

The Effect of Artificial Intelligence Utilizing in Social Media Marketing

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Abstract

The development of Artificial Intelligence (AI) provides many opportunities in the current business structure. AI is used in various industries with different purposes, including creating engagement with their customers. Financial technology (fintech) companies also utilize AI to give product recommendations or targeted ads based on the algorithms which detecting customers' record. This study intends to investigate whether using AI into social media marketing might increase customers' desire to use goods or services provided by fintech firms. A total of 121 respondents were involved in this study with Structural Equation Modelling (SEM) as the analysis method. The result indicates that performance expectancy, utilitarian motivation, and perceived value co-creation influence the intention to invest.

Keywords: artificial intelligence; social media marketing; fintech; investment

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Introduction

In recent years, the development of Artificial Intelligence is very rapid due to its high usage in various industries. The presence of AI provides an easiness to manage big data for companies, so that it can be used to produce better information needed in order to develop their business (Perez-Vega, Kaartemo, Lages, Borghei Razavi, & Männistö, 2020). The use of AI has indirectly driven rapid progress for retail companies, especially in utilizing existing data to make sales prediction, strategic decisions, visual appearances of products and customers engagement (Dodds, Monroe, & Grewal, 1991).

The use of AI is also very important in marketing areas. In business practice, marketing has implemented AI, such as robots to greet and serve consumers, data analysis to offer price adjustment and prediction, recommendation systems to personalize product and promotions, language processing to drive consumer engagement, optimize experiences, and identify sentiment analysis (M. H. Huang & Rust, 2021). Therefore, research on the use of AI to social media marketing is required to determine the variables that affect customer behavior patterns so

that businesses may develop suitable marketing plans. Data about consumers can be a very useful source of information when creating marketing plans, since it is well known that AI differs from human intelligence because it is based on quick data processing. In AI, intelligence can be broadly defined as the ability to process and transform data into information to produce information about goal-directed behavior (Paschen, Wilson, & Ferreira, 2020). Furthermore, AI is a branch of science that helps machines find solutions to complex problems in a more human-like manner (Dumitriu & Popescu, 2020).

In the financial sector, AI can be used in predicting stock prices, sales, and market segmentation problems (Tiwari, Srivastava, & Gera, 2020). Thus, AI is also implemented in financial technology. Various fintech companies, which their business process utilizing application, usually utilize AI to develop their business and increase their users. In many ways, AI is also used to generate marketing strategies through social media. The alternative to traditional information sources is social media (Bank, Yazar, & Sivri, 2019). It illustrates that social media as a source of information data is very important and

should not be ignored by companies. Identification of how the data is used as an AI-based marketing medium is a novelty that must be carried out in a study.

Previous studies have also demonstrated the significance of social media marketing and AI (Dumitriu & Popescu, 2020). One of the common implementations in fintech the companies is to recommend users a suitable investment type which is based on their profile or historical record. This alternative is commonly used by other industries, such product recommendations by e-commerce companies. AI-driven in marketing is ushering in the era of so-called mass personalization based on the scale businesses and consumers need. AI enables marketing system to create a condition where companies know customer preferences from their past behavior. This situation will not occur without data that is well organized and documented. Giving individualized recommendations helps users make better decisions, improves the overall user experience, helps businesses keep consumers, and boosts business performance (Basu, 2021; Tian, Yang, Yin, & Su, 2020).

Therefore, this study aims to investigate if the behavior of the millennial generation's intention to invest through fintech is affected by the usage of AI in social media marketing. The variables that will be used in this study are performance expectancy, utilitarian motivation, perceived value co-creation and intention to invest.

Literature Review

Millennial Generation and Social Media

There are two groups of millennial generation, those who are 18-35 years old, called as young adults and those who are 36-38 years old, called as adults (Duh & Dabula, 2021). Several studies have confirmed that millennial generation is characterized by people who born between 1980 – 2000 (Parment, 2013) and 1982 – 2002 (Rita, Brochado, & Dimova, 2019).

Millennials are known as generation who are really opened to technology. It occurs due to the exposure of internet (Parment, 2013). Moreover, this generation also uses social media for personal education and finding information (Rasmussen, Punyanunt-Carter, LaFreniere, Norman, & Kimball, 2020). According to earlier studies, social media is becoming into a significant marketing aspect that can contribute to the success of a product, service, or business as a substitute source of information and expertise (Dwivedi, Kapoor, & Chen, 2015). Social media has established itself as a low-cost platform for information exchange that is open to all parties (i.e., consumers, enterprises, organizations, etc), whether they are looking to learn, educate, develop, promote, or advertise a developing idea (Dwivedi et al., 2015). The process of using social media to plan, communicate, provide, and trade products and ideas that provide value for businesses and stakeholders is known as social media marketing and communication (Tuten & Solomon, 2017).

Performance Expectancy and Intention

Performance expectations can be interpreted as people believe that by using new systems one can achieve profits and performance in accordance with expectations (Rana, Dwivedi, Lal, Williams, & Clement, 2017). Various new systems have made one's work easier not only in industrial sector, but also in the financial sector (Fatima & Niladri, 2019). Fintech is one of the platforms that people can use in supporting their financial activities. Through fintech, people have been able to save time to achieve their financial goals (Jiwasiddi, Adhikara, Adam, & Triana, 2019). Due to its convenience, fintech makes individuals have an intention to use this system and also facilitate them to make an investment easily. A study states that the ease felt by individuals will lead to an attitude which later encourages them to do something (Lin & Kim, 2016). Other research also states that social media

can encourage someone to have an interest in something, including investing (Shareef, Baabdullah, Dutta, Kumar, & Dwivedi, 2018).

The first hypothesis in this study is as follows:

H1: Performance expectancy has a positive influence on intention to invest

Utilitarian Motivation and Intention

Utilitarian motivation reflects consumers' general evaluation of functional advantages and tradeoffs (Overby & Lee, 2006). It is consistent with prior research that showed utilitarianism describes consumer actions intended to maximize already-existing utility (Okada, 2005). Accordingly, from this viewpoint, consumers use a product because of the advantages it offers. Benefits referred also the convenience that users can obtain (Zeithaml, Parasuraman, & Malhotra, 2002) and increased preference (Schulz, Schlereth, Mazar, & Skiera, 2015). Social media serves many different purposes, including spreading knowledge and inspiring people to do specific actions (Fosso Wamba, Bhattacharya, Trinchera, & Ngai, 2017). Due to their higher levels of inventiveness and appeal, people are generally more interested in information obtained through social media (Dwivedi et al., 2017). In order to predict a person's response and the emergence of a desire to make an investment, motivation through social media is crucial (Mazambani & Mutambara, 2019). The second hypothesis in this study is as follows:

H2: Utilitarian Motivation has a positive influence on intention to invest

Perceived Value Co-Creation and Intention

Co-creation is defined as a desired goal for companies to be able to identify consumer needs and wants, and further improve the process (Manser Payne, Peltier, & Barger, 2018). In the end, consumers are always co-creators of value, while perceptions and experiences are very important in determining that value (Vargo & Lusch, 2008). In behavioral theory research, consumer intentions are seen as a separate psychological concept from attitudes (Honkanen, Verplanken, & Olsen, 2006). In addition, earlier

research has demonstrated the importance of attitudes as predictors of consumer intentions and future behavior (Dilmeri, King, & Dennis, 2017). According to research, consumers are more likely to use a certain service if they have more favorable opinions or impressions about it (Bagozzi & Warshaw, 1990). The relationship between consumers and companies in creating value can provide benefit for both parties. Thus, the last hypothesis in this study is as follows:

H3: Perceived value co-creation has a positive influence on intention to invest

Methods

In this study, SmartPLS software was employed in structural equation modeling (SEM). SEM is a method for multivariate analysis that combines multiple regression with factor analysis, enabling researchers to look at the relationship between independent and dependent variables at the same time (Hair, Black, Babin, & Anderson, 2014). In this study, the construct reliability (CR), confirmatory factor analysis (CFA), and average of variance extracted (AVE) values are used to assess the validity and reliability of the data. If it is 0.7, the CFA and CR values are proven to be good, and the AVE must be 0.7 (Hair et al., 2014). The inner model is additionally used in this work to forecast the causal connection between latent variables. By comparing the R-square construct value and measuring the Q-square value, the inner model was assessed. In order to examine the suggested research model shown in Table 1 and a total of 14 indicator statements were used in this study.

Results and Discussion

There were 121 respondents from Indonesia's younger generation for this study. Table 2 provides a summary of the respondents' demographic-based characteristics. The result shows that women respondent dominated this study as many as 84 people (69.49%). In addition, most of the respondents are students (61.98%) because this research is aimed at the younger

generation. Thus, it becomes natural that the last education owned by most of the respondents was high school (80.99%). Interestingly, Instagram is the most widely used by respondents with a total of 84 users (69.42%). Instagram is also known as social media which utilizing algorithms. A report by Hootsuite and We Are Social stated that the millennial and Z generation dominate the usage of social media in Indonesia (Kompas, 2021).

According to Table 3, this study has convergent validity and reliability that satisfy the criteria because all values are within the acceptable range and the AVE and CR values are greater than 0.50. Additionally, discriminant validity complies with the standards already in place. The findings also indicate that the intention to invest variable has an R² value of 0.650, which means that performance expectations, utilitarian motivation, and perceived value co-creation can account for 65% of the variation in intention, with

the remaining 35% being explained by factors outside of this research model. The variety of data from this structural model is also described in Q² with the same amount of 65%.

Furthermore, this study also found the results contained in Table 4 and Figure 1. In Figure 1, it can be seen that all hypotheses in this study are supported based on a t-value of more than 1.96. The results of this study indicate that the performance expectation hypothesis encourages the intention to invest with a t-statistic value of 4.773 and the effect value of 0.366. This is understandable considering that performance expectations refer to individual expectations of something, in this case investment, which then encourage them to invest. This finding is in line with the previous research that states performance expectations can encourage intention (Rana et al., 2017).

Table 1. Indicator Statement

	Statement	Source
PE1	I find that social media advertising is useful in my daily life	(Venkatesh, Morris, Davis, & Davis, 2003)
PE2	Using social media advertising increases my chances of achieving tasks that are important to me	
PE3	Using social media advertising helps me to accomplish tasks more quickly	
PE4	Using social media advertising increases my productivity	(Anderson, Knight, Pookulangara, & Josiam, 2014)
UM1	I find that a recommendation feature on social media is useful to determine my investment	
UM2	I find that a recommendation feature on social media is reliable	
UM3	I find that a recommendation feature on social media for correct information for products I need.	(Lalicic & Weismayer, 2021)
PV1	Using AI in investment is worthwhile	
PV2	Using AI in investment offers value	
PV3	Using AI in investment is a good deal	
PV4	Using AI in investment is a good value	(Venkatesh et al., 2003)
II1	I will invest products that are recommended on social media	
II2	I desire to invest products that are promoted on social media	
II3	I am likely to invest products that are promoted on social media	

Table 2. Respondent Profile

Category	Information	Total Respondent	Percentage
Gender	Female	84	69.42%
	Male	37	30.58%
Occupation	Student	75	61.98%
	Employee	36	29.75%
	Entrepreneur	10	8.26%
Latest Education	Senior High School	98	80.99%
	Undergraduate	23	19.01%
The most used social media for finding information	Instagram	84	69.42%
	Twitter	15	12.40%
	Facebook	12	9.92%
	YouTube	10	8.26%

Source: Processed data (2023)

Table 3. Output of Measurement

Construct	Item	SFL	AVE	CR
Performance Expectancy	PE1	0.809	0.746	0.922
	PE2	0.929		
	PE3	0.866		
	PE4	0.848		
Utilitarian Motivation	UM1	0.865	0.732	0.891
	UM2	0.879		
	UM3	0.822		
Perceived Value Co-Creation	PV1	0.738	0.663	0.887
	PV2	0.879		
	PV3	0.854		
	PV4	0.778		
Intention to Invest	II1	0.869	0.753	0.902
	II2	0.847		
	II3	0.887		

Source: Processed data (2023)

Interestingly, the utilitarian motivation hypothesis on intention to invest has the highest t-statistic value, which is 5.561 with the effect of 0.415. It was discovered that utilitarian motive could positively affect the intention to invest. This is understandable given that artificial intelligence uses data to provide knowledge that is then managed to provide benefits based on the requirements of its users (Perez-Vega et al., 2020). Therefore, it makes perfect sense that customers who prioritize the advantages of the products or services they use will also want to utilize them. The findings of this study are

consistent with a number of earlier studies that have found that consumers may be motivated by their perceived benefits to purchase goods (L. T. Huang, 2016; Oh & Yoon, 2014; To, Liao, & Lin, 2007).

Furthermore, perceived value co-creation has a positive effect on providing intentions with the t-statistic value of 2.903 and the effect of 0.170. This is understandable because artificial intelligence forms information based on the behavior or actions of consumers which then makes it easy for companies to offer products or services in accordance with the habits of these

consumers. The findings of this study are corroborated by earlier research, which shows that AI can deliver services in line with the value that

consumers think they are receiving (Lalicic & Weismayer,2021).

Table 4. Output of Hypothesis Testing

Hypothesis	Effect	t-statistic	p-value	YES/NO
H1: Performance Expectation → Intention to Invest	0.366	4.773	0.004	Yes
H2: Utilitarian Motivation → Intention to Invest	0.415	5.561	0.000	Yes
H3: Perceived Value Co-Creation → Intention to Invest	0.170	2.903	0.000	Yes

Source: Processed data (2023)

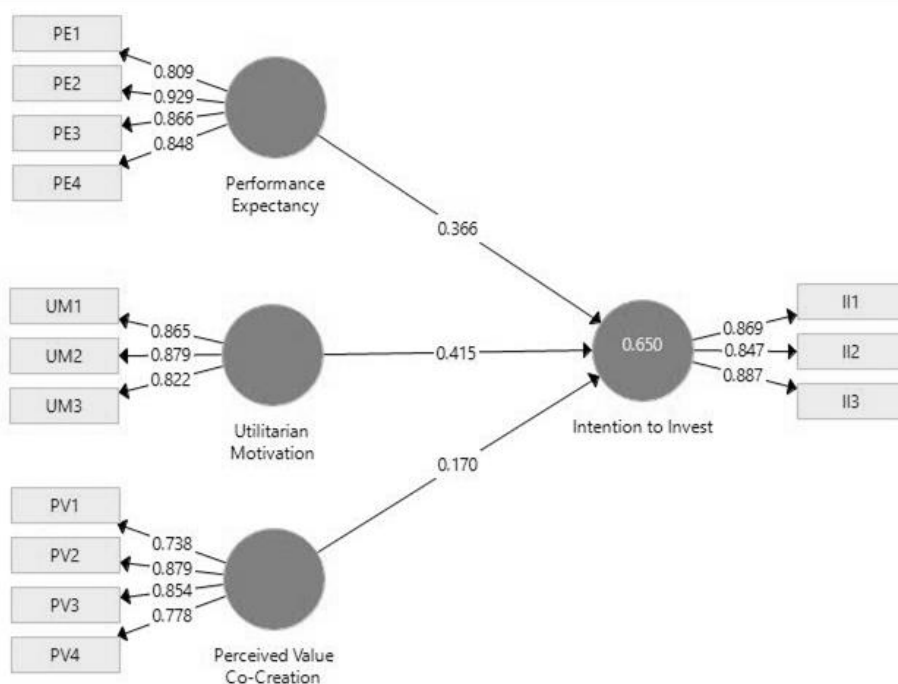


Figure 1. Theoretical Framework

Moreover, research conducted in the field of tourism also revealed the same thing that the joint value formation by consumers towards a tourist destination has a positive influence on consumers to have a desire in visiting a destination (Xu, Tan, Lu, Li, & Qin, 2021). Electronic word of mouth (e-WOM) research demonstrates that customer behavior on social networking sites and shared value creation will assist marketers in creating new methods for disseminating information about their products on networking sites (Hasan & Lim, 2021). Thus, the perceived value co-creation in

social media marketing is also able to encourage consumer intentions to invest.

Conclusions

Understanding and improving the effectiveness and efficiency of marketing on social media platforms for businesses can be significantly aided by this study on the application of AI in social media marketing. Additionally, this research helps advance theoretical understanding of the patterns that influence customer behavior. This research can contribute to the development of theory, especially the theory of technology acceptance considering the use and development

of AI continues to evolve from time to time. In addition, this study can provide deeper insights into understanding consumer behavior and marketing strategies, so that the use of AI in social media marketing can be further optimized and adjust the intended marketing targets.

This increasing technological development can provide convenience for consumers and companies as users. The presence of artificial intelligence also makes it easier for companies to map consumer needs based on their preferences. This certainly needs to be developed further, although at the same time these technological advances can eliminate consumer privacy. The results of this study underline that performance expectancy, utilitarian motivation and perceived value co-creation are able to influence consumers' intention to invest based on the social media they use. As a result, fintech businesses can use the study's findings to communicate with customers while still respecting their privacy. This research still has significant limits, despite the fact that it is helpful for businesses in the marketing or other connected areas. Uncertainty about the respondent's state of condition may arise when data is collected through an online system. Given that artificial intelligence is a topic that is very intriguing to discuss, future research can include more factors (i.e., hedonic motivation, privacy, security, etc) to improve the study's findings.

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