

Study on Social Media Users and Its Relation to the e-Commerce Activities on Youth in Indonesia

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Article Information

Received: 4 January 2016

Accepted: 7 March 2016

Published: 25 April 2016

DOI:

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ISSN 2355-1771

ABSTRACT

Internet, Social Media and e-Commerce are three most common things people could find and usually interact with nowadays. Internet has been part of our basic daily needs: no one can work professionally without being connected to the network even once in a day. Those people usually also have at least one Social Media accounts; as well know about the existence of e-Commerce markets. Also, Social Media and e-Commerce Channel nowadays more likely to interact with each other: people spreading the word about their commerce in the Social Networks. Based on that fact, this research purpose is to find out which factors, based on the Technology Acceptance Model, is playing the huge role on this so-called relations between the interaction of people in the Social Media and their activities in the e-Commerce, especially on Indonesian youth. It turns out, that Voluntariness has 55% contribution towards this relations, as well as Job Relevance, Result Demonstrability and Computer Self-Efficacy with 63%, 60% and 58% contributions respectively.

Keywords: *Index Terms - E-Commerce, Social Media, Technology Acceptance Model, AMOS, Voluntariness, Job Relevance, Result Demonstrability, Computer Self-Efficacy.*

1. Introduction

Social Media has been part of people lives nowadays. Almost everyone who knows the Internet should also aware about the Social Media. From online dictionary, cross-referencing sites up to online marketplace have utilize the social aspects: they allow their user to at least interact with each other, either through comments, review, messages or feedback^[1]. Social Media also allows every user that has Internet access now to move every aspects of the social life, into the cyberspace: interacting with other people through the network, in a way they usually interact with others off the network. This phenomenon soon becomes one of the major factors of the development of several on-the-network activities, including commercial activities on the Internet, which later known as electronic commerce (or e-Commerce in short).

As a comparison, today there are averagely around 73 millions Internet users in Indonesia on the previous year alone^[2], and it is predicted that the number will be easily surpassing hundred millions users in 2 or 3 years later. Surprisingly, from those numbers, more than 90% of the Internet user in Indonesia, or around 70 millions in number, are active Social Media users from various services. Furthermore, roughly 20 millions of them are teenagers and new users to the Internet^[3]. Thus it cannot be denied anymore that Social Media has been part of daily life for those who already have access to the Internet.

2. Literature Review

A. *Social Media and E-Commerce*

Social Media itself originally was a platform created to accommodate the social aspects for people over the network, in a way that distances become insignificant anymore. It allows people to share their thought, interact and converse with each other similar like how you do it in real life. This also include the commercial activities of selling, buying, renting and giving away stuffs between two people or more in the network without the need to actually meet each other in person. All and every transaction process, from offering, procuring, paying and sending stuffs are done online. Later on, these activities are divided into two big categories based on how people doing it. For those who have its own channel and services called as e-Commerce, as mentioned earlier, and for the rest who keep doing their commerce on the Social Media called as Social Commerce.

Social media are believed to have some contribution to these commercial activities in the network. People who become customer for these e-Commerce usually is a social media users, and it is likely that they will share anything they have bought online to their social sphere. However, these are obviously not the only contributions and factors that social media give to online commercial activities.

B. *Technology Acceptance Model*

On determining which factor might be important for the e-Commerce activity, the Technology Acceptance Model method (or also known as TAM in short) can be applied. This model aims to evaluate how a new technology introduced to the mass can be accepted and used effectively on the people's daily life^[4]. At first, this model only evaluates about the Perceived Usefulness and Perceived Ease-of-Access of a technology. However, as the

time passed, the method updated several times and redesigned to meet a specific technology requirement.

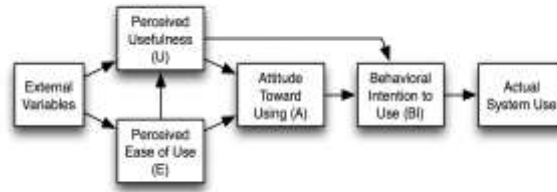


Fig. 1. Technology Acceptance Model, Version 1

Regarding the new e-Commerce technology, the original version of TAM method has been redesigned and proposed as a standard to include several additional factors, which has been deemed as important factors as mentioned before in this section. In this new version, the Trust factor, Risk management and several other factors are included in the measured variable to evaluate the e-Commerce technology^[5]. This version of TAM for the e-Commerce technology is usually called as TAM version 3, or TAM3 in short.

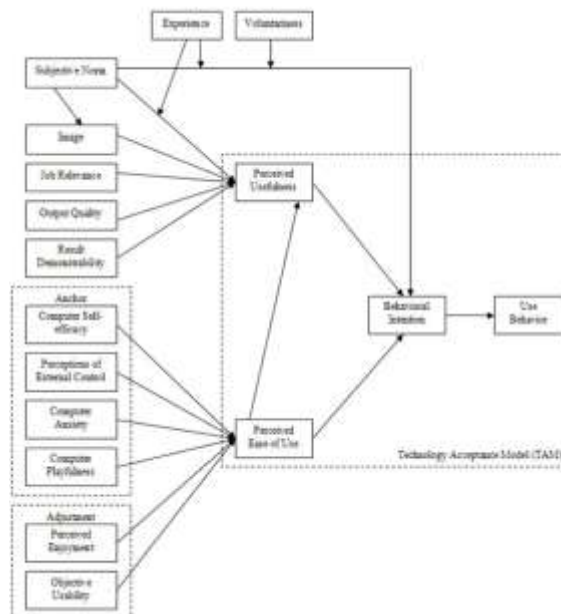


Fig. 2. Technology Acceptance Model, Version 3

In this new version of Technology Acceptance Model, some modifications and fine-tuning are added to the original version, so it may further enhance and fully supports the measurement of e-Commerce activities. On this third version of TAM, the factors that are being added are the four Anchors and two Adjustments, as mentioned above. These additions then will be used as the base framework for this study, along with the earlier version and features of the Technology Acceptance Model.

There are several terms and definitions used in the TAM3. Here are the brief description of each terms:

Table 1. Definitions of Term used in TAM3

Terms	Definitions
Perceived Usefulness	The degree to which a person believes that using a particular system would enhance his or her job performance ^[6] .
Perceived Ease of Use	A degree to which a person will believe that by using a system will be free of, or at least use the least possible, efforts ^[6] .
Experience	User with different experience towards a certain system will have a different performance, confidence and result towards the system with other user ^[5] .
Voluntariness	How far a user are voluntarily using or learning the system: the more they become voluntary to use a system, they should be able to produce better result and have a higher confidence towards the system ^[5] .
Computer Anxiety	The degree of an individual's apprehension, or even fear, when he is faced with the possibility of using computers ^[7] .
Computer Playfulness	The degree of cognitive spontaneity in microcomputer interactions ^[8] .
Perceived Enjoyment	The extent to which the activity of using a specific system is perceived to be enjoyable in its own right, aside from any performance consequences resulting from system use ^[7] .
Objective Usability	A comparison of system based on the actual level, rather than perceptions, of effort that are required in order to complete a specific job/tasks ^[7] .
Computer Self-Efficacy	The degree to which an individual believes that he has the ability to perform a specific job using the system/computer ^[9] .
Job Relevance	The degree to which an individual believes that the targeted system is applicable to their job ^[10] .
Output Quality	The degree to which an individual believes that the system gives result or performance to their taks just as desired ^[10] .
Result Demonstrability	The degree to which an individual believes that the result of using systems can be demonstrated well ^[11] .

3. Research Methodology

The study is conducted by handing out surveys to a number of respondent, in order to evaluate how they relate between the Social Media Interactions with the e-Commerce Activities, and from that, answering the question “Which factor is the main/major point for the relation between Social Media Interactions and e-Commerce Activities?”

A. Hypothesis

Due to the nature that Social Media which allows everyone to speak out their opinion, the usefulness of a product offered is presumed to be the major factor in the e-Commerce activities in the Social Media. This usefulness value then may affect the willingness of people to at least check out a product, which later may lead into actual transactions.

B. Data Analysis

For the purpose of evaluating and analyzing the gathered data using the surveys, AMOS was used to take the conclusion of the analysis processes. There are roughly 317 data are gathered during the survey for this purpose.

The data would be first calculated and categorized based on the TAM3’s features, to find its weighted value based on the range from 0 to 10, as the basic input for the analysis in AMOS system. After the values being analyzed using the AMOS system, then the result will be used in order to take the decision on the analysis, whether the original hypothesis can be accepted or should be rejected and accept the otherwise.

AMOS itself is a sub-module for SPSS (Statistical Package for the Social Sciences) developed by IBM for Windows OS. AMOS stands for Analysis of Moment Structures, and usually used on analyzing Structural Equation Modeling (SEM), Path Analysis and Covariance Structure Modeling. t features an intuitive graphical interface that allows the analyst to specify models by drawing them, and load the databases from various data storing formats, including Microsoft Excel and SPSS Database.

Based on the TAM3 model discussed earlier, the proposed model for the AMOS Regression Weight Analysis is as following:

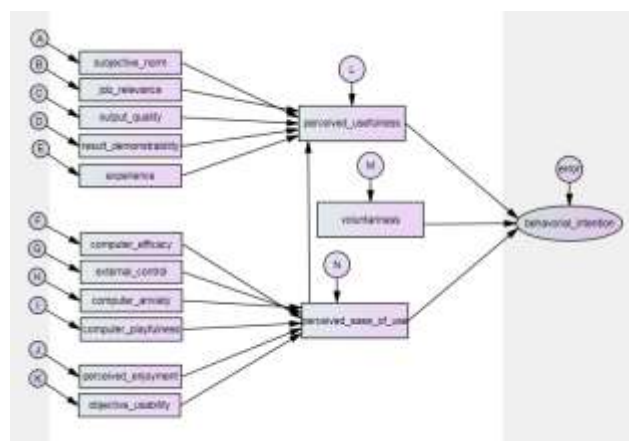


Fig. 3. AMOS Regression Weight Analysis Model

4. Analysis Results

After all data were gathered and validated properly, the analysis process started first by recalculating it into the aforementioned scaling from 0 to 10 and summarized it into the related factors in TAM, in order to reach uniformity and easier calculation in the further process. After the calculation is completed, these values then become the input value for the AMOS model.

In the AMOS model, in order to achieve minimum constraint requirement for identifiability of the model, all the unobserved variables (inputs and errors) are fixed with 1,1 variance and mean values. This also applied to the behavioral_intentions, which is the final output of the model. Thus, the model is modified as such:

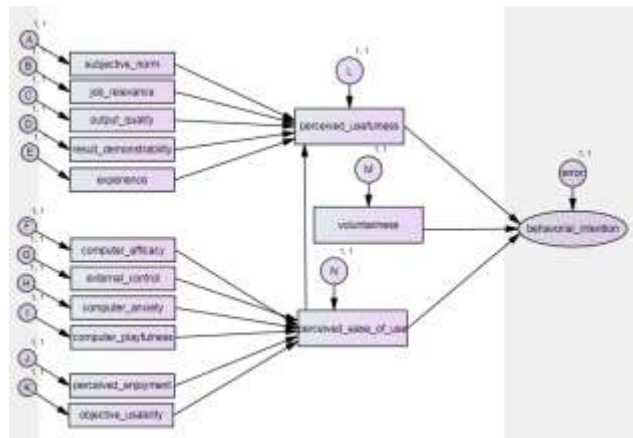


Fig. 4. AMOS Revised Model

Using the modified model, the data then inputted and analyzed using the regression weight approach, to find out how each determinant have contribution on the following determinants or to the final variable. The analysis result are as following:

Intercepts: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
computer_efficacy	3.570	.134	26.650	***	
external_control	4.432	.092	48.140	***	
computer_anxiety	5.609	.082	68.328	***	
computer_playfulness	8.486	.060	142.427	***	
perceived_enjoyment	4.799	.185	25.981	***	
objective_usability	4.220	.123	34.256	***	
subjective_norm	3.175	.081	39.216	***	
job_relevance	3.718	.110	33.869	***	
output_quality	4.161	.168	24.820	***	
result_demonstrability	3.144	.168	18.705	***	
experience	7.408	.051	144.962	***	
perceived_ease_of_use	.702	.523	1.343	179	
perceived_usefulness	-.531	.457	-1.162	245	
voluntariness	4.025	.083	48.311	***	
behavioral_intention	1.000				

Fig. 5. Intercepts Value

Regression Weights: (Group number 1 - Default model)

		Estimate	S.E.	C.R.	P	Label
computer_efficiency	<-- F	1.947	0.77	25.179	***	
external_control	<-- G	1.338	0.53	25.179	***	
computer_anxiety	<-- H	1.193	0.47	25.179	***	
computer_playfulness	<-- I	.866	0.34	25.179	***	
perceived_enjoyment	<-- J	2.685	1.07	25.179	***	
objective_usability	<-- K	1.791	0.71	25.179	***	
perceived_ease_of_use	<-- computer_efficiency	.313	0.19	16.310	***	
perceived_ease_of_use	<-- external_control	-.106	0.28	-3.796	***	
perceived_ease_of_use	<-- computer_playfulness	.226	0.43	5.240	***	
perceived_ease_of_use	<-- perceived_enjoyment	.047	0.14	3.371	***	
subjective_norm	<-- A	1.177	0.47	25.179	***	
job_relevance	<-- B	1.596	0.65	25.179	***	
output_quality	<-- C	2.437	0.97	25.179	***	
result_demonstrability	<-- D	2.444	0.97	25.179	***	
experience	<-- E	.743	0.30	25.179	***	
perceived_ease_of_use	<-- N	.664	0.26	25.179	***	
perceived_ease_of_use	<-- objective_usability	.097	0.21	4.644	***	
perceived_ease_of_use	<-- computer_anxiety	.357	0.31	11.422	***	
perceived_usefulness	<-- subjective_norm	.107	0.26	4.044	***	
perceived_usefulness	<-- output_quality	.101	0.13	7.914	***	
perceived_usefulness	<-- result_demonstrability	.303	0.13	23.835	***	
perceived_usefulness	<-- experience	.061	0.42	1.451	.147	
voluntariness	<-- M	1.211	0.48	25.179	***	
perceived_usefulness	<-- L	.552	0.22	25.179	***	
perceived_usefulness	<-- perceived_ease_of_use	-.054	0.30	-1.827	.068	
perceived_usefulness	<-- job_relevance	.485	0.19	24.960	***	
behavioral_intention	<-- perceived_usefulness	.066				
behavioral_intention	<-- perceived_ease_of_use	.082				
behavioral_intention	<-- error	.100				
behavioral_intention	<-- voluntariness	.083				

Fig. 6. Regression Weight Estimates

Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
objective_usability	.000
computer_anxiety	.000
perceived_enjoyment	.000
computer_playfulness	.000
external_control	.000
computer_efficiency	.000
job_relevance	.000
perceived_ease_of_use	.598
experience	.000
result_demonstrability	.000
output_quality	.000
subjective_norm	.000
voluntariness	.000
perceived_usefulness	.801
behavioral_intention	.700

Fig. 7. Squared Multiple Correlations

Standardized Regression Weights: (Group number 1 - Default model)

		Estimate
computer_efficacy	<--- F	1.000
external_control	<--- G	1.000
computer_anxiety	<--- H	1.000
computer_playfulness	<--- I	1.000
perceived_enjoyment	<--- J	1.000
objective_usability	<--- K	1.000
perceived_ease_of_use	<--- computer_efficacy	.581
perceived_ease_of_use	<--- external_control	-.135
perceived_ease_of_use	<--- computer_playfulness	.187
perceived_ease_of_use	<--- perceived_enjoyment	.120
subjective_norm	<--- A	1.000
job_relevance	<--- B	1.000
output_quality	<--- C	1.000
result_demonstrability	<--- D	1.000
experience	<--- E	1.000
perceived_ease_of_use	<--- N	.634
perceived_ease_of_use	<--- objective_usability	.165
perceived_ease_of_use	<--- computer_anxiety	.407
perceived_usefulness	<--- subjective_norm	.101
perceived_usefulness	<--- output_quality	.198
perceived_usefulness	<--- result_demonstrability	.597
perceived_usefulness	<--- experience	.036
voluntariness	<--- M	1.000
perceived_usefulness	<--- L	.446
perceived_usefulness	<--- perceived_ease_of_use	-.046
perceived_usefulness	<--- job_relevance	.625
behavioral_intention	<--- perceived_usefulness	.446
behavioral_intention	<--- perceived_ease_of_use	.468
behavioral_intention	<--- error	.548
behavioral_intention	<--- voluntariness	.548

Fig. 8. Standardized Regression Weight Estimates

Those analysis values then used as the update value to the actual model being used, in order to update the correlation weight on the model. These weights are representing the contribution of determinants towards the following determinant or the final output, in the scale from -1 to 1:

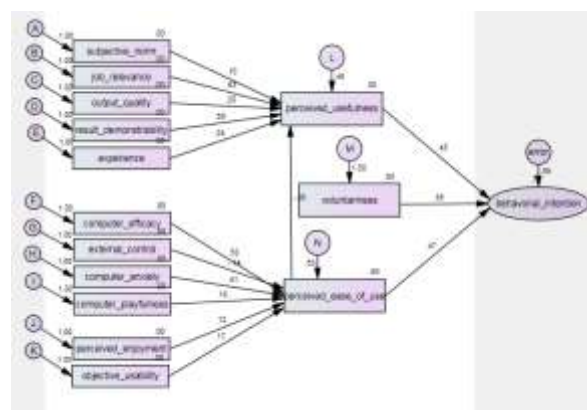


Fig. 9. Final Result for AMOS Regression Weight Analysis

From the model above, it is shown that among the three main factors that directly affecting the Behavior Intention of the user, the Voluntariness play the biggest role with 55% contribution to the variance of the Behavior Intention. However, the other two factors, with Usefulness at 45% and Ease of Use at 47%, cannot be dismissed just like that. It also poses some affect that might contribute to the final output.

Voluntariness factor lies ahead of Perceived Usefulness and Perceived Ease of Use probably because while interacting on Social Media, people does not actually meet in person, but rather seeing a reflection of someone in the net. Thus, while from this kind of interaction related to the e-Commerce activities, the user willingness to contribute and interact poses the major role here.

For the sub-factors from Usefulness and Ease of Use, those that aren't directly affect the Intention, but still plays a role on determining it, Job Relevance and Result Demonstrability for the Usefulness and Computer Efficacy for the Ease of Use is the main factor that play the biggest role, for being at 63%, 60% and 58% respectively. This model also impose that even though it looks like important in the real world, Experience (4%) and External Control (-14%) is not much considered when people want to correlate between Social Media Interactions towards the e-Commerce Activities. For the other factors, they might be somehow gives contribution on the Social Media Interaction relations towards the e-Commerce Activities, but not that much effective like the others mentioned above.

As per why those three sub-factors could pose such a high value is predicted that people tends to find something that can helpful for their work, possess a good result and easy to be understand. Of course, being an online technology will also require it user to able to operate the sophisticated technologies fluently, or at least understand the basic on how to operating the technology on a certain system without having a constant help from anyone. On the other hand, Experiences and External Control poses such a low score probably because even with or without experience on doing such things, people will keep interacting on the network, and finally, might do some commerce activities online, regardless the limitation they had.

5. Conclusion

The purpose of this research is to evaluate which factor, based on the Technology Acceptance Model, harbors the primary or major effect towards the relation between Social Media Interactions and e-Commerce Activities on Youth in Indonesian. The research conducted by handing out online surveys and then analyzes the result using AMOS SPSS, analyzing tools developed by IBM using the statistical approach.

The result of the analysis shows that there is one major factor out of the three primary factors that affects the relations greatly, as well as three sub-factors that lies behind the primary factors. Those factors are: Voluntariness for the main factor, with 55% contribution to the relation between Social Media Interactions and e-Commerce Activities on Youth in Indonesian; Job Relevance and Result Demonstrability as the sub-factor from Perceived Usefulness, with 63% and 60% contribution respectively; and Computer Self-Efficacy as the sub-factor from Perceived Ease of Use with 58% contribution.

On the other hand, this research also displays that, regardless the fact on the real event, Experiences of the user and External Controls that might limiting them is not affecting the relations at all, by posing only 4% contribution for the Experience and a negative contribution by -14% for the External Controls.

As for the e-Commerce sellers, this study implies that the customer voluntariness, which constitutes the self-willingness of the user to buy or do activity on the e-Commerce

channel and interact in the Social Media, plays quite major role. So it is necessary to do more interactions on the Social Media, either promotion, product explanation and similar, that can piqued the user curiosity, which in the end might affect their voluntariness to find out about the product, tests it out and in the end, doing e-Commerce activities on the channel. For the rest major factors: Job Relevance, Computer Self-Efficacy and Result Demonstrability, it is necessary then to able to express the relation of the product to the user's need and the result posed by the product to fulfill that need, with minimum effort possible.

As for the e-Commerce users, this study suggests that while doing the Social Media Interactions to gather information and to perform e-Commerce activities, it is necessary to find out something that may be supports your needs and expose a good result in a minimum effort.

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