INTERNATIONAL JOURNAL OF INNOVATION IN ENTERPRISE SYSTEM

The Effect of Motivation-Opportunity-Ability (MOA) Framework in SME's Social Media Marketing Adoption

Aulia F. Hadining[1*]

[1] Industrial Engineering Department, Universitas Singaperbangsa Karawang
Jl. HS.Ronggo Waluyo, Puseurjaya, Kec. Telukjambe Tim., Kabupaten Karawang, 41361, INDONESIA

[*]Corresponding Author: aulia.fasha@gmail.com

ARTICLE INFO

ABSTRACT

This research aimed to find out the factors which affected SMEs (small and medium sized enterprises) in adopting Facebook Advertisement. The factors utilized adoption model which has been developed in previous research by inserting Opportunity and Ability factors as a moderating effect between the influence of intention to use facebook Advertisement toward the adoption of facebook Advertisement. The background of this study was the need for the demand for the use of information technology, especially social networking in SME communication with consumers. This was intended to make SMEs survive in current technological developments. The model used in this research consisted of ten variables with nine hypotheses. Based on a survey of 100 SMEs in Indonesia, it was found that social image and perceived usefulness had a positive influence on intention to use Facebook Advertisement. However, there was no moderation effect from the Opportunity and Ability variable groups toward the relationship between Intention to use Facebook Advertisement to Facebook Advertisement Adoption.

1. Introduction

The development in technology and means of communication have given change and new direction in company strategy. One of new direction in company strategy is by using social media to increase social networking. One means of social media in corporate strategy business operations is to increase company value, profits, and competitiveness of the company [1, 2]. The use of social media in corporate strategy is one way to improve corporate social networking [1]. Social media has changed things, including how companies communicate with consumers, deliver their services, and integrate IT systems [3, 4]. One marketing utilizing social media platforms is using Facebook. Indonesian internet users on Facebook in 2019 is 76% of the total internet users in Indonesia, while the number of internet users in Indonesia reaches 63.5% of the total population in Indonesia [5].

Therefore, it can be concluded that the penetration of marketing through Facebook is quite large. One of the platforms for marketing using Facebook is Facebook Advertisement. Previous research revealed that Facebook Advertisement is an effective tool which can be used to communicate and promote products and organizations brands [6-8]. Facebook Advertisement can be used in various types of businesses without requiring a lot of resources. In fact, SMEs can use Facebook Advertisement for their online marketing without requiring high costs and high IT capabilities [9].

SMEs are one of the main contributors in the country's economic development [10]. To be able to survive in business, small and medium-sized enterprises (SMEs) is encouraged to be able to adopt technology in their business strategy [11]. Companies and SMEs which do not quickly adopt new technology will drop behind [12]. Therefore, many parties support for SME to adopt new technologies especially the Government [11]. This condition is also common in Indonesia, there are still many SMEs which have not adopted technology yet, especially Facebook Advertisement, in communicating and promoting their products [11, 13]. This information is supported by preliminary study results. Preliminary studies are carried out with interviews with several SMEs stating that there are still many SMEs that have not used Facebook Advertisement to market their products online. Therefore, research is needed to find out the factors that can be used to encourage the adoption of Facebook Advertisement by SMEs. Research conducted by Hadining and Sukanta [7] revealed that for SMEs to adopt Facebook Advertisement, factors needed to encourage adoption.

By knowing the importance use of Facebook Advertisement in SMEs business strategy, This research aimed to determine the factors needed by SMEs in adopting Facebook Advertisement. This research used a research model that has been developed by Hadining and Sukanta [7] to explore the factors needed in the adoption of Facebook Advertisement by SMEs.

2.   Theoretical Background

2.1 Facebook Advertisement

One of most-used social medias is Facebook [14], that has more than 2 billions users worldwide [15]. In addition to a large enough user, Facebook is a social media which can be part of a business strategy. This is because of its ability can be modified the needs of users and it has a constant involvement with content on Facebook One of the features in Facebook which can be used in online marketing is Facebook Ads. It allows users to promote products based on geographical location, gender, age, and keywords according to the product profile you want to achieve. Facebook advertising can be a marketing tool for SMEs which is more cost effective and efficient compared to other internet-based marketing [16], [17].

2.2 Motivation-Opportunity-Ability (MOA) Framework

Previous research on social media, including Facebook only discusses internal and external factors in the use of social media [10]. Other studies discuss the technological, environmental and organizational context of enterprise system adoption [18]. Some other research uses several theories such as Theory Reasoned Action (TRA); the Theory of Planned Behavior (TPB); the Technology Acceptance Model (TAM); The Diffusion of Innovation Theory (IDT); and the Technological, Organizational and Environmental Framework (TOE) [11]. There is only limited research that use the Motivation-Opportunity-Ability (MOA) Framework to determine the adoption factor. The Motivation-Opportunity-Ability (MOA) Framework is used to accommodate motivational factors, opportunity factors and ability factors that have not been described in adoption theories in previous studies. In general, some studies only describe the theory of motivation for adoption, both internal and external motivation. MOA framework was first used to measure customer behavior in purchasing and processing brand of product [19]. This framework is also used to find out the factors which affect doctors to adopt Electronic Medical Records [20]. In the development, this framework has been widely used to understand individual behaviour based on three factors which are motivation, opportunity, and ability [21]. In the MOA Framework, in addition to the Motivation factor, there are Opportunity and Ability factors. Opportunity is the availability of time and conditions that allow the desired action to be obtained [19]. Related to the adoption of Facebook Advertisement in this study, Opportunity is the availability of time, information, opportunities, and various conditions that enable SMEs to adopt Facebook Advertisement. Ability is someone's perception of their ability to obtain the desired results [19]. In this study, Ability is the perception of SMEs about their ability in the past to the present to be able to use and adopt Facebook Advertisement. It can conclude that, Motivation is individual interest and desire to produce a behaviour. Opportunity is an external factor which makes manifesting behavior easier or more difficult. Ability is an ability owned by an individual [20-22]. Previous research conducted by Hadining and Sukanta [7] has defined the factors which affect SMEs in adopting Facebook Advertisement. However, in previous studies just described the development of the framework used for the adoption of Facebook ads using MOA Framework. In previous studies, there was no MOA Framework testing using real field data. In this research, measurements will be made based on data obtained to obtain the factors which most significantly affect SMEs in adopting Facebook Advertisement.

3. Research Hypotheses

This research aimed to find out factors which affected SMEs in adopting Facebook Advertisement. These factors were summarized in a research model which had been developed by Hadining and Sukanta [7]. This research is a continuation of research conducted by Hadining and Sukanta [7], therefore, this research directly uses the hypothesis that was developed previously. The relationships between variables and hypotheses used are shown by the research model in Fig. 1. This is done because there is no previous research that discusses the use of the MOA Framework and testing data in its effect on the adoption of Facebook Advertisement. Based on theory, there are several variables used to measure the use of Facebook advertisement (FA), in this study there are 10 variables. These variables were Social Image (SI) and Perceived Usefulness (PU) which were included in the Motivation factors category. SI is the understanding of SMEs in the use of innovation that can improve their position in social status [6]. Meanwhile, Perceived Usefulness is a person's assumption that technology can provide benefits to its users [23, 24]. Infrastructure (IN), Past Experience (PE), and Self Efficacy (SE) variables were incorporated in the Ability factors. Trial of Faebook Advertisement (FAT) Variables, Information Access (ATI), and The Ability System to Adapt (SA) are incorporated in Opportunity factors. Another variables to explain this relationship are SMEs Intention to Use Facebook advertisement (ITUFA) and Facebook Advertisement Adoption (FAA) There are nine hypotheses [7] which were used in this study based on the research model which can be seen in Fig. 1, as follows:

Hypotheses 1: SMEs ITUFA positively effects their FAA
Hypotheses 2: SI has a positive impact on SMEs ITUFA
Hypotheses 3: PU has a positive impact on SMEs ITUFA.
Hypotheses 4: IN positively moderates the relationship between ITUFA and FAA
Hypotheses 5: SMEs PE positively moderates the relationship between ITUFA and FAA
Hypotheses 6: SMEs SE positively moderates the relationship between ITUFA and FAA
Hypotheses 7: FAT positively moderates the relationship between ITUFA and FAA
Hypotheses 8: ATI positively moderates the relationship between ITUFA and FAA
Hypotheses 9: SA positively moderates the relationship between ITUFA on FAA.

4. Methodology

This research aimed to find out factors which affected adoption of Facebook Advertisement conducted by SMEs. Involved variables were used in testing models quantitatively and validly. Quantitative tests were conducted using Partial Least Square (PLS) which was part of a strong and flexible Structural Equation Model (SEM) in the handling. Sampling was carried out using purposive sampling technique with a total sample used of 100 samples. Furthermore, 100 questionnaires were distributed directly by visiting the SME actors.
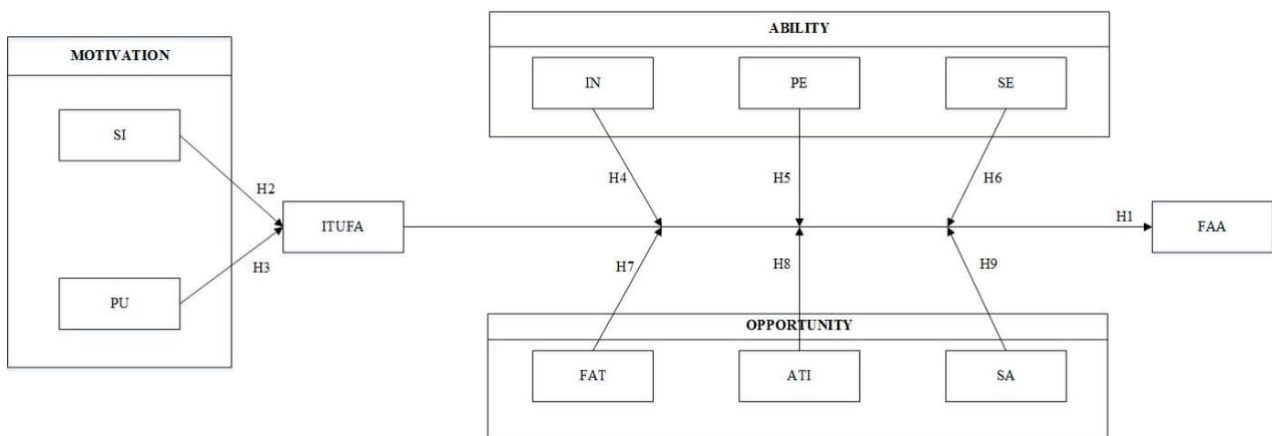

Fig. 1 Research Model [7] used, The model in this study uses 10 variables, there are FAA, ITUFA, SI, PU, IN, PE, SE, FAT, ATI, and SA variables with 9 hypotheses

This research had 10 variables which were FAA, ITUFA, SI, PU, IN, PE, SE, FAT, ATI, and SA. The total indicators used in this research were 40 indicators. Each variable consisted of several indicators, Facebook Advertisement variable used 4 indicators, Intention to Use variable used 2 indicators, Social Image variable used 6 indicators, Perceived Usefulness variable used 6 indicators, Past Experience variable used 4 indicators, Self Efficacy variable used 4 indicators, Facebook Advertisement Trial variable used 2 indicators, the Access to Information variable used 4 indicators, the System Adaptability variable used 3 indicators (Appendix A). All indicators are statements which were measured using a Likert

scale with a value range of 1-6. Ech score had each meaning in which 1 for "Strongly Disagree", 2 for "Disagree", 3 for "Rather Agree", 4 for "Quite Agree", 5 for "Agree", and 6 "Strongly Agree".

Questionnaires which had been distributed to respondents were then collected to conduct the analysis. This research used the assistance of SmartPLS 3.0 software to see the direction of the relationship and bootstrap used to assess standard errors and statistical T values.

5. Data Analysis and Results

Statement Model Partial Least Square (PLS) was used in analyzing the data. This method was chosen because the research model which was used involved more than one dependent variable. In addition, PLS was used because it has the ability to describe relationships between variables simultaneously. Data processing using PLS consists of two stages which are the outer model and the inner model. Outer models were assessed based on convergent validity, discriminant validity and reliability. Meanwhile, the inner model was based on the R-Square value and path coefficient.

Questionnaire are distributed to 100 SMEs which are as respondents of the research. The number of respondents was obtained from the calculation of the Slovin formula with 10% accurancy level [25] and the total population of SMEs in Indonesia of 1,271,440 units [26]. By using the Slovin formula the number of research samples is 99 units, then rounded to 100 units of SMEs. The research questionnaire consist of two parts. Part I which contains respondents 'demographic profile data, part II consists of statements related to SMEs' perceptions about the use of Facebook Advertisement. Questionnaires are distributed to SMEs directly using paper based questionnaires. Research respondents are SMEs located in the Karawang Indonesia area. Karawang is one of the largest industrial cities in Indonesia. Table 1 is a recapitulation of the results of respondents in questionnaire Part I.

Table 1- Demographic Profile of Respondent

Profile	Category	Frequency	Percentage
Gender	Male	42	42%
	Female	58	58%
	Total	100	
Age	Less than 21	6	6%
	21 – 30	31	31%
	31 – 40	28	28%
	41 – 50	24	24%
	51 – 60	11	11%
	60 and above	0	0%
	Total	100	
SME's Age	Less than 10	54	54%
	10 – 20	29	29%
	20 – 30	10	10%
	30 and above	7	7%
	Total	100	
Participating in SME's Organizations	Active	29	29%
	Not active	6	6%
	Not participate	65	65%
	Total	100	
The Use of Facebook Advertisement	< 5 years	17	17%
	> 5 years	4	4%
	Not using Facebook Advertisement	79	79%
	Total	100	

Table 1 is questionnaire result part I which states demographic data of respondents. From 100 respondents, there are 42% females and 58% males. Respondents are mostly 21-30 years old at 31%, 28% aged 31-40 years, 24% aged 41-50 years, 11% aged 51-60 years, and the rest were less than 21 years old. The duration of SMEs has been used to find out the age of SMEs. This can affect various things, including the resilience of SMEs in business and marketing. From100 respondents, only 7% of SMEs have been established for more than 30 years, 10% have been established for 20-30 years, 29% have been established for 10-20 years, and the remaining 54% are SMEs which have stood for less than 10 years. The results of the questionnaire finds that 65% of SMEs do not participate in organizations or associations. This can affect the update of information received by SMEs. The latest finding is the use of Facebook Advertisement, found that only 21% of SMEs have used Facebook Advertisement and 79% have never used it yet. Therefore, it can be concluded that the use of Facebook Advertisement is still quite low and there is not much access which can be used to obtain information about Facebook Advertisement.

5.1 Assessment of measurement model

In the stage of this model measurement, the most important thing is to test the validity and reliability of the latent variable to complete the assessment of the measurement model. Based on calculations made using the SmartPLS 3.0 software, 5 of 40 indicators were excluded from the model in order to meet the specified assessment criteria. Convergent validity was measured by looking at the loading value on each indicator in which the loading value which had to be met for each indicator was 0.7 [27]. The maintained indicator shown in Fig. 2 already had a loading value which approached or exceeded 0.7. This shows that the convergent validity had been fulfilled. Another test for convergent validity was to look at the value of Average Variance Extracted (AVE). A model can be considered to be good if it had a AVE value of more than 0.5 [27]. Based on Table 1, the resulting Average Variance Extracted (AVE) value exceeded 0.5 meaning the model meets convergent validity. Internal consistency reliability test was achieved by completing the composite reliability value which had to be worth 0.7 or more [27]. Based on the results presented in Table 1, most of the latent variables have met the composite reliability.
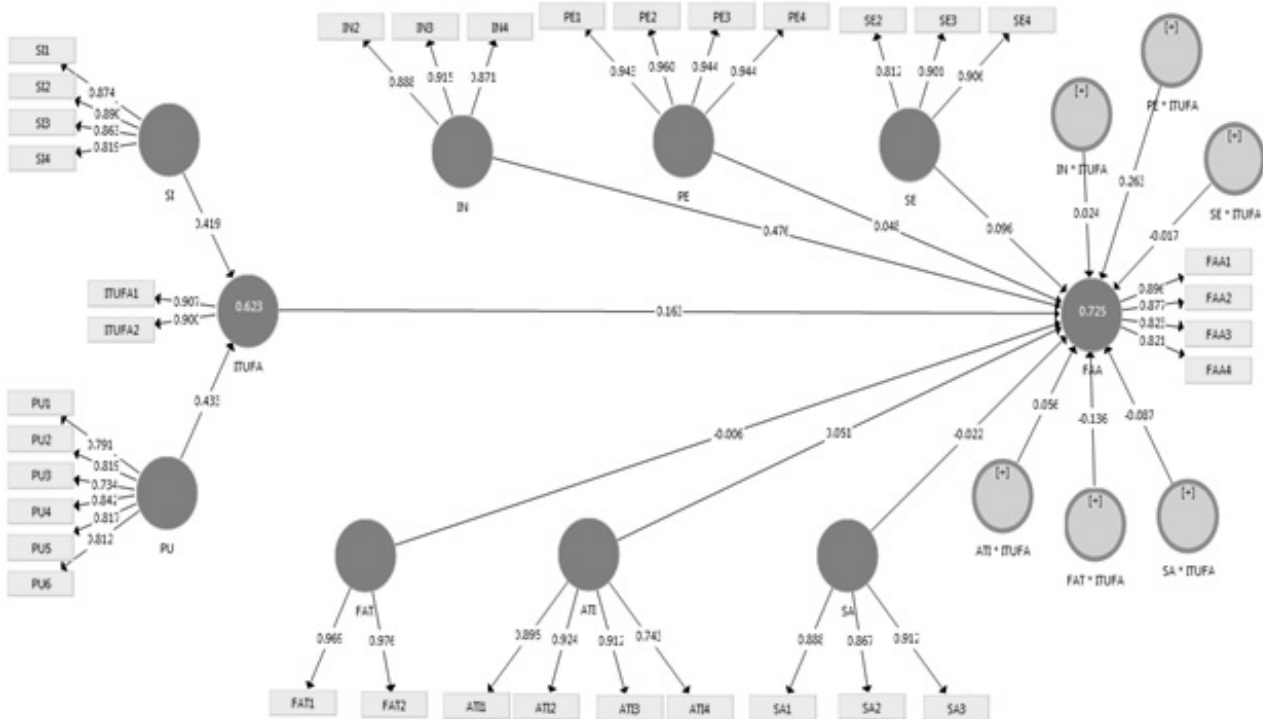

Fig. 2 Outer Loadings

Table 2-Results of Measurement and Structural Model, this table shows Convergent Validity Result with AVE Scores > 0.5, Reliability Test Results with Cronbach's Alpha Values > 0.7 and Composite Reliability Values > 0.7. Discriminant analysis Results. R-square values are evaluation of Structural Model

Variables	AVE	Cronbach's Alpha	Composite Reliability	R-Square
(FAA)	0.731	0.876	0.916	0.725
(ITUFA)	0.816	0.774	0.899	0.623
(SI)	0.743	0.885	0.920	0.000
(PU)	0.645	0.890	0.916	0.000
(IN)	0.795	0.884	0.921	0.000
(IN * ITUFA)	0.603	0.876	0.900	0.000
(PE)	0.898	0.962	0.973	0.000
(PE * ITU)	0.666	0.928	0.941	0.000
(SE)	0.764	0.845	0.906	0.000
(SE * ITUFA)	0.528	0.826	0.870	0.000
(FAT)	0.945	0.942	0.972	0.000
(FAT * ITUFA)	0.682	0.847	0.895	0.000
(ATI)	0.759	0.891	0.926	0.000
(ATI * ITUFA)	0.653	0.924	0.937	0.000
(SA)	0.791	0.868	0.919	0.000
(SA * ITUFA)	0.515	0.870	0.851	0.000

Table 3-The Vailidity of Discriminant Construct. All square root AVE values exceeded the correlation with other variables.

Variables	ATI	FAA	FAT	IN	ITUFA	PE	PU	SE	SI	SA
(ATI)	**0.871**									
(FAA)	0.688	**0.855**								
(FAT)	0.722	0.600	**0.972**							
(IN)	0.663	0.756	0.586	**0.892**						
(ITUFA)	0.572	0.622	0.566	0.630	**0.903**					
(PE)	0.720	0.575	0.921	0.614	0.549	**0.948**				
(PU)	0.711	0.852	0.685	0.759	0.733	0.653	**0.803**			
(SE)	0.867	0.691	0.625	0.744	0.591	0.719	0.776	**0.874**		
(SI)	0.692	0.772	0.547	0.842	0.729	0.548	0.714	0.675	**0.862**	
(SA)	0.491	0.503	0.455	0.491	0.672	0.430	0.545	0.448	0.571	**0.889**

Other reliability test of constructas by seeing cronbach's alpha value which had to exceed 0.7 [27]. According to the results presented in Table 2, it can be seen that all construct was reliable. Furthermore, the square root AVE value was tested against the intercorrelation of constructs with other constructs in the model to assess discriminant validity. The model was considered to have sufficient discriminant validity if the square root value of the AVE value produced is greater than the correlation between constructs and other constructs [27]. Table 3 showed that all square root AVE values exceeded the correlation with other variables.

According to the assessment result above, it can be concluded that the measurement model used has been quite satisfactory with the value of reliability, convergent validity, and discriminant validity. In addition, research was conducted hypothesis test.

5.2 Evaluation of the structural model

Bootstrap procedure was used to generate T statistic value which was used in significance testing of structural models. Analysis of inner models can be determined by looking at the value of R2. R-square (R2) shows the level of variability for each endogenous variable determined by other variables. Based on the results in Table 2, it can be seen that:

- Variables of SI and PU can explain 62.3% of variance in ITUFA variable.
- Variables of IN, PE, SE, FAT, ATI, SA, and ITUFA could explain 72.5% of variance in the FAA variable.

The result shows that there were many variables which affected significantly toward adoption of Facebook Advertisement. However, These results couldn't identify which variables had the most significant impact toward Facebook Advertisement Adoption to prove the hypothesis in this research.

Q-Square assesses how well the observational values generated by the model and its estimated parameters [27]. If the resulting Q-Square value exceeded 0, then it can be considered that the model had good predictive relevance [27]. This research produced a Q-square value of 0.896. Thus, it could be concluded that the model had good predictive relevance.

Hypothesis test was conducted by evaluating path coefficient on the inner model uses a two-way t test with a significance level of 5%. The path coefficient would be significant if the "T Statistics" value was more than 1.96. The results of the research hypothesis test could be seen in Table 4.

Table 4-Hypotheses Test Results

Hypotheses	Relations	Original Sample	Standard Deviation (STDEV)	T Statistics	P value	Supported
H1	ITUFA → FAA	0.163	0.113	1.436	0.152	*No*
H2	SI → ITUFA	0.419	0.114	3.667	0.000	*Yes*
H3	PU → ITUFA	0.433	0.093	4.646	0.000	*Yes*
H4	IN * ITUFA → FAA	0.024	0.077	0.313	0.755	*No*
H5	PE * ITUFA → FAA	0.263	0.163	1.609	0.108	*No*
H6	SE * ITUFA → FAA	-0.017	0.082	0.213	0.832	*No*
H7	FAT * ITUFA → FAA	-0.136	0.155	0.882	0.378	*No*
H8	ATI * ITUFA → FAA	0.056	0.064	0.878	0.380	*No*
H9	SA * ITUFA → FAA	-0.087	0.077	1.135	0.257	*No*

Based on Table 4, the results obtained indicated that Hypothesis 2 (H2) and Hypothesis 3 (H3) were accepted. Therefore, it can be concluded that Social Image (SI) and Perceived Usefulness (PU) had a positive and significant effect toward SMEs Intention to Use Facebook Advertisement (ITUFA).

6. Discussion

This research aimed to find out the factors which affected the adoption level of Facebook Advertisement by SMEs entrepreneurs and the significant factors directly or indirectly influenced by the adoption of Facebook Advertisement by SMEs. Based on the results of the structural model evaluation, there were 2 of 9 hypotheses proposed in the study that have a significant effect.

Based on data, Hypothesis 2 is accepted, this can conclude that Social Image had a significant effect on Intention to Use Facebook Advertisement. This was different from the results of previous research [6] which stated that there was no positive effect of Social Image on the intention to use Facebook Advertisement. This can be caused by the different study sample conditions from previous studies. The use of Facebook Advertisement can improve the social status of SMEs. The higher the level of social status, the higher the motivation of someone intending to use Facebook Advertisement. Based on the value of the factor weighting obtained the value of the contribution of Social Image to the Intention to Use Facebook Advertisement that was equal to 41.9%.

Hypothesis 3 is accepted, Perceived Usefulness had significant effect toward Intention to Use Facebook Advertisement. These results have differences with the results of previous studies [6] which stated that there was no significant effect between perceived usefulness of intention to use Facebook Advertisement. This could occur due to various factors, including differences in the conditions of the study sample in previous studies. Perceived Usefulness was included in the Motivation variable and could affect motives in adoption. Perception The perceived benefit is the understanding of SMEs that using Facebook Advertisement can improve work performance in an organization [6]. Based on the value of the factor weighting, it obtained the value of Perceived Usefulness contribution to the Intention to Use Facebook Advertisement variable that was equal to 43.3%.

First hypothesis (H1) states that SMEs ITUFA positively effects their FAA. Based on the results of research that has been conducted, it shows that Intention to Use Facebook Advertisement has no positive effect on Facebook Advertisement Adoption. This is evidenced by the t value of 1.436, in which the value is below 1.96 (t <1.96). Intention to Use Facebook Advertisement is the intention arising by someone in adopting Facebook Advertisement for marketing their products [7]. This research shows that the SMEs do not intend to adopt Facebook Advertisement in marketing their products. This can be caused by the age of SMEs who are still quite young, based on the results of the acquisition of demographic data in Table 1.

Fourth hypothesis states that IN positively moderates the relationship between ITUFA and FAA. Based on research that has been conducted, it shows that IN does not positively moderate ITUFA against FAA. This is proven by the t value of 0.363 in which the value is below 1.96 (t <1.96). Infrastructure is a facility resource which can be used in the adoption of Facebook Advertisement [7]. Therefore, it can be concluded that SMEs feel that the Infrastructure they have to support the adoption of Facebook Advertisement is still lacking.

Fifth hypothesis states that SMEs PE positively moderates the relationship between ITUFA and FAA. Based on research that has been carried out, it shows that PE does not positively moderate the relationship between ITUFA and FAA. This is proven by the t value of 1.609, in which the value is below 1.96 (t <1.96). Previous Experience is defined as experience in the use of technology in the past [7]. It can be concluded that SMEs lack experience in using Facebook Advertisement. This is in line with the demographic data obtained that there are still many SMEs that have never used Facebook Advertisement before.

Sixth hypothesis states that SMEs SE SE positively moderates the relationship between ITUFA and FAA. The results of this research indicate that SMEs SE does not positively moderate the relationship between ITUFA and FAA. This is evidenced by the t value of 0.213 in which the value is below 1.96 (t <1.96). Self Efficacy is the ability of SMEs to achieve activities related to Facebook Advertisement [7]. It can be concluded that SMEs in Karawang have no experience and do not use technology in supporting the use of Facebook Advertisement.

Seventh hypothesis states FAT positively moderates the relationship between ITUFA and FAA. According to research that has been conducted, it shows that FAT does not positively moderate the relationship between ITUFA and FAA. This is proven by the value of t value of 0.882, in which the value is below 1.96 (t <1.96). Facebook Advertisement Trial is an opportunity for SMEs to experience the features offered by Facebook Advertisement [7]. It can be concluded that SMEs in Karawang still do not know Facebook Advertisement and have never felt the benefits contained in the Facebook Advertisement feature.

Eighth hypothesis states that ATI positively moderates the relationship between ITUFA and FAA. Based on research that has been conducted, it shows that ATI does not positively moderate the relationship between ITUFA and FAA. This is proven by the t value of 0.878 in which the value is below 1.96 (t <1.96). Access to Information is an opportunity for SMEs to obtain information related to Facebook Advertisement features [7]. It can be concluded that there are still many SMEs in Karawang that have not received information about the features available on Facebook Advertisement. This can be caused by the lack of access to obtain information about the use and benefits of Facebook Advertisement. This result is supported by the data in Table 1 that most SMEs are not incorporated in SME associations as a means of obtaining information.

Ninth hypothesis states that SA positively moderates the relationship between ITUFA on FAA. According to research research that has been conducted, it shows that SA does not positively moderate the relationship between ITUFA on FAA. This is proven by the t value of 1.315, in which the value is below 1.96 (t <1.96). Adaptability system is a perception of Facebook Advertisement's ability to adjust the needs of each SMEs [7]. It can be concluded that SMEs in Karawang feel that Facebook Advertisement has not been able to meet the needs because most of them do not understand the use of Facebook Advertisement.

7. Conclusion and Managerial Implication

Based on the result of this research about the effect of variables of motivation toward Facebook Advertisement adoption, it can be concluded that in this study the factors that influence Intention to Use Facebook Advertisement in adopting Facebook Advertisement are Social Image, and Perceived Usefulness. These two influential factors are part of the motivation variable. Social Image and Perceived Usefulness are felt to be able to motivate SMEs to intend to use Facebook Advertisement.

Social Image is a beneficiary of an innovation that can raise one's social status. The higher the level of a person's social status in using Facebook Advertisement, this can affect the intention to use Facebook Advertisement. Perceived Usefulness focuses on the ease of using Facebook Advertisement to grow their business. SMEs entrepreneurs feel that they will be more effective and efficient in terms of time and energy if they use Facebook Advertisement so that they can improve their performance.

The result of this research gives recommendation for SMEs entrepreneurs in developing their business through Facebood Advertisement. The government needs to disseminate to SMEs the importance of internet marketing in developing their business in the current 4.0 industrial revolution era. Facebook is the most widely used social media network by the people of Indonesia today. Therefore, social media advertising through Facebook is suitable to be applied

by SMEs. Facebook has a product advertising feature called Facebook Advertisement which is an advertising service through social media networks at the most affordable cost among others. According to the results of this research, adoption of Facebook Advertisement can improve social status and ease in developing businesses of SMEs.

This research gives some additional view in SMEs business practice. The results of this research provide an understanding of the recommendations for action by stakeholders related to the adoption of Facebook Advertisement. Based on the research results obtained ,only two of the nine hypotheses are accepted. It is found that the Infrastructure do not positively moderate ITUFA's relationship to the FAA. This can occur because SMEs do not have enough resources and facilities to use Facebook Advertisement. The unavailability of infrastructure can affect past experiences of SMEs. Therefore, SMEs have less past experience, related to the use of technology. This fact is supported that Past Experience and Self Efficacy do not positively moderate the relationship between ITUFA and FAA. To be able to obtain solutions to these problems, businesses can work together with the Government to be able to obtain sufficient infrastructure. Thus, it can facilitate the use of technology. All of these variables belong to the Ability group. It can be concluded that SMEs currently do not have sufficient ability to facilitate the use of Facebook Advertisement.

From the result of process, it is found that the ability of the system to be adapted to the needs of users, the opportunity for trial use, and the means to obtain information about Facebook Advertisement has no positive effect on the relationship between intention to use and adoption of Facebook Advertisement. This can occur because SMEs do not have the opportunity to be able to try the Facebook Advertisement system. SMEs need to work together with several related parties such as the Government and the authorized Ministry to be able to bridge the acquisition of information and opportunities about technology for SMEs. SMEs can participate in training and exhibition related to technology, especially technology in marketing.

This research still has many limitations such as total of sample used in data process. There were only 100 SMEs that were included as research respondents. Therefore, subsequent studies should be able to increase the number of respondents so that they can contribute to better data. The selection of respondents was also a focus for further research improvement. Respondents need to have an understanding of Facebook Advertisement before filling out the questionnaire, so that filling out the questionnaire can run smoothly. This can also minimize errors in questionnaire results.

Acknowledgement

Appendix A. Questionnaire Items

Constructs	Items	Code	Source
(FAA)	I already have a product image for advertising on Facebook Advertisement	FAA1	Adopted [7, 20, 28]
	I have compiled a product description for creating Advertisement on Facebook Advertisement	FAA2	
	I have specified the name of the store to make Advertisement on Facebook Advertisement	FAA3	
	I have used Facebook Advertisement to advertise my product	FAA4	
(ITUFA)	I plan to use Facebook Advertisement in the future	ITUFA1	Adopted [7, 20, 28]
	I prefer to work using Facebook Advertisement	ITUFA 2	
(SI)	I believe that using Facebook Advertisement will increase my credibility	SI1	Adopted [6, 7]
	I believe that using Facebook Advertisement will increase professionalism	SI2	
	I believe that by using Facebook Advertisement my co-workers consider me more competent	SI3	
	I believe that by using Facebook Advertisement I have greater prestige than those who do not use	SI4	
	I believe that by using Facebook Advertisement I will have a high profile	SI5	

Constructs	Items	Code	Source
	I believe that using Facebook Advertisement is a status symbol in my organization	SI6	
(PU)	Using Facebook Advertisement in the process of selling my product will allow the product to sell faster	PU1	Adopted [23, 29]
	Using Facebook Advertisement will improve my performance	PU2	
	Using Facebook Advertisement will increase my work productivity	PU3	
	Using Facebook Advertisement will increase the effectiveness of my work	PU4	
	Using Facebook Advertisement will make my job easier	PU5	
	Facebook Advertisement will be useful for my work	PU6	
(IN)	I have the resources needed to use Facebook Advertisement	IN1	Adopted [7]
	I have enough facilities to use Facebook Advertisement	IN2	
	I routinely use software (example: spreadsheets, word processing tools, etc.) to achieve efficiency in daily operations	IN3	
	I often use electronic technology (example: email, internet browser, etc.)	IN4	
	I use social network / media connections to interact with other people in the context of work	IN5	
(PE)	I share my product information electronically with those who access Facebook Advertisement	PE1	Adopted [7]
	I use information technology (IT) to share documents and knowledge internally and externally (example: email attachment)	PE2	
	I use Facebook Advertisement to build better relationships with customers	PE3	
	I use Facebook Advertisement to customize the services that customers need	P34	
(SE)	I have experience using Facebook Advertisement	SE1	Adopted [7]
	I use a handheld device (example: PDA, smartphone, etc.) to record information	SE2	
	I have experience using Facebook Advertisement	SE3	
	I was able to learn new knowledge so I could use Facebook Advertisement	SE4	
(FAT)	I attended training on Facebook Advertisement	FAT1	Adopted [7]
	I have the opportunity to use Facebook Advertisement within a certain time limit through the exhibition	FAT2	
(ATI)	I got instructions for choosing Facebook Advertisement	ATI1	Adopted [7]
	I have a social network that can explain to me about Facebook Advertisement	ATI2	
	I interact directly with people who have used Facebook Advertisement	ATI3	
	My organization supports me to use Facebook Advertisement	ATI4	
(SA)	It is important for me that Facebook Advertisement can be customized to the needs of my business	SA1	Adopted [7]

Constructs	Items	Code	Source
	It is important for me that I have the opportunity to reduce and add the Facebook design display ads according to my business	SA2	
	It is important for me that the design of Facebook Advertisement can be customized to the needs of my business	SA3	

References

[1] S. Z. Ahmad, N. Ahmad, and A. R. A. Bakar, "Reflections of entrepreneurs of small and medium-sized enterprises concerning the adoption of social media and its impact on performance outcomes: Evidence from the UAE," *Telematics and Informatics,* vol. 35, pp. 6-17, 2018.

[2] J. Cenamor, V. Parida, and J. Wincent, "How entrepreneurial SMEs compete through digital platforms: The roles of digital platform capability, network capability and ambidexterity," *Journal of Business Research,* vol. 100, pp. 196-206, 2019.

[3] H. Bouwman, S. Nikou, and M. d. Reuver, "Digitalization, business models, and SMEs: How do business model innovation practices improve performance of digitalizing SMEs?," *Telecommunications Policy,* 2019.

[4] P. Grover and A. K. Kar, "User engagement for mobile payment service providers – introducing the social media engagement model," *Journal of Retailing and Consumer Services,* 2018.

[5] I. W. Stats. (2019, 20 December). *ASIA INTERNET USE, POPULATION DATA AND FACEBOOK STATISTICS - JUNE 30, 2019.* Available: https://http://www.internetworldstats.com/stats3.htm - asia

[6] F. Liébana-Cabanillasa and M. Alonso-Dos-Santos, "Factors that determine the adoption of Facebook commerce: The moderating effect of age," *Journal of Engineering and Technology Management,* p. 18, 2017.

[7] A. F. Hadining and Sukanta, "Determine The Influenced Factors of Facebook Ads Adoption by SMEs," in *International Conference on Industrial Engineering and Operations Management*, Bandung, Indonesia, 2018.

[8] A. F. Hadining, E. I. Sari, and Kusnadi, "Analisis Kategori Iklan Berbasis "Facebook Ads" untuk UKM," *Jurnal Teknologi Rekayasa,* vol. 4, pp. 41-46, 2019.

[9] S. Ainin, F. Parveen, S. Moghavvemi, and N. I. Jaafar, "Factors influencing the use of social media by SMEs and its performance outcomes," *Industrial Management & Data Systems,* vol. 115, pp. 570-588, 2015.

[10] M. I. Dahnil, K. M. Marzuki, J. Langgat, and N. F. Fabeil, "Factors Influencing SMEs Adoption of Social Media Marketing," *Procedia - Social and Behavioral Sciences* vol. 148, pp. 119-126, 2014.

[11] R. Rahayu and J. Day, "Determinant Factors of E-commerce Adoption by SMEs in Developing Country: Evidence from Indonesia," *Procedia - Social and Behavioral Sciences,* vol. 195, pp. 142-150, 2015.

[12] N. H. M. Puad, A. M. Ali, M. A. Suhaimi, and H. Hussin, "A Case Study on the Adoption of Cloud Computing in Malaysia from The Perspectives of Cloud Providers," *International Journal of Innovation in Enterprise System,* pp. 42-47, 2019-05-24 2019.

[13] S. Sarosa, "Adoption of Social Media Networks by Indonesian SME: A Case Study," *Procedia Economics and Finance,* vol. 4, pp. 244-254, 2012.

[14] T. M. Nisar, G. Prabhakar, P. V. Ilavarasan, and A. M. Baabdullah, "Facebook usage and mental health: An empirical study of role of non-directional social comparisons in the UK," *2019,* vol. 48, pp. 53-62, 2019.

[15] S. Feng, Y. K. Wong, L. Y. Wong, and L. Hossain, "The Internet and Facebook Usage on Academic Distraction of College Students," *Computers & Education,* vol. 134, pp. 41-49, 2019.

[16] T. Schwinn, J. Hopkins, S. P. Schinke, and X. Liu, "Using Facebook ads with traditional paper mailings to recruit adolescent girls for a clinical trial," *Addictive Behaviors,* vol. 65, pp. 207-213, 2017.

[17] L. Wozney, K. Turner, B. Rose-Davis, and P. J. McGrath, "Facebook ads to the rescue? Recruiting a hard to reach population into an Internet-based behavioral health intervention trial," *Internet Interventions,* vol. 17, 2019.

[18] B. Ramdani, P. Kawalek, and O. Lorenzo, "Predicting SMEs' adoption of enterprise systems," *Journal of Enterprise Information Management,* vol. 22, pp. 10-22, 2009.

[19] E. Bigné, B. Hernández, C. Ruiz, and L. Andreu, "How motivation, opportunity and ability can drive online airline ticket purchases," *Journal of Air Transport Management,* vol. 16, pp. 346-349, 2010.

[20] R. Govindaraju, A. F. Hadining, and D. R. Chandra, "Physicians' Adoption of Electronic Medical Records: Model Development Using Ability – Motivation - Opportunity Framework," presented at the Information and Communication Technology. ICT-EurAsia 2013, 2013.

[21]   D. Li, X. Xu, C.-f. Chen, and C. Menassa, "Understanding energy-saving behaviors in the American workplace: A unified theory of motivation, opportunity, and ability," *Energy Research & Social Science,* vol. 51, pp. 198-209, 2019.

[22]   R. Baumhof, T. Decker, H. Röder, and K. Menrad, "Which factors determine the extent of house owners' energy-related refurbishment projects? A Motivation-Opportunity-Ability Approach," *Sustainable Cities and Society,* vol. 36, pp. 33-41, 2018.

[23]   A. Riskinanto, B. Kelana, and D. R. Hilmawan, "The Moderation Effect of Age on Adopting E-Payment Technology," *Procedia Computer Science,* vol. 124, pp. 536-543, 2017.

[24]   H. A. Fatimah and R. Trisminingsih, "Analyzing Success Factors of Enterprise Resource Planning Adoption using Analytical Hierarchy Process," *International Journal of Innovation in Enterprise System,* vol. 2, pp. 45-49, 2018.

[25]   A. S. Singh and M. B. Masuku, "Sampling Techniques & Determination of Sample Size in Applied Statistics Research: an Overview," *International Journal of Economics, Commerce and Management,* vol. II, 2014.

[26]   K. K. d. UKM. (2017, 22 December). *PERKEMBANGAN DATA USAHA MIKRO, KECIL, MENENGAH (UMKM) DAN USAHA BESAR (UB) TAHUN 2016 - 2017.* Available: http://www.depkop.go.id/uploads/laporan/1549946778_UMKM 2016-2017 rev.pdf

[27]   I. Ghozali, *Structural Equation Modeling Metode Alternatif dengan Partial Least Square*, 2nd ed. Semarang, Indonesia, 2014.

[28]   R. Govindaraju, A. F. Hadining, and D. R. Chandra, "The Application of Motivation-Ability-Opportunity Framework in Studying EMR Adoption by Physician," in *10th International Conference on Enterprise Systems, Accounting and Logistics 2013*, Utrecht, 2013.

[29]   A. A. Alalwan, A. M. Baabdullah, N. P. Rana, K. Tamilmani, and Yogesh K. Dwivedi, "Examining adoption of mobile internet in Saudi Arabia: Extending TAM with perceived enjoyment, innovativeness and trust," *Technology in Society,* vol. 55, pp. 100-110, 2018.