether information from a specific virtual community is credible, one often assess the credibility of medium beforehand. If the virtual community does not provide good interactivity and transparency, then, users may find themselves to distrust the provided information. Based on these explanations, the authors draw the hypothesis:

H1: Medium credibility has a positive effect on information credibility.

Several researchers found that medium credibility also influences information credibility (Li and Suh, 2015; Hajli, 2018; Madli *et al.*, 2018). Media with high interactivity may provide rich and relevant information for

users. In the context of stock investment virtual community, if the virtual community provides features and interface that encourage their users to interact and share information, it will build up the relevant content for its users. Hence, when users consider a virtual community as a credible media, for example having good interactivity and transparency, they will likely believe that the information provided by the media is useful for them. Based on this, it was concluded that:

H2: The credibility medium has a positive effect on perceived usefulness.

2.2 Information Credibility as Antecedent of Perceived Usefulness and Information Adoption

Information credibility is defined as the extent to which information can be trusted by the recipient, thus can influence the recipient to take certain actions (McKnight and Kacmar, 2007). Meanwhile, information adoption is defined as a process of involvement to use information that is intentionally carried out by information recipients (Yan *et al.*, 2016). In virtual community, adopting behavior is often performed (Cheung, Lee, and Rabjohn, 2008). For example, buyers in e-commerce platform often look for reviews from other users and ask questions to others before making purchases (Sussman and Siegal, 2003; Pitta and Fowler, 2005). This also happens in the context of stock investment virtual community. The member of stock investment virtual community often evaluates the credibility of information before deciding whether they will adopt the information. The process of adopting information itself starts when user agreeing to the information, following the suggestion, and/or making decisions based on that information (Sussman and Siegal, 2003). Several previous studies found that information credibility significantly influences information adoption (McKnight and Kacmar, 2007; Cheung *et al.*, 2009; Yan *et al.*, 2016). Therefore, the authors propose the following hypothesis:

H3: Information credibility has a positive effect on information adoption.

Figure 1. Research Model

In this era of data, there is abundance of information available every day. However, not all information is trustworthy and useful. Although information credibility can influence information adoption, only useful and relevant information will be adopted by people. On the contrary, useful information can predict users' intention in adopting information. However, untrustworthy information will reduce the usefulness or even increase the risk of information, especially in the context of stock investment which has direct impact on one's finances. Therefore, information credibility is a very important factor to determine whether information is useful or not. The argument is supported by several previous studies which showed a positive relationship between information credibility and perceived usefulness (Ko *et al.*, 2005; McKnight and Kacmar, 2007; Hajli, 2018). Therefore, the authors propose the following hypothesis:

H4: Information credibility has a positive effect on perceived usefulness.

According to Hussain *et al.*, information adoption behavior is essential for consumers before making a decision regarding the quality of a product or service, especially in an online environment (Hussain *et al.*, 2018). Thus, information usefulness is considered to be essential to predict whether further adoption of information will happen. In the context of stock investment, information is considered useful when it can help

improve one's performance in stock investing. When someone considers information useful to them, they will tend to adopt that information to benefit from it (Erkan and Evans, 2016; Hussain *et al.*, 2018). Therefore, the authors propose the following hypothesis:

H5: Perceived usefulness has a positive effect on information adoption.

3. METHODOLOGY

We tested the proposed hypotheses (Figure 1) using an online survey distributed to stock investors that also members of stock investment virtual communities. The questionnaire contains four measures addressing the research questions. First, medium credibility and information credibility construct are adopted from Li and Suh (2015). Next, perceived usefulness construct is adapted from (Tseng and Wang, 2016). Lastly, information adoption construct is adopted from Sussman and Siegal (2003). Responses to all the item measures were captured using six-point Likert-type scales. We avoid using odd number Likert scale due to respondents' tendency to choose the median or neutral statement. Since the research is conducted in Indonesia, each item on the questionnaire is translated from English to Bahasa Indonesia to facilitate respondents' understanding.

We received completed responses from 406 stock investors that are members of at least one stock investment virtual community. The virtual communities are mostly based on instant messaging or social media, with WhatsApp, is the most popular platform. After deleting unmatched and/or missing cases, the final sample consisted of 333 matched questionnaires. Table 1 summarizes the demographic data of our respondents. According to F. Hair Jr *et al.* (2014), the ideal sample size should be at least ten times the number of indicators. Since this study are measured by using 22 indicators, the minimum sample is reached.

Table 1. Demography of Respondents

Variable	Items	Frequency	Percentage
Sex	Male	260	78,08%
	Female	73	21,92%
Age	< 20	67	20,12%
	21-25	144	43,24%
	26-30	49	14,71%
	31-35	28	8,41%
	35-40	21	6,31%
Income (in IDR per month)	< IDR1 million	75	22,52%
	IDR1- 5 million	103	30,93%
	IDR5 - 10 million	84	25,23%
	> 10 million	71	21,32%
	< 1 year	168	50,45%
Duration of becoming a member of stock investment virtual community	1-2 year	96	28,83%
	2-3 year	38	11,41%
	4-5 year	12	3,60%
	> 5 year	19	5,71%

4. RESEARCH RESULTS

4.1 Measurement Model Evaluation

The measurement model was assessed to ensure the appropriate use of instruments, including its convergent validity, discriminant validity, and reliability. To assess the reliability of construct, the authors ensure that the composite reliability values are greater than 0.70 as suggested by Robinson *et al* (1991). Table 2 summarizes the loading ranges, AVE, and composite reliability for all items. Meanwhile, to ensure construct validity, all measures were adapted from existing validated scales whenever possible. Additionally, the convergent validity is measured by using loading factors and AVE. While the loading factors must be greater than 0.60. the AVE value must be greater than 0.50. Lastly, Table 3 shows that the square root of the AVE for each construct is higher than correlations between constructs, suggesting that the measurement model have good discriminant validity.

Table 2. The Results of Reliability and Validity Testing for the Constructs.

Factors	Items	Loading Factor	AVE	CR	Factors	Items	Loading Factor	AVE	CR
MT	MT1	0.68	0.501	0.716	INT	I1	0.75	0.610	0.861
	MT2	0.641				I2	0.855		
	MT3	0.706				I3	0.821		
IC	IC1	0.874	0.704	0.877	MD	I4	0.686	0.507	0.860
	IC2	0.862				MD1	0.758		
	IC3	0.895				MD2	0.691		
PU	PU1	0.86	0.673	0.861		MD3	0.729		
	PU2	0.804				MD4	0.685		
	PU3	0.852				MD5	0.654		
IA	IA1	0.795				MD6	0.75		
	IA2	0.808							
	IA3	0.857							

MT: Medium Transparency, IC: Information Credibility, PU: Perceived Usefulness,
IA: Information Adoption, INT: Interactivity, MD: Medium Dependency, MC: Medium Credibility

Table 3. Correlations between constructs

	IA	PU	IC	MC
IA	0.820			
PU	0.763	0.839		
IC	0.743	0.782	0.877	
MC	0.666	0.664	0.671	0.856

4.2 Structural Model Evaluation

For all hypotheses, we then conducted an evaluation on the structural model using AMOS 24. All proposed hypotheses were fully supported with significance level $p = 0.05$ (Table 4). Medium credibility is proved to be the antecedent of both information credibility and perceived usefulness (p -value for H1 & H2 are less than 0.05). Next, information credibility significantly influences perceived usefulness (p -value of H3 < 0.05). Lastly, H4 and H5 show that both predictors appeared to significantly predict information adoption: information credibility (p 0.017) and perceived usefulness (p 0.003). Additionally, the R^2 value was used to assess the coefficient of determination. R^2 for information adoption, perceived usefulness, and information credibility are, respectively, 0.661, 0.649, and 0.473. R^2 value for information adoption from stock investment virtual communities is 0.473 suggesting that 47.3% of the variance in information adoption of stock investment virtual communities can be explained by factors in the research model.

Table 4. Hypothesis Testing Result

Hypothesis	Path	Estimate	p	Results
H1	Medium Credibility → Information Credibility	0.688	0.007	Accepted
H2	Medium Credibility → Perceived Usefulness	0.275	0.005	Accepted
H3	Information Credibility → Perceived Usefulness	0.591	0.004	Accepted
H4	Information Credibility → Information Adoption	0.298	0.017	Accepted
H5	Perceived Usefulness → Information Adoption	0.559	0.003	Accepted

Figure 2. Research Result

5. DISCUSSION AND IMPLICATIONS

In light of the approval of H1 (medium credibility influence information credibility), we extended existing findings from Li and Suh (2015). Additionally, our result establishes an expansion of the existing findings from Eysenbach, (2008) in the now context of stock investment virtual communities. Our study also found that information credibility influences perceived usefulness. This finding also strengthens the findings of mobile word-of-mouth study by Erkan and Evans, (2016) and adopting information in food products purchase by Hussain *et al.* (2018). Through this research, the author further strengthens the theory of information credibility with information usefulness, as discussed by Hajli, (2018) and Ko *et al.*, (2005). This study also found that users of stock investment virtual communities tend to adopt credible information. The process of adopting information in this study is characterized by users agreeing to information, then users follow the suggestions contained in information, and users are encouraged to make decisions based on information. Therefore, it can be concluded that before adopting stock information the user usually considers the information credible. This finding supports the research of Cheung *et al.*, (2009) which concluded that the credibility of information affects the adoption of information. Finally, perceived usefulness also affects information adoption. Users will tend to adopt stock information if they feel the information is useful to them. In addition to assessing its credibility, the user also assesses whether information is useful to him before he adopts the information.

This study offers both theoretical and practical implication. First, through this research, the author proves that the medium credibility influences information adoption through perceived usefulness and information credibility. Several previous studies have indeed discussed the relationship of medium credibility with information credibility as well as the relationship between information credibility and information adoption (Cheung *et al.*, 2009; Li and Suh, 2015). However, not many studies have discussed how the credibility of a communication medium influences the adoption of information by its users.

Based on the results of the analysis, the authors found that the credibility medium has a direct correlation with perceived usefulness. Several previous studies that discussed the usefulness of information in virtual communities usually linked it to information credibility and the quality of arguments (Huang and Kuo, 2014; Erkan and Evans, 2016; Hussain *et al.*, 2018). Therefore, the results of this study are expected to provide a new perspective on the relationship between the credibility and perceived usefulness medium. This study also confirms the dimensions of the medium credibility outlined by Li and Suh (2005). Previous research on the credibility medium generally discussed the medium credibility attribute based on the features or design of a communication medium and not many focused on discussing medium credibility from the user's point of view.

On the practical level, our findings suggest that stock investors can assess the medium credibility, or in this context, the credibility of virtual communities to improve the possibility of getting credible and useful information. One can evaluate the interactivity of medium, along with the medium dependency and medium transparency. Additionally, as this study shows that interactivity is part of medium credibility, social media that focus on stock investment such as Stockbit can improve their interactivity to ensure achieving better information credibility. By providing features that encourage users to interact with each other, the information credibility and perceived usefulness will improve. Thus, increasing the information adoption in investors.

6. CONCLUSION

This paper concludes that; medium credibility influences information credibility and perceived usefulness. This indicates that the more credible a virtual community is, the information distributed in the virtual community will be perceived as more useful and credible by users. Additionally, this study also found that medium credibility has more influence towards information credibility than perceived usefulness. Meanwhile, information credibility affects perceived usefulness with a level of correlation that can be categorized as strong. Thus, it can be concluded that credible information will be considered more useful for users of stock investment virtual communities. Lastly, information credibility and perceived usefulness influence information adoption behavior, with perceived usefulness having a more significant influence compare to information credibility. Thus, it can be concluded that in adopting information in stock investment virtual communities, users are more concerned with the use of information than the credibility of the information.

This study also has several limitations. Firstly, the number of respondents who filled out this questionnaire were 330 respondents. Meanwhile, the number of stock investors in the Indonesian capital market has reached around 851,662 as of December 2018 (KSEI, 2018). Thus, the number of samples that are relatively small compared to the total population may not reflect the behavior of all stock investors in Indonesia. Additionally, the author suggests for future study to compare several social media or instant messaging applications that have different characteristics while using medium credibility theory.

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